CREATING STRUCTURE-BASED COMMUNICATION TASKS FOR SECOND LANGUAGE DEVELOPMENT

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Task based language teaching has gained favor among both second language teachers and researchers over the last decade. Arguments for the value of a "focus on form" and attention to forms in input have also been made by several SLA researchers, thus pointing to a role for grammar instruction in classroom SLA. It is suggested here that the use of communicative and meaningful classroom tasks can focus learners' attention on grammatical forms in input and, thus, facilitate their acquisition

This proposal differs from other recent treatments of communicative grammar instruction in its emphasis on the following areas: 1) "closed" rather than "open" tasks; 2) comprehension-based before production-based tasks; 3) grammatical targets which have clear form-meaning relationships. Thus, while the proposal is more narrow in scope than some other treatments, it is much more specific: i.e., it proposes tasks in which communicative outcomes can be predicted and manipulated in advance by the designer and in which grammatical form and meaning are tightly linked. Such tasks are similar to those used to test learners' language processing capabilities in psycholinguistic research, though here they are used for pedagogical purposes. Examples include tasks covering a wide range of syntactic categories and functions.

In conclusion, we argue for an approach to designing tasks which incorporates: 1) a cognitive perspective on SLA and language processing, 2) insights from research on communicative task design from second language research, and 3) methods of measuring language development from psycholinguistics and interlanguage variation studies. By combining these with language teachers' careful observations of their students' problems in comprehending and being comprehended, meaning and communicative tasks for grammar pedagogy can be designed.

Introduction

The teaching of grammar in second language (SL) pedagogy has a history of at least 2,500 years (Rutherford, 1987), and focus on grammatical form is probably a fundamental factor in the advantage instructed SL learners enjoy over naturalistic learners (Ellis, 1989; Long, 1988). Recently, the use of tasks in language teaching has gained increasing acceptance in the language teaching field (e.g., (Nunan, 1989)), and strong claims have been made regarding the

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effectiveness of tasks in facilitating SLA (Long, 1985). However, regarding the use of communicative tasks to teach second language grammar, there has only recently begun to be much written (For some initial thoughts, see Loschky, 1989; Madden, & Reinhart, 1987; Nunan, 1989; Rutherford, 1987; Ur, 1988; Rea Dickins & Woods, 1988; Bley-Vroman, 1989).

Recent discussion of the role of grammar has focused on at least three key questions: When should a particular principle be taught? Which principles should be taught? How should the principles be taught? (see Rutherford & Sharwood Smith, 1988). Within this domain, we deal primarily with the third question, though some discussion of the first and second questions will arise as a result of the it. Thus, taking as a starting assumption that the acquisition of grammar is critical to language development, the question remains of how grammar should be incorporated into language instruction. It will be argued here that the best way to teach grammar is not by drill, but, instead as Rutherford and Sharwood-Smith (1988) claim, by use of "consciousness raising" activities which facilitate learners' restructuring through hypothesis testing and inferencing. In this paper it is claimed that meaningful communication tasks can be effectively used to do just that. In particular, we will focus on an approach to designing structurally-based communication tasks and the psycholinguistic rationale behind them.

We argue on the basis of findings in psycholinguistics and learning theory that restructuring takes place when learners notice gaps in their knowledge. In order for gaps to be noticed, grammar must be essential to successful task performance; this will happen when there is a clear the connection between form and meaning in the task. When a learner fails in a task and receives clear message-oriented feedback, a gap can become apparent. The two crucial features of communicative grammatical tasks are thus (1) essentialness of grammar to the communication task and (2) clear feedback.

Because learners use of strategic competence can substitute for grammatical competence, successful creation of such tasks requires that the designer exercise a great deal of task control. Since it is easier to control what learners hear than what they say, it is correspondingly easier to design grammatical comprehension tasks than production tasks.

While recognizing that grammar has important discourse functions and interacts with the pragmatic, stylistic, and sociolinguistic systems, we will concentrate here on sentence-level morphosyntax and its relationship to what

might be called "literal meaning." However, it is clear that the same general considerations will enter into the creation of instructional materials which aim at the acquisition of grammar in a larger context.

In this article, we will concentrate on those communicative tasks which can be broadly classified as "information gap" tasks, in which different participants have different relevant pieces of information (facts, but also sometimes opinions, proposals, or the like), and the task requires the participants to find out information from the others, using language. The concept of communicative task often comprises, by extension, the negotiation of meaning in order to achieve mutual understanding. For us, for something to count as a "task", the immediate criterion of success must be outside of grammar. Other scholars have used "task" to include exercises in which grammatical accuracy is an explicit part of the task statement. We do not apply the term "task" to such tests or exercises in grammar. (See Kumaravadivelu (1989) for an interesting discussion of the many uses of the term "task".)

Task-based Language Teaching

Communicative tasks have been considered one of the more promising elements of the "communicative approach" and have recently gained considerable support within the second language teaching community. However, tasks have not generally been used to teach grammar per se. Thus it is that Nunan (1989, p. 10) considers the communicative task as "a piece of classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their *attention is principally focused on meaning rather than form* [emphasis added]." Communicative tasks have up to now typically been used to promote fluency. Among the best known fluency tasks are "Spot the Difference" picture pairs (information gap), or problem solving discussion tasks such as "The Desert Island" (optional information gap, or "opinion gap" (Prabhu, 1987)) More theoretically oriented applications of communicative tasks have proposed that they be used to promote negotiated language use in particular situations or for specific functions (e.g., Long, 1985; Yalden, 1987). For example, Long (1985) suggests that communicative tasks be based upon job descriptions found in the *Dictionary of Occupational Titles*, thus applying tasks to the teaching of English for Specific Purposes.

In contrast, little has been done with the idea of teaching grammar through task-based methodology, though at least one such text book and one resource book are currently on the ESL market (Madden & Reinhart, 1987; Ur 1988). Perhaps the key problem in tying grammar pedagogy and communicative tasks together has been in making the necessary connection between "grammar" and "communication." As we shall show at length below, this connection is fundamental to the entire enterprise of creating grammatical tasks. Grammar allows you to "communicate what you mean" (to borrow the title of one grammar text (Pollock, 1982)).

Tasks have also generated considerable interest among SLA researchers. Following Long's (1981) line of research on modified input and interaction, attention has been paid to tasks' promotion of negotiated interaction (Crookes, 1986; Long, 1989). Among other things, this research has shown relationships between variation in task types and variation in the quantity and quality of negotiated interaction (e.g., Crookes, 1986; Loschky, 1988; Pica & Doughty, 1985; Pica, Holliday, Lewis & Morgenthaler, 1989; Gass & Varonis 1985), which, in turn, has been shown to facilitate learners' listening comprehension (Loschky, 1989; Pica, Young & Doughty, 1987) and to lead to more target-like production (Pica, Holliday, Lewis & Morgenthaler, 1989).

Open Versus Closed Tasks

An important distinction among tasks appears to be between so-called "open" and "closed" tasks (Long, 1989). Loschky (1988) refers to the same distinction in terms of the type of information that learners exchange: either "indeterminate" or "discrete." In an open task, the information which learners must exchange is quite unrestricted or "indeterminate" (e.g., "The Desert Island"). In a closed task, the information needed for task success is very specific or "discrete" (e.g., "Spot the Difference" or "Match the Design"). Closed tasks appear to lead to more negotiation of meaning (Loschky, 1988) and more learner speech modifications towards target language (TL) norms (Pica, Holliday, Lewis, & Morgenthaler, 1989). They thus appear to be superior to open tasks in at least two ways. First, they promote negotiation of meaning and thus are likely to facilitate comprehension. Second, they seem to promote focus on the form of utterances in input (or output). For both of the above reasons, closed tasks are ideally suited for use in teaching grammar, since, as we shall show, they can be designed so that grammatically encoded

information is essential to task success. Schmidt (1990) has argued that such task specificity is exactly what is needed to promote SLA in the classroom. Drawing on experimental research from cognitive psychology, Schmidt argues in the strong form of his "consciousness hypothesis" that:

> attention to input is a necessary condition for any learning, and that what must be attended to is *not input in general*, but whatever features of the input play a role in the system to be learned [emphasis added]. (p. 30)

If one takes this last point seriously, it points out a serious problem with a majority of the information gap tasks used in SL teaching at this time: a lack of specificity in terms of the linguistic focus of instruction.[1] Doyle (1983) argues that one learns from a task whatever one is led to do in a task. In most common information gap tasks, learners can can exchange information solely through use of semantic- and pragmatic-based strategies combined with their background knowledge. Such tasks then, may do more to develop strategic than linguistic competency.[2]

Grammatical Tasks

In the rest of this paper, we will look at several areas of interest in arguing for the use of tasks to develop grammatical competence. First, we will outline some of the theoretical underpinnings of our view of SLA and language processing which are critical to task design. Next, we will look briefly at the use of structurally-based tasks in language testing and psycholinguistic research. We will also point out some important weaknesses in many current grammatical tasks. Based upon this, we will suggest criteria for successful structurally-based tasks. Finally, we will discuss the development of such tasks and how they might be used in the classroom.

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[1] One might question whether a linguistic focus is compatible with a "communicative" task. Our answer is a definite "yes" if one speaks of communicative tasks as information gaps as we do here.

[2] While strategic competence is undoubtedly of great use, it does not seem reasonable as the only ultimate goal for SL instruction, even within a communicative framework. Furthermore, a linguistic focus of instruction in no way rules out a shared focus on communication. Neither does it imply a structural syllabus. Rather, a linguistic focus can be introduced when needed to serve communicative ends.

Theoretical Underpinnings

In arguing for the use of structurally-based communication tasks we will draw upon a cognitive approach to SLA (e.g., Hulstijn, in press; McLaughlin, 1987). Hulstijn identifies the following critical factors: the way in which the learner processes the target language; the current state of the learner's interlanguage (IL); linguistic characteristics of the target language structures; frequency of the structures in input, and, finally, the compatibility of the learning and testing situations. All of the above factors can either be controlled or at least taken account of in a task-based approach to language teaching.

Automatization and Restructuring

McLaughlin (1987) offers an overview of a cognitive theory of SLA. Two important acquisitional processes in this theory are "automatization" and "restructuring." Automatization involves "a learned response that has been built up through the consistent mapping of the same input to the same pattern of activation over many trials" (p. 134). A response which is automatized is relatively permanent and can be executed both quickly and with little effort. Automatization occurs through practice. The positive impact of practice on task performance has been shown in numerous skill areas, from rolling cigars at a tobacco factory to justifying proofs in a geometry course (for review, see Anderson, 1985). The concept of automatization seems very close to the traditional belief that "practice makes perfect" held by many language teachers. By itself, automatization cannot account for the course of SLA, which is not simply a gradual progressions toward perfection through practice. As all too many SLA studies have shown, simply practicing a given language structure does not invariably result in "perfect" performance (e.g., Lightbown, 1983; Pienemann, 1989). Nonetheless, as we will argue later, automatization is an important benefit of most tasks.

