

A Re-Examination of L₁ Interference and L₂ Complexity
as Factors in Second Language Syllabus Design

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Abstract

A fundamental weakness shared by second language syllabi is that they have been based on their authors' assumptions about language learning and have lacked an empirically supported, psycholinguistic grounding. The following article will review two major traditions in syllabus design which share this weakness.

Underlying one tradition is the assumption that second language structures which are the most different from the learner's L₁ are also the most difficult to learn, and therefore should be given strongest emphasis in the syllabus. In the other tradition, it is assumed that there is a direct relationship between linguistic complexity and learning difficulty, and that the syllabus, therefore, should present target structures to the learner in an order of increasing linguistic complexity.

This article will re-examine the assumptions underlying these two traditions in syllabus design in light of recent findings from second language acquisition research.

1. Introduction

Design of the instructional syllabus continues to be one of the most fluctuating and controversial areas of second language pedagogy. Decisions regarding syllabus content have been made from a variety of perspectives on the organization of language -- traditionally, its grammatical structures, and more recently, its notional and functional categories, the situations in which it is employed, or the topics which form the context of its use. Criteria for selection, sequencing, and grading of syllabus content have also been subject to differing opinions, including social usefulness, frequency and range of occurrence, and degree of difficulty for the learner.

In spite of their differences in content and theoretical grounding, however, there is one characteristic that language syllabi have in common -- a characteristic which is perhaps their greatest weakness. Underlying the construction of all these syllabi is the assumption that languages are learned in the ways that linguists describe them. Syllabus design has thus been disappointingly lacking in empirical evidence as to the ways in which people actually process and acquire a second language.

Two major traditions in language syllabus design are especially representative of this common weakness. In one tradition, syllabus content is selected on the basis of differences in linguistic features of the student's native language and the "target" language to be learned. The assumption here is that those structures in the target showing the greatest differ-

ences from the learner's L_1 will also pose the most difficulties for the learner, and hence require major attention in the syllabus. In the other tradition, syllabus specifications are based on gradations of semantic and syntactic complexity in the target language itself, the assumption being that there is an inverse relationship between the linguistic complexity of a structure and its "learnability"; therefore, it is argued, a syllabus should present target language items to the learner in an order of increasing linguistic complexity.

Research on second language acquisition in the early 1970's called into question these assumptions about the roles of native language differences or target language complexity in the learning of a second language, and thus undermined the value of either tradition as an optimal approach to syllabus design. A number of studies indicated that differences between the learner's native language and English as a target language were, in many ways, inconsequential to the accuracy order in which learners produced grammatical morphemes (Bailey, Madden, and Krashen 1974; Dulay and Burt 1974b), the developmental sequences through which they proceeded in acquiring target syntax (Ravem 1968, 1975; Cancino, Rosansky and Schumann 1975), or the production errors which represented their hypotheses for rules of target grammar (Dulay and Burt 1972, 1974a, 1974c; Jain 1974; Richards 1971). Furthermore, it could not be demonstrated empirically that English language learners produced syntactically, semantically, or phonologically simple grammatical morphemes more accurately than those which are linguistically complex (Larsen-Freeman 1975, 1976a). Thus, no consistent relationship could be found between the relative linguistic complexity of grammatical structures in the target language and the degree of difficulty learners experienced in producing them.

Recent research has, in general, upheld claims made on the basis of these earlier studies. A number of recent investigations, however, specifically those which have focused on previously unexamined areas of second language development or have compared learners under different conditions of L₂ exposure, have shed new light on the roles of native language interference and target language complexity in second language acquisition.

Thus, through cross-linguistic research by Keller-Cohen 1979, Schumann 1978, Zobl 1980a, b, 1982, native language has been shown to be a powerful factor in the duration rather than order of developmental sequences underlying acquisition of target structures in English.¹ Such a finding has implications for the grading of linguistic material in classrooms where learners come from different native language backgrounds and thus may require differing amounts of time to progress through each developmental stage.