Restructuring, on the other hand, accounts for the "sudden moments of insight or "clicks of comprehension" that SL learners frequently report experiencing (McLaughlin, 1987, p. 138). Restructuring is likely governed by inferencing and hypothesis testing (p. 147), and in this paper we shall have frequent reference to "hypothesis formation/testing or restructuring." By "hypothesis" is meant the learner's conscious or unconscious representation of the relationship between a given structure and its function. As Rutherford

(1987) puts it:

> There is widespread recognition that the pattern of language acquisition for the L2 learner is one wherein, among other things, hypotheses about the organization of the target language are formed, tested out, and then often abandoned in favor of more reasonable ones. The interesting question is what it is that leads the learner to abandon one hypothesis in favor of another. (p. 123)

It is apparently when the learner "notices" a "gap" in his/her representation of the relationship between a given linguistic form and its function that such restructuring can occur (Schmidt, 1988; for references to "noticing" see also Gass, 1988, and Rutherford, 1987). Furthermore, it appears that "noticing" must involve some degree of conscious attention in order to be successful. Schmidt argues that carefully designed tasks be used to bring about such noticing.

Hypotheses can be tested in a number of ways. Færch and Kasper (1983), point out that hypotheses can be tested either through comprehension or production and either introspectively or through interaction with an interlocutor. Furthermore, along with McLaughlin, we assume that both restructuring and automatization play important and complementary roles in SLA.

Processing and Communication Strategies

Cognitive psychology and psycholinguistics have also provided us with a rich background of information on language processing strategies, and this can be used in designing structure-based tasks. We will confine ourselves to a brief outline of various factors considered important in comprehension and production and will not attempt to be exhaustive.

An essential premise we make is that humans have limited processing capacities. On the basis of this premise, we assume that language users must continually "cut corners" in an effort to work within their constraints, and this we will call "strategy" use (e.g., Clark & Clark, 1977; van Dijk & Kintsch, 1983). SL learners must work within much more severe constraints than native speakers (NSs) and will tend to use both "internal" strategies (i.e., within the mind of the comprehender or language producer) as well as "interpersonal"

strategies (i.e., in interaction with an interlocutor).

Comprehension Strategies. We will concern ourselves primarily with internal strategies. These strategies are not especially easy to spot since they take place within the mind. Nevertheless, through observation of learners' responses to input, researchers can infer the strategies which underlie them. Internal strategies deal with information from syntax, semantics, pragmatics, morphology, intonation, and the lexicon (Bower & Cirilo, 1985; Just & Carpenter, 1987; van Dijk & Kintsch, 1983). An important point that comes from this research is that moment-to-moment comprehension involves a complex interplay of information derived from these various linguistic and nonlinguistic sources, with differing weights systematically assigned to each. The "Competition Model" specifically deals with these interactions in comprehension, and has recently been applied to SLA (MacWhinney, 1987). Non-linguistic sources such as basic world knowledge ("schemata") will perhaps play a large—perhaps even larger—role (Carrell, 1987; Hudson, 1990).

An important example of competing language systems is seen in the choice among semantic and morphosyntactic cues in assignment of subject, agent, or topic status to NPs—a basic process in comprehension (e.g., Bates & MacWhinney, 1981; Clark & Clark, 1977; Gass, 1986, 1987; Harrington, 1987). Clark and Clark (1977) group semantics and schema together under the umbrella of the "reality principle." A primary strategy under this principle reads as follows:

> Using content words alone, build propositions that make sense and parse the sentence into constituents accordingly. (Clark & Clark, 1977, p. 73)

As an example of this strategy, it has been shown that two and three year old children will interpret the following four sentences identically, thus causing misinterpretation of the last two:

The cat chased the mouse.
The mouse was chased by the cat.
The mouse chased the cat.
The cat was chased by the mouse.
(Strohner & Nelson, 1974, cited in Clark & Clark, 1977, p. 74).

Beginning level adult SL learners also rely heavily upon such strategies to make up for their lack of target language competence in syntax and morphology (Gass, 1986).

Added to the "reality principle" is the fact that syntax, semantics, morphology, and intonation are given different weightings in the languages of the world (Bates & MacWhinney, 1981). "Processing transfer" has been well demonstrated, and it appears that SL learners approximate the TL weighting of these factors only gradually over time (MacWhinney, 1987; Gass, 1987; Harrington, 1987). Thus, designers of structure-based tasks will need to take account of both the "reality principle" and, whenever possible, language-specific processing strategies. By doing this, the task designer can control the degree to which syntactic or morphological information must be heeded to comprehend meaning in the task.

Production Strategies. As in the case of comprehension, in production, too, the learner makes use of both internal and interpersonal strategies. The systems which underlie speech production are rich and complex. Internal processes of lexical and grammatical production somehow access the mental representation of linguistic knowledge. But of special interest for our purposes are those processes which are invoked in case existing linguistic knowledge is somehow lacking. That is, we are concerned specifically with the case of the "gap".

Færch and Kasper (1983) propose (on the basis of their observations) that when there is a gap (a "problem", in their terms), learners can invoke a variety of strategies. Broadly classified, strategies are either reduction strategies or achievement strategies. Reduction strategies include various methods of confining oneself to only a small, usually relatively well-mastered area of the linguistic system. Learners may also attempt to reduce the communicative goal. Fluent native speakers will attempt to achieve communicative success not merely with respect to transfer of information (of "propositional content", in Færch and Kasper's terms), but they will also (at least) attempt to communicate using the appropriate speech acts, and also in the appropriate interpersonal mode (using, for example, the correct level of politeness). In the face of insufficiencies of linguistic knowledge, non-native speakers may well abandon

the niceties of pragmatics or discourse appropriateness, and reduce the goal to "getting the information across". They may even decide to reduce the goal in terms of information content, deciding that it wasn't really so important to communicate that information after all.

Achievement strategies include the many compensatory devices available to speakers with gaps in linguistic knowledge. These include the essentially linguistic devices of paraphrase, word coinage, interlingual transfer, generalization, etc. In addition, the speaker in face-to-face interaction can use gesture, mime, or even written devices like diagrams. Finally, the speaker can use rely on the interpersonal character of the exchange, invoking the cooperative principle, perhaps directly (or indirectly) signalling the interlocutor that help is needed, or using a variety of more subtle devices which take advantage of the shared nature of communication, such as requesting assistance or letting the native speaker finish the utterance. In this way, the members of the interaction work together to solve what is now a shared communicative problem. Cooperative skill can often compensate for linguistic deficiency.

Færch and Kasper point out that reduction strategies cannot possibly lead to hypothesis formation or restructuring. Only an achievement orientation might conceivably result in changes to the learner's linguistic system. (Færch & Kasper, 1983, pp. 54–55)

Grammatical Tasks in Language Testing, Psycholinguistic Research, and Recent Second Language Teaching

Although attempts to integrate structurally-based tasks into a task-based teaching program are not common, tasks have long been used for language testing. Tasks have been used as measures of grammatical comprehension and production for the past three decades. In his book on the testing of comprehension, Kennedy (1978, p. 31) describes "verification tasks involving picture identification or sentence matching" used in primary language acquisition research. The earlier mentioned research on childrens' interpretation of active and passive sentences containing "cat" and "mouse" as agents and patients was done using such tasks. While Kennedy (1978, p. 31) points out that "not all grammatical or semantic relationships can be pictorialized," the fact remains that numerous areas of grammatical comprehension and production can be tapped by just such means.

The use of such tasks in psycholinguistics has, in fact, become increasingly more and more widespread in order to test very specific predictions about the course of acquisition of particular grammatical structures. Quite frequently, the psycholinguist needs to determine whether a given structure has been acquired by subjects. Hence, tasks of considerable subtlety and precision have been designed to zero in on the structure in question. As early as 1969, C. Chomsky devised a method for determining how the understood subjects and objects of infinitive clauses are understood by children (Chomsky, 1969). For example, a child is shown a blindfolded doll and asked whether it is "easy to see". In this way, Chomsky discovers whether the child has learned that in the *easy* construction, the matrix subject is the understood object of the complement of a predicate like *easy*.

Language comprehension tasks can be created which test acquisition of even very abstract features of syntax. The subjacency condition proposed by N. Chomsky, for example, restricts wh-movement from certain abstract structural configurations (Chomsky, 1976). In order to test whether young children conform to these restrictions, Y. Otsu created ingenious picture identification tasks. In one task, the subject is shown a picture of a girl who is making a drawing of a monkey drinking milk. The girl is drawing with a crayon; the monkey is drinking with a straw. The child is asked "What is the girl drawing a monkey that is drinking milk with?" If the child's linguistic system conforms to the subjacency condition, the only possible answer is "a crayon"; without the subjacency condition, both "a crayon" and "a straw" would be possible answers. (Otsu, 1981, pp. 61–66).

Below, and throughout, we will have occasion to adduce additional examples of highly structure-focussed grammatical tasks used in psycholinguistics.

In the last few years, a few works on task-based and communicative approaches to grammar teaching have been published (Madden & Reinhart, 1987; Ur, 1989; for a more theoretical treatment, see also Rutherford, 1987). However, from the point of view of creating structurally focussed information-gap exercises, two key problems have remained in much of this work. Both problems can be stated in terms of providing "comprehensible input" and producing "comprehensible output" (Krashen, 1980; Swain, 1985). First, in contrast to the very precise work in psycholinguistics, such material has been relatively unfocussed with respect to grammar. That is, the connection between

the structure and the task has been rather loose, and close relationships between form and meaning are frequently absent. Thus, it may be possible to a) comprehend native speaker input, or b) make ones interlanguage output comprehensible to a native speaker without c) focusing on or even using the target form of instruction. It is strategic competence which makes this comprehension possible. As a consequence, negative feedback which could potentially destabilize ones TL hypotheses may be either absent or non-salient. The learner may never "notice a gap" , and restructuring may never take place.

Developing Criteria for Successful Grammatical Tasks: Task-essentialness and Feedback

We will argue that structure-based communicative tasks should meet two criteria in responding to these problems:

1. structural accuracy in comprehension and production should be made **essential** to meaning in the task;
2. communicatively oriented **feedback** on structural accuracy should be incorporated into the design of the task.

We will discuss both of these criteria in turn.

Degrees of involvement of grammar and task

Different tasks can put different requirements on particular grammatical knowledge, and it is correspondingly possible to construct tasks which involve grammatical knowledge is various ways, and to varying degrees. We will distinguish here among three degrees of involvement of a grammatical structure in a task.

a. Task-naturalness
b. Task-utility
c. Task-essentialness

In task-naturalness, a grammatical construction may arise naturally during the performance of a particular task, but the task can often be

performed perfectly well, even quite easily without it. In the case of task-utility, it is possible to complete a task without the structure, but with use of the structure the task becomes easier. The most extreme demand a task can place on a structure is essentialness: the task cannot be successfully performed unless the structure is used. Note that in every case, the essentialness, utility, or naturalness of a given grammatical structure is only defined relative to a particular task. There is no such thing as the "task-naturalness" (etc.) of a given structure independent of task definition. In the following sections, each of these types of involvement of grammar with task are discussed in turn.

Grammar that arises naturally: the Task-naturalness of a structure. The characteristics of a task are often such that a particular structure is likely to arise naturally. Perhaps the successful completion of the task does not absolutely require the accurate use of the structure; perhaps the task can even be completed quite efficiently without the structure. Nevertheless, the task lends itself, in some natural way, to the frequent use of the structure. We say in these cases that the structure is "natural" to the particular task. For example, in the task of exchanging information about a travel itinerary with a (real or simulated) travel agent, it seems fairly likely that the simple present will be used. "You leave Honolulu at 7:10 and arrive in Los Angeles at 2:30." Of course, it is not essential to use the simple present. You can succeed at transmitting a travel itinerary by using various forms, including the *will* form, *going to*, and even unadorned verb stems, among others: "Leave Honolulu 7:10; arrive Los Angeles 2:30." In fact, it may be difficult to show, with respect to the narrow criterion of information-exchange, that the simple present is even an especially efficient way to encode the information. The failure to use the structure may not impede the efficient completion of the task. Still, it can probably be demonstrated that the simple present is a particularly natural form to occur in tasks of this sort.

The idea that a given task may naturally involve a particular structure is no news to teachers. Teachers of grammar try to provide learners with "contexts and situations in which the application of grammatical rules in use may be demonstrated" (Rea Dickins & Woods, 1988, p. 639). What we are proposing here is that the concept of task-naturalness can be given a firmer foundation in research and theory and can be integrated into a larger picture. Two areas of scholarship provide useful tools for building this foundation: (1)

research into task-related IL variation, and (2) psycholinguistic studies of the use and acquisition of particular structures. We illustrate the potential of each of these two areas below. For the sake of concreteness and brevity, we present just a single illustration for each.

Task-related variation in interlanguage. In a study of interlanguage variation, Tarone and Parrish investigated the ways article use varied over three experimental conditions: (a) a grammar test, (b) an oral interview about personal academic interests and plans, and (c) a narrative retelling of a wordless story presented on video (Tarone & Parrish, 1988). We are concerned here with the latter two conditions only: the grammar test is irrelevant; it is not a "task" in our terms. Tarone and Parrish distinguished in their work between various uses of the articles. The classes are traditional ones: generic, definite, indefinite, and non-specific.[3] Tarone and Parrish discovered that the interview condition elicited many examples of generic NPs (27% of the NPs were generics) while the narrative condition elicited almost none (less than 1%). Both conditions elicited a fair number of specific indefinites (about 25%–30%). However, definite NPs (excluding generics) were almost twice as common in the narrative condition than in the interview condition (69% vs. 37%). Tarone and Parrish write of "the differing communicative functions which forms may perform in different tasks." (Tarone, et al., 1988, p. 21) (See also (Littlewood, 1981).) In the case at hand, they suggest that the greater use of definites in the narrative is probably a function of its being a more cohesive discourse than the interview.

The results of studies of IL variation such as this have a clear application in the study of task-naturalness of structure. A task designer will want to look at these results. Concretely, in creating tasks for developing knowledge of articles, the task designer will consider using narrative tasks for the definite/indefinite distinction in specific NPs and interview tasks for generic structures.

It is important to note that the program of studying IL variation has not been centrally concerned with task-naturalness of grammar. Rather, the goal of the program seems to be the elucidation of the concept of "variable

[3] We use the traditional terms here: Parrish and Tarone employ a different terminology, originally due to Bickerton, which directly incorporates the insight that these four categories are a joint function of "speaker knowledge" and "specificness of reference" (Bickerton, 1981; Huebner, 1983).

competence", relating it to notions like style or register-shifting. There has been great interest in accuracy of use and the way it can vary under different conditions. While there are many reasons to doubt the theoretical coherence of this research program, we now see practical value in its results. Indeed, we propose that research in interlanguage variation could profitably be refocussed on the concept of task-naturalness of structure. Such a move would both provide a sound rationale for variationist research and produce results of clear applicability to task design.

Psycholinguistic studies. Scholars of language acquisition frequently need to find out whether a given structure has been acquired. Simple corpus collection is often not sufficient, and there are many problems with the use of grammaticality judgements—one other obvious methodology. Therefore, psycholinguists exert great ingenuity in devising experimental tasks which are likely to elicit a particular structure, if it has been acquired. Essentially, the goal is to create a task in which the structure is extremely natural, in our terms.

Consider, example, of the dative alternation: the related structures in *John gave the book to Mary* and *John gave Mary the book*. The former construction is often called the *to*-dative, and the latter the double-object dative. It is difficult to construct tasks—especially production tasks—in which the use of one of the alternatives is either essential or even of greater utility in completing a task; that is, a production task cannot generally distinguish the two structures in either essentialness or utility. The elicitation of the dative alternation is also known to be extremely difficult in psycholinguistic research (Wilson, Pinker, Zaenen, & Lebeaux, 1981).

The double-object datives are of particular interest for theoretical reasons and are also very difficult to elicit. Recently, in an interesting series of recent psycholinguistic studies, Steven Pinker, Jess Gropen, and their colleagues have succeeded in devising experimental procedures for eliciting the double-object dative (Gropen, Pinker, Hollander, Goldberg, & Wilson, 1989; Pinker, 1989a, chapter 2; Pinker, 1989b). Pinker describes one such experiment:

> For the *dative* (Gropen et al., 1989), we invented verbs for physical transfers involving toy instruments, such as sending an animal to a recipient in a toy gondola car or a lazy Susan. Children would hear *The bear is pilking the pig to the giraffe* (or, in some conditions, simply *This is pilking*), while watching a

> bear putting the pig in the gondola car and sending it to a waiting giraffe. Then they would see a tiger "pilking" a horse to a cat and would be asked "What's the tiger doing with the cat?" Since the identity of the goal is already known and the theme is being focused in the question, the natural way to answer is using the double-object form: *Pilking him the horse.* (Pinker, 1989a, p. 27)

(Note that the term "natural" here is used precisely in the sense we are using it.) What is striking about this experiment is that in many cases it successfully elicits the double-object dative even when the child has never heard that verb in the double object form before (Gropen, et al., 1989, p. 238). In achieving this result, the researchers employed many devices: they used the same recipient in all production tasks, they consistently used particular combinations of definite and indefinite articles, they created a certain configuration of known and unknown information (Erteschick-Shir, 1979), and they employed techniques of modelling and priming. (If a particular syntactic construction has been used recently—"primed"—it is more likely to be used again; see Bock, 1986.

Of course, the goal of psycholinguists in creating these experiments is not to aid language development, but to test hypotheses about the learner's internal competence. Nevertheless, the concepts underlying such research and even the particular results are of direct benefit to the task designer who is attempting to create pedagogic tasks which will naturally evoke a structure.

A great advantage of exploiting such existing research in psycholinguists and in interlanguage variation is that the naturalness of particular structures in particular tasks is relatively well-known. Also, the factors which are likely to effect task-naturalness have to some extent already been determined. For example, we know from existing research, that the correct configuration of definite and indefinite articles is important in the task-naturalness of the double-object dative.

Whether a particular grammatical point is in fact natural to a particular task should be considered as a matter of empirically testable fact (and not merely of subjective teacher hunch). For every proposed task, it would be valuable to collect actual examples of native speakers performing such tasks (perhaps through role-playing experiments) and determine what structures in fact arise. For example, we think that the simple present is the natural verb form to use when confirming airline reservations. Is it really? The simplest

objective measure of task-naturalness is how frequently something will arise when native speakers perform a task. With this measure in mind, the task designer can try out several versions of a task, manipulating factors which might be reasonably thought to influence task naturalness, and see how the frequency of the structure varies.

Up to this point, we have conceived of task-naturalness in terms of competent native speakers. It is possible, also, to relativize task-naturalness to the particular stage of learner development. We put the question this way: Assuming a speaker at certain stage of grammatical development, is a particular structure natural for a given task? As is known from research in SLA (for example from the work of M. Pienemann and his associates), structures with certain characteristics can arise naturally only if grammatical development is at a certain stage. It is thus quite possible that the structure which would be natural for native speakers to use in performing a particular task would not be natural for learners performing the same task. (Crudely put, what is natural for native speakers may be "too hard for my first-semester students.") Empirical studies of task-naturalness should therefore ideally be done both with native speakers and with learners.

Suppose it is discovered that in fact there is a discrepancy between task-naturalness for native-speakers and task-naturalness for learners at the targeted stage of development: one structure is natural for native speakers to use in the task, but a different one for learners. The teacher will need to decide whether to (a) postpone the task until the learners are "ready" (or on the point of being ready); or (b) accept the task and use it now for a structure which is acquisitionally possible but which would not necessarily be natural for native speakers. We consider both approaches to be reasonable.[4] (A third possibility—to employ the task and insist that learners use the (for them unnatural) native-speaker structure—is an indefensible choice.)

An important consideration is whether tasks of this sort can cause a grammatical structure to become part of the learner's grammar (through hypothesis formation and restructuring) or whether they simply provide opportunities to use (and perhaps automatize) a structure which has already been internalized. Put slightly differently: Can such tasks teach a new structure? For at least some interesting tasks, it is known that they do not teach.

[4] The second possibility seems broadly in line with the proposal of (Brumfit, 1980) to sequence a syllabus on grammatical points, but to "recycle" functions and notions.

For example, while the procedure used by Gropen et al. can elicit the dative alternation if the subject already knows it, the procedure apparently cannot teach a structure which is not already known. In fact, the experimenters tried to prime subjects to produce an unknown (indeed artificially made-up) construction (*I pilked John of the ball* meaning "I pilked the ball to John"). They failed (Gropen, et al., 1989, p. 235). This failure was good news to the experimenters: it gave them confidence that the experiment was actually eliciting prior linguistic knowledge. For the materials-designer, on the other hand, it should sound a cautionary note. There is no guarantee that a task in which a structure naturally occurs will, by itself, trigger the initial acquisition of that structure, even if the structure is modelled, primed, or otherwise taught in the task.

To be sure, we cannot be certain that initial acquisition is never possible in such tasks. In the example given, it is conceivable that the novel *pilk John of the ball* construction itself runs counter to some general principle of language, and for that reason it was not acquired. (Perhaps it associates grammatical relations with thematic roles in some impossible or marked way—oblique complements marked with *of* are often privative: *I deprived him of his cookie.*) Perhaps a structure which was more in line with language universals could have been acquired. However, at our present state of knowledge, it seems prudent to believe that tasks in which a grammatical point is merely natural will not, by themselves, cause learners to "notice the gap" and thus cause the internal linguistic system to be restructured. This is not to say that task-naturalness is not an important goal. Indeed, we will argue below that it has an important place in second language learning, particularly in automatization; but in order to achieve effective restructuring, it is probably necessary to invoke more direct links between task requirements and grammatical structure. With task-utility and task-essentialness, more direct links can be made.

Useful grammar: the task-utility of a structure. Because of the redundancy of language and the richness of the context which often accompanies linguistic tasks, mastery of a grammatical structure is frequently not absolutely essential for the successful performance of a task. Nevertheless, it can be very useful.

It is well-known that a wide variety of practical tasks can be completed

with only rudimentary linguistic knowledge. For example, "spot the difference" tasks are often intended to focus attention on locative structures. In an experimental beginning Hawaiian language class (Bley-Vroman, 1989), we discovered that it was possible for many students to complete one such task (borrowed from (Madden, et al., 1987, lesson 10) with only a single preposition (Hawaiian *ma* – roughly "at"); indeed, we conjecture that it could have completed without any prepositions at all. Despite the fact that it may have been possible to complete the exercise without using the full range of locatives, it was very awkward and time-consuming to do so. Had students been able to make use of concepts like "on top of", "underneath", etc., the task probably could have been completed more quickly, and with a greater likelihood of success. Indeed, during the lesson, students called the teacher over to ask how to say "on top of", etc. Clearly, the students themselves realized what it would be helpful to know.[5] In this case, the focussed structure, while not essential to the task would have been useful to the task.

The challenge for the exercise creator then, is to create tasks in which the utility of the targeted structure is so clear that learners naturally attend to that structure because the task can be completed more efficiently and with greater likelihood of success if the structure is used correctly.

The assertion that a particular structure is in fact useful for a particular task is, of course, an empirical claim. And like all classroom proposals, it must be accountable to empirical testing. The most straightforward way to investigate the task-utility of a given structure is to compare performance of the task with and without use of the structure. This can be done with learners: for example, one group is given instruction in the structure (and they are demonstrated to have some level of mastery); while another group is not. Both groups do the task. Performance of the two groups is compared, using some

[5] Virginia Samuda, in unpublished work and in workshops, has made a similar point. She advocates creating a "need to mean" in students by setting up a task in which particular structure would be clearly useful. In one version of Samuda's scheme, the task (and the associated "need to mean") is presented in advance of the targeted structure. That is, the students are given a task which they are in fact not yet well-equipped to handle. If all goes well, students may see that they could use something which they do not yet have (as the Hawaiian language students realized that locative prepositions would be useful). The teacher then intervenes (perhaps after the students flounder a bit) to present the useful structure. Presumably, the students then both attend to the relevant structure and to its meaningful association with the communicative task. See also Samuda & Madden (1985) and Samuda & Rounds (1988) for related discussion.

measure of task success, such as accuracy of task outcome or speed of task completion. Multiple measures would be valuable, and could lead to modifications of the task to increase utility. For example, suppose it is discovered that learners who know locative prepositions aren't much more accurate in spotting differences in a spot-the-difference task than those who don't, but that they complete the task much faster. The teacher might then decide to add a time constraint to the task in order to enhance the task-utility of the structure.[6]

The utility (or essentialness) of a structure to completing a task is relative to the learners' level of existing competence, i.e. to what other resources learners have at their disposal. Suppose we want to create a task in which the double-object dative (*John gave Mary a book*) is useful. Perhaps we have students instructing other students to give them things, or to take things from one student and give them to the teacher. If, however, the students already have good mastery of the *to*-dative (*John gave a book to Mary*), then the double-object dative may be less useful: it may even seem superfluous.[7] (More generally, the task-utility of a structure probably falls if the targeted structure can be viewed as an alternative to an already mastered structure.[8] Therefore, we suggest that task-utility, like task-naturalness, be defined relative to (a) a particular structure, (b) a particular task, and (c) a particular state of previous learner knowledge.

Essential Grammatical Knowledge

So far, we have concentrated on tasks in which a particular grammatical point is natural or useful to a task. However, in some tasks, if they are constructed carefully, it is essential to attend to the relevant structure in order

[6] Rough and ready measurements of task-utility can also in principle be done with native speakers. One group of native speakers is required to complete the task without using the structure; the other uses the structure. This method may have certain practical advantages. However, it fails to take into account the relationship of task-utility to existing learner competence.

[7] We reject the technique, sometimes used by teachers, of forcing students to use a particular structure ("And remember: try to practice the double-object dative."). In such cases the utility of the structure arises not from task requirements but from teacher requirements.

[8] This observation dovetails nicely with the proposal (made by J. Richards on independent grounds) that new forms should be taught for new functions, rather than new forms for old functions (Richards, 1979).

to perform the task successfully; it is impossible to succeed unless the grammatical knowledge is attended to. We will call this type of grammatical involvement "essentialness". The term is intended to suggest not only that the task cannot be completed without the grammatical point, but also that the grammatical point itself is the "essence" of what is to be attended to. In the examples we shall give in this section and below, other aspects of language knowledge are controlled: either they do not provide essential information or they are assumed to be so well-mastered that they can be performed without attention. The cases described above of the *easy* construction and of the subjacency condition illustrate task-essentialness. Below, as an additional illustration, we shall describe a task involving locative expressions which cannot be completed without the correct parsing of the preposition+NP structure. It is also true, to be sure, that the task cannot be performed if the relevant vocabulary (*table*, *block*, etc.) is not mastered; but the vocabulary restricted to that which the learner can safely be presumed to have mastered. Therefore, from the point of view of our learner's allocation of attention, the locative structure is the essence of the task.

Work on the second language acquisition of reflexive finding provides another illustration of a task in which a grammatical point is "of the essence". Shimura (1990) reports on a task, based on the methodology of Finer & Broselow (1986) and Shimura & Yoshino (1988), in which subjects are asked to identify the reference of reflexive pronouns. They are shown pictures containing two men—one is "Mr. Fat", the other "Mr. Thin"—who are interacting in some way. (See Appendix A for a sample page of such an instrument, from Shimura & Yoshino, 1988.) For example, Mr. Fat is slathering paint on himself in some pictures, or on Mr. Thin in other pictures. The subject is presented with a sentence, such as *Mr Fat believes Mr. Thin will paint himself* (with a reflexive pronoun). The subject must determine whether a given picture goes with a given sentence. For a given item, in the pictures from which the subject must choose, the action (painting in this example) is always constant, as are the characters. Attention is focussed only on who is doing the action to whom: in effect, whether the reflexive refers to Mr. Fat or Mr. Thin. Among the items, sentence structures are systematically varied: sometimes the antecedent is the main clause subject, sometimes the object. Sometimes an embedded infinitive clause is used, sometimes a finite clause. Precisely those factors are varied which are relevant to determining the reference of pronouns:

these factors are thus the essence of the task, and the task cannot be performed without employing the relevant principles.

No doubt, tasks in which a structure is essential are sometimes difficult to create; certainly, they will always be harder to create than tasks in which the structure is merely natural or useful. Because essentialness is a much more stringent requirement than naturalness or utility, to achieve it requires correspondingly more control over the discourse. Thus, task-utility or task-naturalness is more likely to be the goal in production tasks, while in comprehension tasks, task-essentialness can more easily be achieved.

Task Control

In order to make structural accuracy essential to accurate communication of meaning, the designer of the task must exert a great deal of **control** over the discourse in the task.[9] The result, if the designer is successful in exerting such control, will be what we earlier referred to as a "closed task" (Long, 1989). That is, the task will require:

> that the speakers (or listeners, readers and writers, of course) attempt to reach a **single correct solution** ... determined beforehand by the designer of the task and again (crucially) known to the participants to have been so determined. (p. 18) [emphasis added]

In this case, reaching the single correct solution will require structural accuracy.

The degree of control available to the designer in making grammar essential to meaning will be determined, in part, by the type of task to be created; i.e., whether it is a production or a comprehension task. In the following two sections we will look at the degree of discourse control possible for the task designer and the learner in both production and comprehension

[9] Lantolf & Ahmed (1989) argue that asymmetrical control over discourse inhibits intersubjectivity (i.e., the transcendence of one's personal world through linguistic means). They illustrate this by showing how an interview (asymmetrical control favoring the native speaker interviewer) led to shorter but more grammatical utterances by the non-native speaker than a free discussion (symmetrical control between the native and non-native speakers). The free discussion, they argue, led to greater intersubjectivity between speakers, though much less grammatical speech by the non-native.

tasks. From this, we will suggest types of grammatical tasks that are possible for each. Examples will be provided, and potential strengths and weaknesses will be outlined.

Production Tasks

The goal in a grammar-based production task is to focus the learner's processing capacities on the meaningful function of a specific structure. Thus, the problem for the designer is to manipulate the task so that the comprehensibility of the learner's output to an interlocutor depends on structural accuracy. However, it is evident that the task designer can exercise only limited control in trying to achieving this goal. Following Nunan's (1989) analysis of tasks, we see that the task designer potentially has control over the goals and the activities of the task as well as the context of the input. However, the learner controls the input to his/her interlocutor via his/her own output. Since the learner's output cannot be controlled by the task designer, its comprehensibility cannot, in any reliable way, be made to rest on its accuracy with respect to a particular grammatical structure. The natural use of production strategies by the learner and comprehension strategies by the interlocutor can short-circuit the task designer's best laid plans. It will often be possible to communicate quite successfully without structurally accurate production. Therefore, while a production task can be designed such that a given structure is perhaps quite natural or useful, in general, it will be difficult to make that structure essential to communicative success.

This point is clearly evident in the psycholinguistic research literature. The mechanisms of language production are much more difficult to study in a laboratory setting than those of comprehension. As Matthei and Roeper put it:

> [I]t is hard to see how we can manipulate the input to the speech production mechanisms. The input to the speech production mechanisms is a message, and how can we choose what messages our subjects in the laboratory will choose to express? This problem is not insurmountable. We can, for example, ask our subjects to describe pictures or the actions depicted in little movies and thus gain some control over what our subjects will talk about. But we cannot manipulate other critical variables, like what syntactic form our subjects' sentences will take and what words they will choose to put in their sentences. (Matthei & Roeper, 1983, pp. 162–163)

Given these above limitations and our earlier reservations about the ability of tasks to facilitate restructuring of merely "natural" structures, we would argue that communicative structure-based production tasks will be most valuable as "practice" activities to develop automatization of a specified structure. Conversely, production tasks should be relatively less valuable as chances for learners to notice gaps in their IL hypotheses about the specified structure.[10] For this reason, we should expect that the automatization which takes place will be within the boundaries of the learner's already existing IL hypotheses.

Comprehension Tasks

As with production tasks, the goal of a grammar-based comprehension task is to focus the learner's processing capacities on the meaningful function of a particular structure. Yet, as we stated earlier, syntax and morphology are only two of many resources in language processing. Thus, the problem for the task designer is to manipulate the task such that the impact of other language resources is lessened when processing the input. In attempting to do so, the task designer is afforded considerably more control in a comprehension task than in a production task. Not only does the designer control the goals and activities of the task, but also the input and the context within which it is to be processed by the learner. That is, while there may be various structures available for a learner to communicate a piece of information, in comprehension tasks, a specific form can be targeted and used in the input. Assuming a cooperative learner, he/she is only left in control of his language processing and subsequent response. Because of the designer's greater degree of control over the input, context, goals and activities of the task, structural accuracy on the part of the learner can much more easily be made essential to communicative success in a comprehension task.

Because the designer can build in tight relations between form and meaning in a structure-based comprehension task, such activities should be much more conducive to learners' IL hypothesis testing. However, as we will

[10] Our claims here are limited to the value of communicative production tasks focused on a specific structure. Hypothesis testing based on feedback regarding the comprehensibility of the learner's output almost certainly does happen (e.g., Pica, Holliday, Lewis & Morganthaler, 1989). However, designing the necessity for such feedback on a specified structure into a task will generally be quite difficult.

shortly argue, this will depend critically upon the provision of some sort of feedback against which the learners can compare their current hypotheses.

Summary

We have four sets of interrelated distinctions: (1) We distinguish hypothesis formation/restructuring from automatization; (2) We discuss three kinds of involvement of structure in task: **essentialness, utility,** and **naturalness**; (3) We distinguish tasks which are focussed primarily on **comprehension** of the targeted structure from those focussed on **production**; (4) We note that tasks differ in the degree of **control** exercised by the task designer. The relationships between these four dimensions are complex. However, in general, the rough relationships diagrammed in Figure 1 will hold.

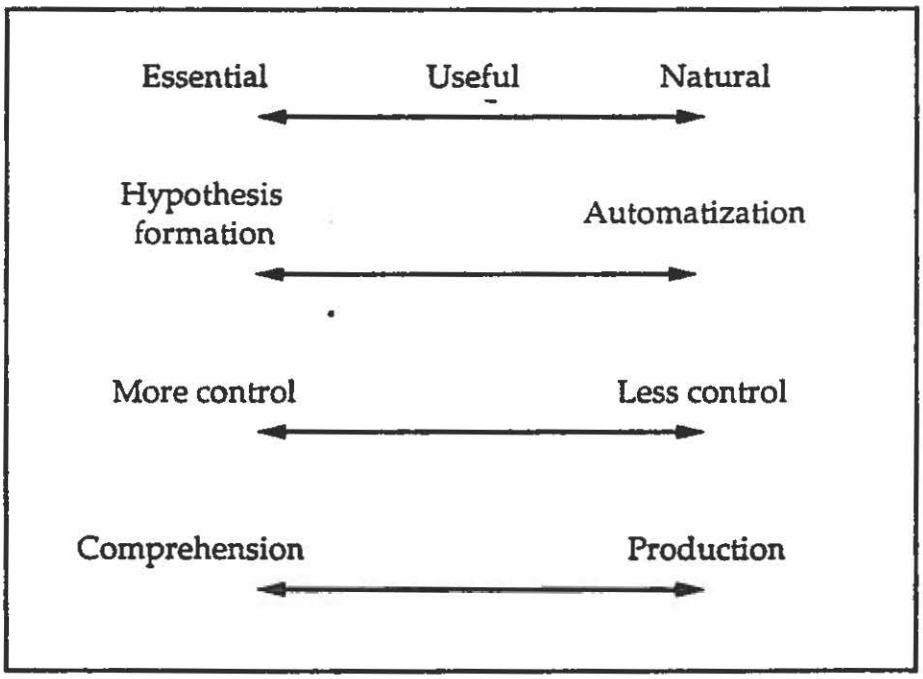

Figure 1: Relationships among the four basic dimensions

Task-essentialness causes attention to be paid to the relevant structure, and this attention facilitates initial hypothesis formation or restructuring. Achieving task-essentialness generally requires a high degree of control by the

task designer. This control is usually easier to achieve in comprehension tasks than in production tasks. Hence, comprehension tasks are particularly well-suited to hypothesis formation and to restructuring.

If, on the other hand, the learner's competence already includes a structure, but the learner needs practice in order to fully automatize it, then it is important to construct tasks in which the structure will occur abundantly and naturally. Since task-naturalness does not necessarily require the degree of designer control which task-essentialness does, production tasks may thus be suitable. Hence, one is more likely to use production tasks in order to automatize structures which have already been correctly hypothesized in comprehension tasks. In this way, an analysis of the nature of tasks, grammar, and learning provides indirect support for the notion that comprehension should precede production. Task utility fills an intermediate position. For example, if the task-utility of a structure is high enough in a production task, then a production task may also have value in initial hypothesis formation and testing.

The diagram is only approximate, representing *ceteris paribus* generalizations—generalizations which hold only assuming that "all else is equal". Certainly, there are production tasks which incorporate a great deal of control; there are no doubt many comprehension tasks which are of no use in hypothesis formation; it is conceivable that under certain conditions weak task utility may cause restructuring; and so on.

All of these have been related to our first criterion for successful structure-based tasks: that grammar be essential to meaning. We now move on to our second criterion: the provision of feedback.

Provision of Feedback

Feedback, as we stated earlier, is probably the key difference between the testing and the learning uses of tasks. A learner may generate many IL hypotheses while performing a task in which structure and meaning are tightly connected, but, without some sort of feedback, the learner will have no way of confirming or disconfirming them. Schachter (1984) cites cognitive psychological research showing that such nonoutcome problems result in unchanged learner hypotheses. For example, in the course of doing Shimura's above-cited (1990) reflexive pronoun reference task, one of us (Loschky, as a

Japanese as a second language subject) can testify to having formed numerous half-baked hypotheses. However, none of these hypotheses was able to be tested, due to the necessary lack of feedback provided in the task as a test. Not surprisingly, so far as we are aware, no learning took place, though the potential for it was probably great.

Arguments for the value of feedback in second language learning have been made by various authors (e.g., Bley-Vroman, 1986; Chaudron, 1988; Pica, Holliday, Lewis, and Morgenthaler, 1989; Schachter, 1984; Tomasello & Herron, 1988, 1989). There is also a long history of research in cognitive psychology linking feedback to hypothesis-formation and concept learning (for review, see Anderson, 1985; Estes, 1989). Estes briefly describes this process:

> For inexperienced learners, the process is essentially the same as discrimination learning. Initially, the learner samples more or less randomly the features or aspects of exemplars of the categories belonging to a concept and associates these with category labels. Then, *as a consequence of feedback from correct or incorrect categorizations*, or the equivalent information from other instruction, the learner comes to attend selectively to the features or combination of features that are actually related to category labels by the rule defining a concept. (1989, p. 36) [emphasis added]

In its simplest form, training can consist only of learners categorizing tokens to various categories with feedback given as to their correctness at the end of each turn. Sokolik and Smith's (1989) pilot study is an example of just such a form of "feedback training" (within a Parallel Distributed Processing connectionist framework) to learn a TL grammatical subsystem, French noun gender. In it, beginning learners trained only with minimal feedback outperformed more advanced learners without such training. (The authors caution that the results of this study are in need of more careful replication.)

Perhaps the clearest evidence of the value of feedback on learners' hypothesis testing and SLA is provided by a pair of classroom experiments by Tomasello and Herron (1988, 1989). The authors argue that "students learn best when they produce a hypothesis and receive immediate feedback because this creates maximal conditions under which they may cognitively compare their own system to that of mature speakers" (1989, p. 392). In their studies, the authors selected well attested errors in French as a foreign language due to overgeneralization and first language transfer. The teacher/experimenter then

led the learners "down the garden path" by priming them to commit such errors, and then immediately correcting them. Learners given the chance to generate hypotheses, commit the predicted errors, and receive feedback consistently learned more than those who were instead merely warned by the teacher about rule exceptions.

The feedback cited above was given in the form of explicit corrections by a teacher in traditional classroom exercises accompanied by short explanations. However, feedback need not be limited to such situations. Kennedy (1978) in a discussion of the use of tasks for testing grammatical comprehension arrives at an important point for pedagogy:

> Feedback in the task situation can also affect comprehension. Whereas studies by E. Clark (1971) and others have shown that temporal clauses are often difficult for children to comprehend, Amidon and Carey (1972) found that kindergarten children who received feedback as to the correctness of their responses greatly reduced their errors in a game involving comprehension of subordinate clauses containing *before* and *after*. (p. 27)

In another set of tasks focusing on comprehension of locative sentences, a student's comments seem to shed light on the relationship between feedback, hypothesis formation, and, perhaps, restructuring (Loschky, 1989). In the task, accurate interpretation of the target structure was essential to meaning and feedback was provided. The target structures of the task were two Japanese locatives: Subject-initial, and Locative-initial. In the task, the learner had to determine which noun referent was the Subject of the sentence and which was the Object (indicating the location). The student commented that, for some reason, she kept getting the choices in the listening task wrong. Based upon this feedback she ventured the hypothesis that the genitive *no* particle had something to do with her problem. In fact, this particle is the link between a preceding NP and its following postpositional phrase in Japanese. Learners' misassignment of subject and object status in locatives may be due to misassignment of the direction of Japanese NP modification in postpositional locatives. Thus, this learner's attention to the connecting role of the genitive particle *no* could be a key to correct interpretation of locative sentence structure.

With regard to the issue of how to provide feedback, we argue that

negotiated interaction in a closed task should generally be sufficient. Schachter (1984) notes that signals from an interlocutor that one's output is incomprehensible serve as valuable negative input (e.g., Pica, et al, 1989). Similarly, in a information-gap comprehension task, simple feedback from one's partner that one has not, say, made the intended choice, can serve as valuable negative feedback in a communicative context.

In order to arrive at such information, and test out varying hypotheses, learners will often make use of their strategic competence, using contextual clues embedded in a task. As an illustration of this, we provide an example from a locative structure task of the type mentioned above. Recall that the learners had to distinguish between the Subject and Object of the sentences they heard. During negotiation, learners were able to determine, using contextual clues embedded in the task, whether they had chosen the correct noun referent as Subject or not. The example transcript given is of a native speaker (NS)/non-native speaker (NNS) dyad doing a "still life" task in Japanese and has been translated into English (Loschky, 1989, p. 160). (See Appendix B for the actual task materials.) Turns are numbered for reference. "T" is the teacher; "S" the student.

1. T: The timetable is – under the map
2. S: Uh – one more time
3. T: The timetable is – under – the map
4. S: Time – xx Uh – one more time
5. T: One more time?
   The timetable is – under – the map
6. S: Is under Ah ha ha ha [S circles small map.]
7. T: Do you understand "timetable"?
8. S: No
9. T: A timetable – for example – a bus timetable or, train timetable tells – what time the bus comes That kind of thing
10. S: OK, so – Once more
11. T: The timetable – is – under – the map
12. S: Under [S erases circle around small map, and circles small timetable.]
    Hmm Timet- is um – left – on the left?
    Ah- oh timetable is – um left to – pen?

13. T: No
14. S: No
15. T: Umm Of the pen – ummm – – No um
    There's a big ruler right? Big-
16. S: Big Yes yes yes
17. T: Left of the big ruler
18. S: OK Thanks That's fine. [S erases circle around small timetable, and circles (correct) big timetable.]

In looking at this transcript it is evident that the learner has difficulty in determining which set of (timetable + map) is being referred to. In fact, in turn 6, the learner originally (inaccurately) interprets *map* as the Subject of the sentence. It is only a) after she has been questioned (a form of feedback) about her understanding of the lexical item *timetable.*(the Subject), and b) after she has had its meaning thoroughly explained to her, that her attention shifts, in turn 12, to the correct NP, i.e., *timetable.* At this point, however, her interpretation of *under* must now be called into question. (It may have been that her attention was simply too localized within the picture.) However, it is also at this point (turn 12) that the learner attempts to confirm her interpretation of the sentence through use of a "landmark" in the picture, the pen (presumably the small pen, closest to the small timetable). In turn 13 this interpretation is disconfirmed through explicit feedback from the NS, though of course in a meaning-focussed way. Then, in turns 15–17, the NS uses another landmark, the big ruler (as opposed to the small one), to focus the learner's attention on the correct timetable. In turn 18, the learner uses this information to arrive at the correct interpretation of the sentence.

It should be noted, however, that by turn 18 the learner may have already lost the original form of the sentence from short term memory. It is probably only through repeated exposures to the target structure along with repeated testing of the learner's IL hypotheses that she will be able to both restructure and automatize more target-like rules. In fact, this and other learners showed clear evidence of such development in their acquisition of locative sentence interpretation following use of this and a related set of tasks (Loschky, 1989).

Unfortunately, feedback is not always so successful in helping learners to locate the sources of their problems. For example, severe problems were observed in a "describe and arrange" task using lego blocks (e.g., Ur, 1988, p.

232; see Appendix C for the complete task). In this case, one student's description of a lego block construction was completely miscomprehended by her partner. Both the speaker and listener knew that communication had broken down, as was shown by the amount of negotiated interaction they engaged in. Also, at the end of the task, the listener did have the opportunity of comparing her model with speaker's intended target. Nevertheless, the listener was never able to locate the source of her miscomprehension: subsequent analysis by the researcher showed this to be a reversal of subject/object status in locative sentences. Both the listener and the speaker appear to have found the task to be at the best a frustrating experience. Furthermore, it is doubtful that the learner's IL underwent any restructuring as a result of doing the task. In other words, although the lego task met both the criteria of a) essentialness of the (locative) structure to meaning, and b) provision of feedback, it seemed that the learner was not able to notice the "gap" in her IL rule system.

We speculate that the listener's problem was analogous to that experienced by a computer programmer attempting to debug a complex program relying only on the information that the program did not work. In such cases, there are too many possible candidates for bugs: too many things might have gone wrong. Practical debugging requires that the programmer be able to find out at every stage of its operation precisely how the program is operating. Ideally, the programmer must be able to probe the functioning of the program interactively, stopping it at various places, making modifications and observing effects. Had the listener been able to do likewise—to check her comprehension after each instruction, to try out alternative ways of interpreting the input, and to see the results—she would have stood a much better chance of locating the source of her problem.

Good programming systems not only allow interactive debugging, but they also supply a range of tools to facilitate debugging; for example they will provide a simple means of checking the value of any variable at any point. We might hypothesize that the lego task was deficient in the amount of contextual information available for precise feedback to be given. The "debugging tools" associated with the task were deficient. In particular, in contrast to the previously mentioned "still life" task, there were no distinct landmarks (such as the pen or the ruler) which the listener could use to gauge the accuracy of her interpretations of sentences against those intended by the speaker.

In summary then, we feel there is a growing (though still small) body of empirical evidence for the theoretical claims that feedback is important in SL hypothesis testing and restructuring. In cognitive psychology, of course, the role of feedback in category learning has a much longer history. Furthermore, we agree with the approach of Tomasello and Herron, and Amidon and Carey in their selection of grammatical targets for learning. That is, **known** areas of learner error/processing difficulty should be the primary targets. We agree with Schachter in arguing that there is abundant negative feedback available in negotiated interaction so that explicit teacher **correction** (e.g., "No that's wrong. We don't say that.") is often unnecessary. This should be particularly so if the task is "closed." In general, it is important to create chances for learners to make errors (based on their IL hypotheses) and to receive feedback on them. However, efficient use of feedback depends upon having sufficient means to locate the source of ones error.

Issues Related to Practice

Thus far we have dealt with the theoretical underpinnings of our approach and the sets of distinctions relevant to classifying and analyzing structure-based communication tasks. We now comment upon issues relevant to putting these concepts to work in the SL classroom. In doing so, we will be making rather tentative statements. This makes sense, since the approach to grammar pedagogy and task design we are arguing for has as yet only been tentatively implemented. Nevertheless, the following suggestions should be of use to language teachers/task designers interested in putting this approach into practice.

The practical issues we will discuss in relation to communicative structure-based tasks can be thought of as answers to a set of reasonable, common-sense questions:

1. Is a detailed knowledge of psycholinguistic and SLA research necessary for the teacher interested in creating such tasks?
2. How do you actually go about creating a structure-based comprehension task, and can it really be communicative?

3. Isn't this approach a move against the development of learners' strategic competence?
4. How do such tasks fit in with overall syllabus design?

In answering the above questions, we hope to show that our approach to task design and grammar pedagogy, while not currently widespread, has very real potential for the field of SL teaching.

The teacher and the psycholinguist

Throughout this paper we have argued that grammatical tasks be based upon psycholinguistic principles of processing. We have shown that a wide range of grammatical tasks already exists in the psycholinguistic research literature. We contend that by keeping the two acquisitional processes of automatization and restructuring in mind, one can easily modify the above mentioned elicitation tasks to suit one's pedagogical purposes. However, we are by no means implying that SL teachers must be experts in the area of psycholinguistic research in order to create well designed grammatical tasks. Indeed, a teacher who is sensitive to what goes on in the classroom will be in the best position to design tasks to meet the needs of his/her individual students.

The obvious question, then, is how does the teacher go about developing structure-based communication tasks for the classroom? The key, we believe, lies in paying careful attention to learners' input and output comprehensibility and inferring the logically prior mechanisms of language processing. Learners' communicative success, or the lack thereof, can be defined in terms of either input comprehension or output comprehensibility. To the degree that comprehensibility depends on structural accuracy, grammar and communication are linked. We know that grammar plays an important (though not solitary) role in both input and output processing, as evidenced in the psycholinguistic literature. Thus, within our approach, a teacher may start with the issue of comprehensibility and work backwards through inferred mechanisms in processing and arrive at grammar. This chain of reasoning should be reflected in one's structure-based tasks.

By focusing on comprehensibility and processing we feel the teacher can improve the structure-based communicative tasks he/she already uses and/or

create original ones. Sometimes, the teacher may be lulled into believing that a communicative structure-related task was successful because the students were all actively talking. However, a closer look may reveal the fact that the students made little or no use of the structure in question, but nevertheless succeeded in communicating. A clear instance of this was our earlier noted example in a "spot the difference" task.

Analysis of processing problems can often lead to the development of more focussed tasks. For instance, the problems observed in the "describe and arrange" task mentioned earlier led to the development of a series of new tasks. By carefully analyzing a transcript of the task-based interaction and a record of the lego model produced by the student, it appeared that inaccurate processing of a particular grammatical structure (i.e., a reversible locative sentence) had rendered input to the student quite incomprehensible. Thus, when she heard the Japanese equivalent of "A small blue lego is on top of the big red lego," the student placed the big red lego on top of the small blue lego. These observations allowed a processing problem to be identified; and this identification formed the basis for the set of structure-based communication tasks focussing on locative sentence structure mentioned earlier.

It should also be noted that the degree of exactitude in identifying a processing problem differs substantially for the pedagogical task designer and the psycholinguist. In identifying a processing problem we would claim that there are at least two stages: the first stage is identifying the problematic contrast. For example, assignment of agent and patient status in passives, or the assignment of figure and ground status in locatives. The second stage is to identify the hypothesized cause of the problem. For instance the problem may alternatively be argued to stem from first language transfer, universal operating principles, etc. In identifying the cause, it could be very easy for either the teacher or researcher to be wrong. In pedagogical terms, however, this should not be a critical matter. So long as the problematic contrast is identified, the learner can be led to test whatever hypotheses underlie that error. Using feedback, the learner can revise these hypotheses so that the end product is more in line with the TL. The revised IL rules will not always match the TL rules. However, such rules should be capable of resulting in greater input and output comprehensibility at least within the boundaries of the task. Certainly, this should be an improvement over those less effective hypotheses held by the learner before.

In sum, then, we believe that sensitivity to learners' input and output comprehensibility is more important than a detailed knowledge of the psycholinguistic literature. Such knowledge, however, should be extremely valuable in creating structure-based communication tasks. Thus, we encourage both practicing teachers and applied psycholinguists to become involved in designing structure-based communication tasks.

A Schema for Structure-based Comprehension Tasks

As an example of how to put what we have been arguing for into practice, we include this schema for creating and using structure-based comprehension tasks. We use the example of a comprehension task (rather than a production task) because it comes closest to meeting our criteria for a successful structure-based communication task. That is, a task in which structural accuracy is essential to meaning, and communicatively oriented feedback on accuracy is incorporated into the design. Furthermore, in such a task there should be the means to facilitate the learner's ability to locate a potential (predicted) error source. The schema in its simplest form is shown below. A detailed description of each element follows.

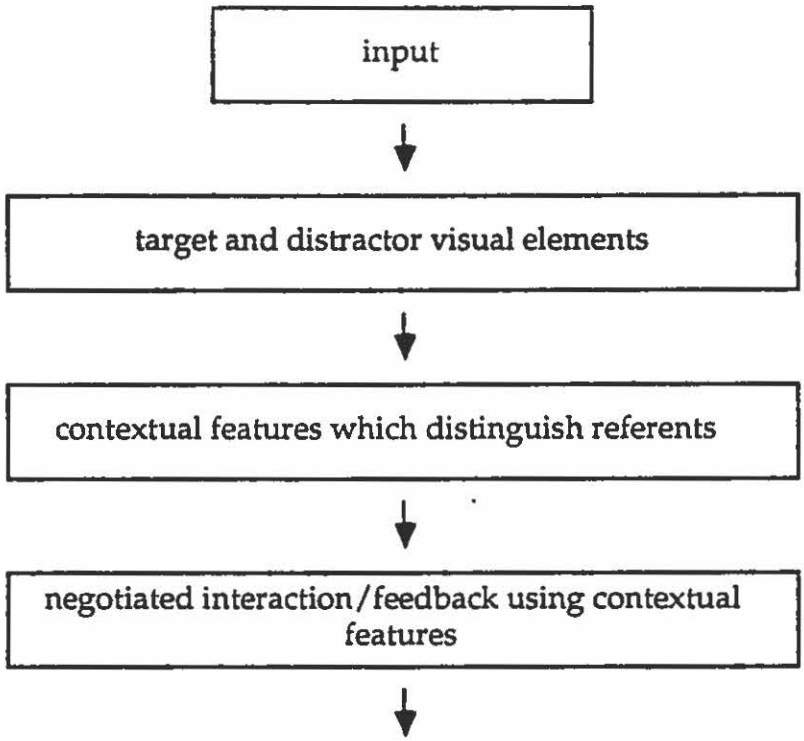

Figure 2: Schema for structure-based comprehension tasks

To begin with, there must be **input**, determined in advance (e.g., scripted), which contains the target structure(s). In a very controlled sentence-level structure task, this may involve units of only one sentence or utterance in length. In a task aimed at discourse-level features (e.g., indefinite versus definite noun phrases, as in Chaudron & Parker, 1990), longer texts may be preferable or necessary. This predetermined input constitutes the starting point for the learners and can be expanded upon as they feel necessary (e.g., in negotiated interaction, described below). The learners can receive the input either aurally or in a written text, though our examples all deal with spoken input. Furthermore, this input can come from various sources. For example, input may come from (in order of communicative potential): another learner[11] or a tutor in a pairwork activity; the teacher in a whole class activity; a

[11] It may be that, in certain cases, the input cannot be given by another learner. Either because the learner does no have the prerequisite literacy skills, or because the structure is too advanced to decode and encode infact (e.g., see Chaudron & Russell, 1990).

recording in the language lab (the last having the least, if any, communicative potential).

In order to contextualize the input, we suggest using a visual **frame of reference** (i.e., pictures or objects). The visual items provide the "content" which forms the basis of communication in the task (e.g., see the tasks discussed earlier. This approach derives the methodology used both in numerous psycholinguistic research tasks, and in many information gap tasks in SL pedagogy and research. Importantly, there should always be both the target option and distractor option(s) which match the the predicted learner processing error(s) (e.g., Tomasello & Herron's "garden path"). These options should visually represent the outcomes of both the TL and IL processing strategies in a concrete way for the learner.[12]

During and after receipt of the input, the learner can visually scan the pictures, or objects, and attempt to identify the referents in question. Within this visual environment, there should be **contextual features** which the learner can use to distinguish between referents in the task. It is possible, and we think preferable, to carefully control these so that they are useful only if the learner negotiates for meaning. Indeed, this is a key point at which our procedures differ from those in most of the psycholinguistic (testing) tasks mentioned so far. Instead, it derives from general practice in creating information gap tasks. It is important however, that the contextual cues should not be sufficient by themselves to immediately solve the processing problem for the learner by simply the learner's invoking the "reality principle". If context clues are too rich, the learner will not be forced to rely on the target structure for meaning. In contrast, the contextual elements we are suggesting should be useful to the learner as "landmarks" of the type we mentioned earlier (eg. the pens and the rulers of different sizes).

Having selected one of the picture or object options, the learners will very likely want to clarify or confirm understanding, as shown in the prior example transcript above. In such a case, they can use these contextual features to negotiate for meaning with a partner, the teacher, or to some degree, even with a computer in an interactive program (e.g., Doughty, 1990). Nevertheless, we

[12] Again, we note that it is much easier to make a distractor which matches the outcome of a processing error, especially if it is a well attested one, than to determine the exact nature of the processing which led to that error. As we said earlier, we feel that the latter degree of psycholinguistic exactitude is not required to create such tasks.

suggest that among the above options, pairwork, preferably with peers, be used. Assuming that information exchange is required for task success, this will lead to greater learner interaction (Doughty & Pica, 1986). While this may not lead to more learning of the structure, it should increase learner comprehension (Doughty, 1990; Loschky, 1989). Just as importantly, by allowing for interaction, the task becomes communicative rather than simply meaningful, thus making the task more intrinsically motivating for the learner. Nevertheless, either through interaction, or less communicatively at the end of the task, the learner must be allowed to get feedback as to the accuracy of his choice.

After progressing through the above steps, the learner may have had the opportunity to begin restructuring IL hypotheses. On the other hand, after only one trial the learner may, instead, only have come to realize that something is wrong, but not yet have discovered the source of the error. Thus, we suggest that the learner be given several tries at "cracking the code" through doing similar tasks targeted at the same structure. Through this process, the learner may be able to move from initially noticing that there is a problem, to locating the source of the error, to restructuring the IL hypotheses regarding the structure, to automatization of the revised IL hypotheses.

Once the learner has been able to achieve reasonable success in comprehending input containing the target structure, similar tasks in which the structure must be accurately produced to convey meaning can be introduced. This will probably be more conducive to automatization of the revised hypotheses than to further noticing of gaps, though to a lesser extent, the latter may still continue. Such tasks can be quite similar in design to what we described above. The key difference will be that the input (in this case from the learner to his interlocutor) will not be predetermined.

Strategic competence and structure-based tasks

We have emphasized that the potential richness of the language production system, particularly the availability of a variety of strategies to compensate for linguistic deficiencies, makes it very difficult for the task-designer to create communicative tasks in which the existence of a particular gap in linguistic knowledge becomes evident to the learner. In saying this, we do not wish to been seen as disparaging "communicative competence". Clearly, the strategies which allow the learner to produce comprehensible

language even in the presence of very deficient linguistic systems are a great practical advantage to the learner. We do not wish to discourage their use. Our point is simply that the existence of such strategies must be carefully taken into account by the task designer if the intent is to focus the learner's acquisition system on a particular aspect of structure of the target language. Indeed, we have shown above how learners' use of contextual clues to establish referents in a task can be a source of valuable feedback. Thus, by acknowledging and controlling for strategy use, the designer can make learner strategies work towards the pedagogical purposes of the task, rather than against them.

Task-based grammar and structural syllabus design

Throughout our entire argument we have scrupulously avoided the thorny issues related to syllabus design. By arguing for the teaching of grammar through a task-based methodology, we are in no way implying that we favor a return to the traditional grammatical syllabus. Indeed, rather than argue for a particular syllabus type (e.g., structural, notional/functional, or generally "communicative"), we suggest that such tasks be used in any situation wherein the goals of instruction are compatible with the idea that structure and meaning are highly interrelated.

Concerning the ordering of structurally-based tasks, we feel that it is premature to make firm suggestions. Ideally, however, structures should be taught in the order that they are "learnable" (e.g, Pienemann, 1989) and tasks should be ordered by their degree of "difficulty" (Crookes, 1986, pp. 24–31; Nunan, 1989, 141–143). While admitting that both "structural learnability" and "task difficulty" are underdefined at present, we nevertheless argue that by carefully considering them, even learners at the lowest levels of SL proficiency should benefit from a task-based approach to teaching grammar. Thus, for instance, it should be imminently possible to order the presentation of ones structure-based communication tasks in accordance with attested stages of grammatical acquisition (e.g., for German or English, Pienemann, 1989; Pienemann, Johnston, & Brindley, 1988), though grouping of students according to such stages is admittedly impractical at present (Manfred Pienemann, personal communication). Furthermore, control of a number of task-related factors can lead to more or less task complexity (e.g., the possibility for interaction; input factors such as: number of words per utterance, degree of syntactic complexity, or degree of vocabulary difficulty;

cognitive factors such as: the availability of a visual frame of reference, the number of steps involved in the task, or the number of attributes in an identification task; etc.) (For reviews of task complexity, see Crookes, 1986; Nunan, 1989; for a review of input factors, Chaudron, 1988; for grammatical task difficulty, Loschky, 1989, and Rommetveit, 1985; for referential task difficulty, Brown, Sharkey, & Brown, 1987).

In lieu of sufficient information on either structural learnability or task complexity, one simple suggestion we would make is for the teacher to experiment with the tasks by looking at them as tests. (The fact that tasks are well suited for this purpose is taken as given at this point in our discussion). The teacher can look for learning by using the tasks as diagnostic and achievement tests (i.e., pre- and posttests) to determine, in a rough-and-ready manner, if the target structure is "learnable"[13] for students at a particular level of proficiency. Tasks which seem impervious to learning are probably either a) focussed on a structure too far above the learners' current level of acquisition, or b) too complex (in terms of task-related factors such as those listed above). Unfortunately, at this point in our knowledge it may not always be possible for the practicing teacher to determine which of these two possibilities is responsible for the difficulty. Thus, more research on learnability and task complexity is called for.

Regarding the choice of structures as targets in communicative tasks, we will make one specific recommendation. We recommend that task designers look at specific structurally-based processing problems to be overcome rather than at specific grammar points in a structural syllabus to be taught. By starting with processing and working back to grammar, the connection between the two is more likely to be strong. Inevitably, the structures one will end up with in such a procedure will be those that are especially meaningful and/or salient (though note that meaningful distinctions can be forced even from such structures as the double object dative). Conversely, starting with (frequently arbitrarily chosen) grammatical forms and trying to make connections with processing will likely take more time and may eventually be more frustrating for the task designer.

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[13] We do not claim to be using this term in exactly the same way as used by Pienemann and colleagues. One major difference, for instance, being that the above authors do not use accuracy of production as a measure of acquisition.

Conclusion

In this paper, we have outlined an approach towards the teaching of grammar from a communicative (information transfer) perspective using tasks. In our approach, we target specific structures for instruction rather than simply letting the grammar "take care of itself" (c.f., Krashen, 1985; Prabhu, 1987). On the other hand, our approach to task design allows structures to be learned/acquired[14] implicitly, rather than requiring explicit instruction (e.g., explication of rules). However, we do not categorically rule out explicit instruction in conjunction with such tasks. Instead, we simply argue that within such an approach, tasks can be designed such that explicit grammar instruction is quite unnecessary if not superfluous (see Doughty, 1990, for results supporting this view).

Because we believe that learning a second or foreign language can be characterized as a process of hypothesis formation and testing, restructuring, and automatization, we suggest that tasks which facilitate this natural process (or are congruent with it) be used. These learning processes are generally implicit. However, we also believe that these processes take quite a bit of time to run their course in a "natural exposure only" environment. Getting the necessary data to use in forming and testing hypotheses is often a matter of chance or good fortune in everyday (or "free") conversation (e.g., see Schmidt & Frota, 1986). Thus, in the classroom, by repeatedly focussing the learner on relevant information (e.g., meaningful structural contrasts) one can facilitate the processes of restructuring and automatization. Through this implicit focus on form, the process of SLA can be sped up and taken to a higher level of ultimate attainment, all the while staying within the natural route of acquisition (Doughty, 1990; Long, 1988).

We do not however, propose that all SL/FL instruction be either task-based, or form-centered. We see value both in unplanned free conversation (e.g., Lantloff & Ahmed, 1989) and in explicit structure-based consciousness raising activities (e.g., Rutherford, 1987). Rather, our current proposal is meant as one way to facilitate a limited, though clearly vital area of SLA, that of morphosyntax (i.e., "grammar" with a small "g"). Nevertheless, we speculate that our approach to the careful design of specifically targeted pedagogical

[14] We do not attempt to make a distinction between the two terms here.

tasks can be applied to virtually any linguistic domain. Thus, we suggest that the general principles proposed here should be equally applicable to the creation of communicative tasks for teaching such areas as SL vocabulary, pronunciation, semantics, pragmatics, or cohesion. Furthermore, although we have dealt primarily with the aural/oral mode of communication, we view these principles as equally applicable to the written mode as well. It is our hope that more detailed suggestions along the above lines will be made and tested out as our profession gradually removes language teaching from its proverbial "black box".

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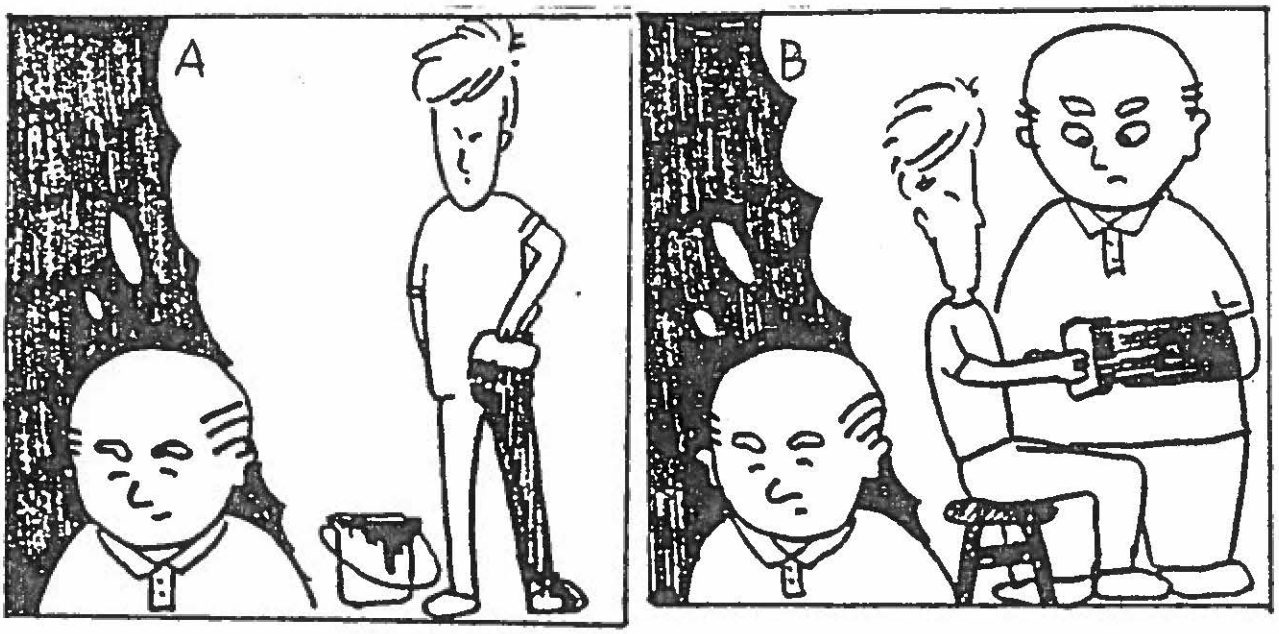
Appendix A

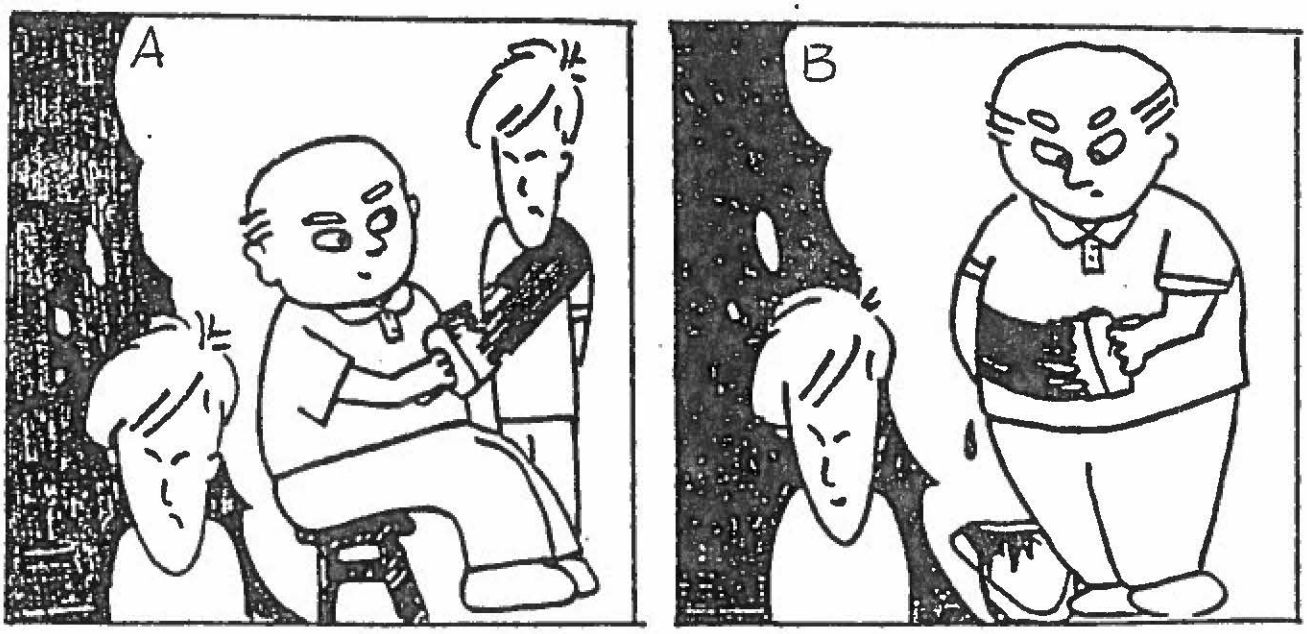
Reflexive binding task (from Shimura & Yoshino, 1988, appendix E)

19. Mr. Fat expects Mr. Thin to paint himself.



[1] Picutre A [2] Picture B [3] Both A and B

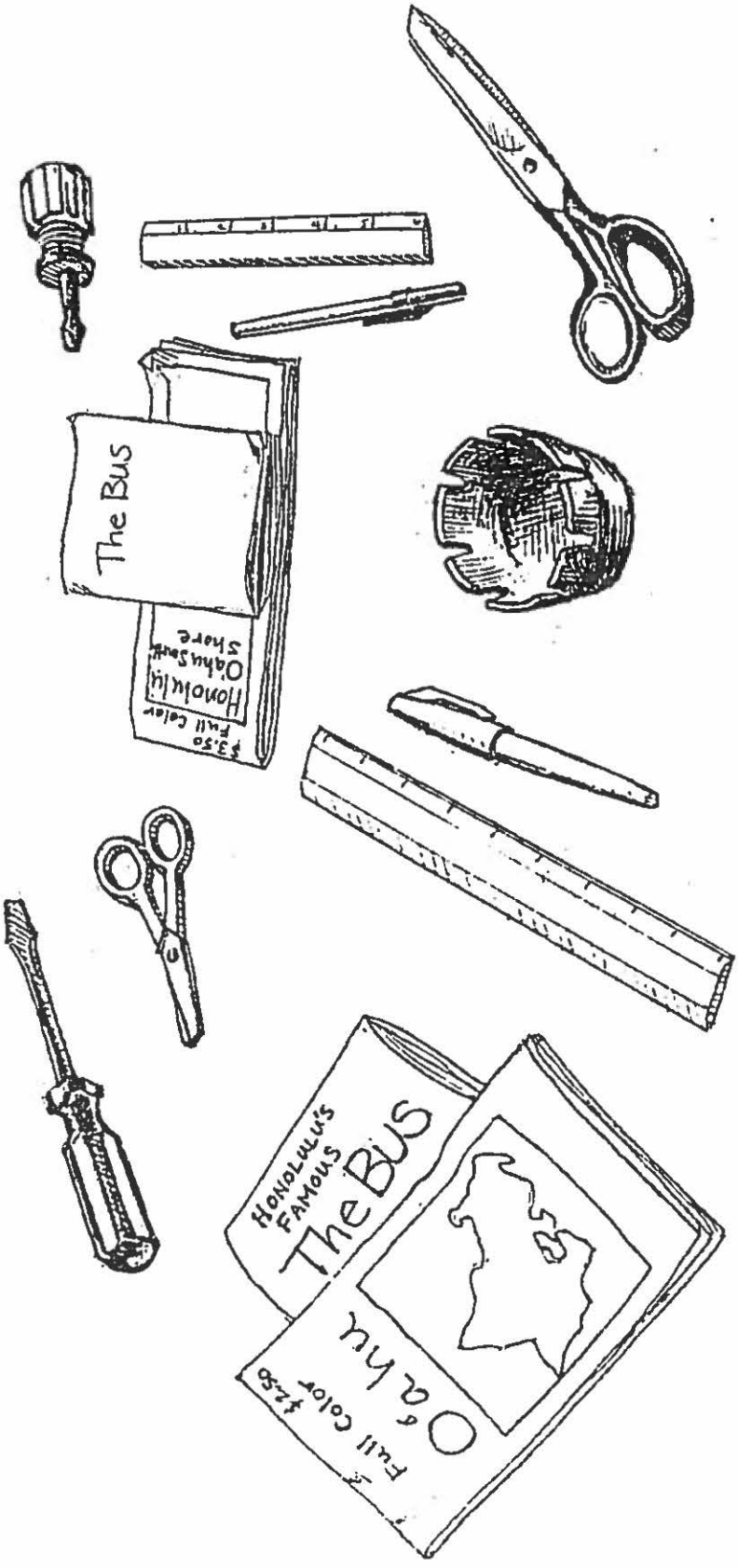
20. Mr. Thin believes Mr. Fat will paint himself.



[1] Picutre A [2] Picture B [3] Both A and B

Appendix B

Locative structure task (from Loschky, 1989, p. 160)



Trial 6 of 6

Please draw an outline around each of the 3 objects described to you and number them from 1 to 3 in the order told to you.

Appendix C

Lego block task (from Ur, 1988, p. 232)

25.4 Describe and arrange

Prepositions of place in instructions; oral interaction.

Materials: Sets of Lego blocks or Cuisenaire rods of varied sizes and colours; each student has an identical set.

Procedure: Give students instructions how to arrange the components:

Put the yellow rod across the black rod ...

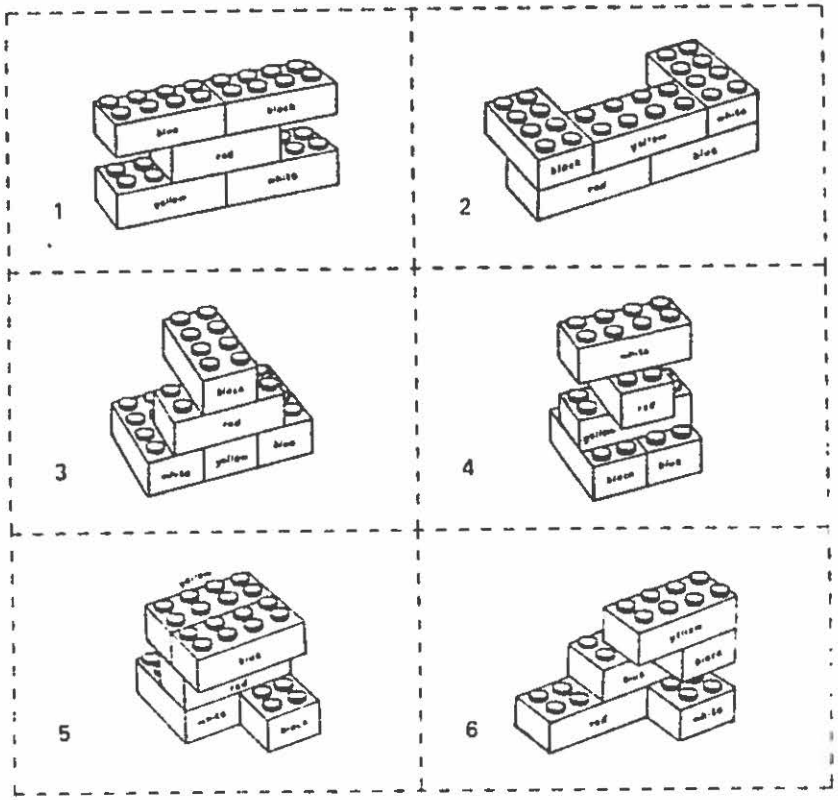
Put the red brick behind the white brick ...

Then in pairs: one student arranges his or her materials in a pattern the other cannot see, and then gives instructions how to lay them out. At the end they check they have the same pattern.

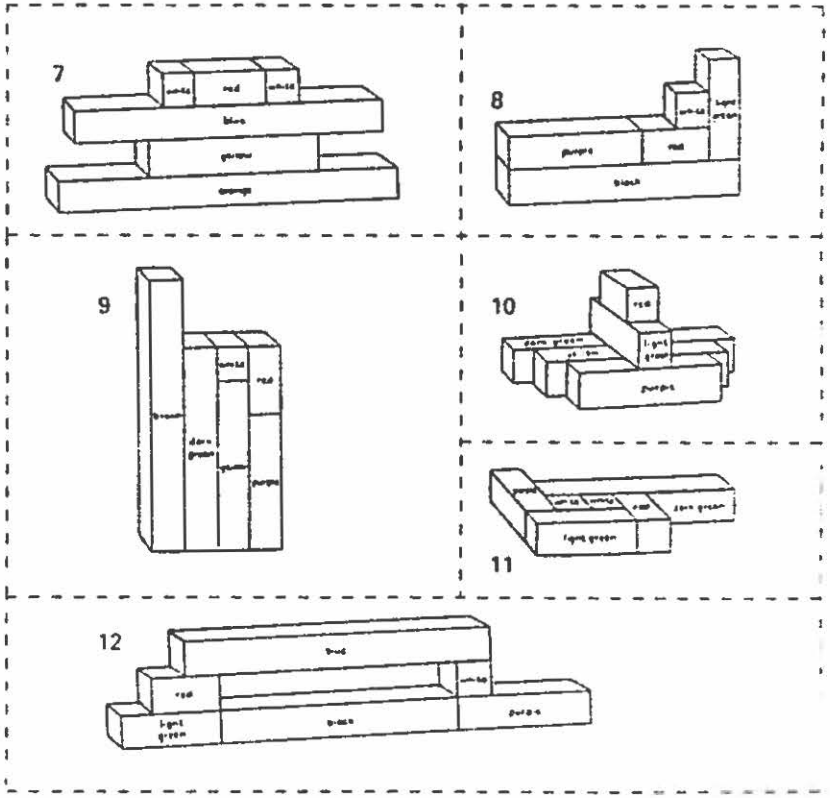
Variations: Using only one set of materials per pair: the student giving the instructions gets a sketch of the desired layout instead of building it him or herself, and dictates from that. Examples in *Box 64*. If several copies of each sketch are made, they can be exchanged each time, until every pair of students has done as many as possible in the time.

BOX 64

Buildings to describe



BOX 64 continued



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