Furthermore, evidence has been found that target language complexity has an effect on second language production in certain learning situations. As a case in point, in a study comparing language learning under different conditions of exposure to English L₂ (Pica 1982, 1983), a relationship between degree of linguistic complexity and 'learnability' of linguistic structures was identified for adults learning English in formal instructional settings (as opposed to those whose only access to English was through exposure to an English-speaking community). Intensive instruction appeared to assist their acquisition of grammatical morphology with simple and straightforward relationships, but dampen overall control of complex morphology. This finding has a bearing on the selection of items in the teaching syllabus. It suggests that linguistic items which are simple in terms of form-function relationships may be isolated for presentation to the classroom learner, while those with complex form-function patterns be given a minimal amount of explicit attention by presentation through

extensive incorporation into the input the learner receives.

Recent findings in second language acquisition research thus suggest important ways in which attention to structures in the native language of learners and to areas of linguistic complexity in the language they are learning can be taken into account in the selection, sequencing, and grading of the instructional syllabus. The following article will attempt to elucidate this claim through a description of these research findings and a discussion of their impact on language syllabus design.

2. Syllabus Design Based on L₁ - L₂ Differences

Issues and Questions

A widespread practice in the 1940's and 50's was to organize the language teaching syllabus according to a contrastive analysis of differences between the student's native language and the target language to be learned (Fries 1945; Lado 1957). Target items were chosen on the basis of their dissimilarity with corresponding native language structures, then graded according to degrees of difference. Those structures showing the greatest amount of difference were given the most attention in the classroom -- usually in the form of drills and guided practice in the target language.

Questions regarding the effectiveness of this type of syllabus arose, however, against a background of studies on learners of various native language backgrounds. It was found that items in the target language which diverged only slightly from the learner's native language often caused more difficulty than those which were considerably different. Buteau (1974), for example, found that native English speakers had more difficulty learning sentence patterns of French L₂ which were structurally similar to their native language than those which were structurally different.

In other studies, structures in a target language which appeared to be highly unlike their counterparts in the learner's native language, and thus could predictably cause difficulty, were, in fact, acquired quite rapidly. Gillis and Weber (1976), for example, found that their Japanese subjects acquired English negating devices rather quickly in spite of the fact that Japanese marking of this feature through a particle placed at the end of an utterance is highly unlike the English use of not after an auxiliary verb. It was also found that some items caused similar difficulties for learners of English regardless of native language. Bailey, Madden, and Krashen (1974), Dulay and Burt (1974b), and Fathman (1975), among others, found that English plural and copula were among the most accurately produced grammatical morphemes for subjects whose native language structures were both similar and different compared with English, whereas past regular and third person singular verb inflections ranked low in these subjects' accuracy orders.

Serious doubts thus were raised as to whether a syllabus designed according to predictions of difficult areas between the native and target languages was an effective framework for guiding language instruction. These concerns reflected claims made in an earlier position paper by Wardaugh (1970) regarding "strong" (or predictive) and "weak" (or explanatory) versions of the contrastive analysis hypothesis. In commenting on the situation in language pedagogy at that time, Wardaugh proposed that the "weak" hypothesis was the only feasible version of the two, i.e., contrastive analyses of students' native and target languages were more suitable as a means of explaining language learning errors produced by students than for organizing a syllabus for their instruction. Wardaugh's position was qualified, moreover, by evidence from learners' production errors which indicated that explanations for most errors are ambiguous, traceable to both native and target language influence.

Contributions from Cross-Linguistic Research

The impact of this position -- that native language has a relatively minor role in second language acquisition -- can be seen in most current instructional syllabi, in which selection and grading of linguistics material is decided on the basis of features in the target language alone. It is only recently, through cross-linguistic research comparing the acquisition of the same English constructions by learners of different native language backgrounds, that attention to a student's native language has again become relevant to the organization of the language syllabus.

Cross-linguistic research has corroborated earlier findings that second language learners master the target language through a series of transitional periods characterized by erroneous and approximate, but systematic, productions of target structures. As learners proceed through each developmental period, they restructure the rules on which their erroneous productions are based. Cross-linguistic research has uncovered, however, the fact that native language influences

the rate at which learners restructure those rules prerequisite to each new sequence in their second language acquisition. Thus, if the immature structural pattern characteristic of a developmental period in the acquisition of a target language resembles a mature structural pattern in the learner's native language, then the learner may need considerable time to revise the rules hypothesized about the target language at this developmental stage. The following example from cross-linguistic research on the development of negation in English will illustrate this point.

Extensive research into the acquisition of English negation has shown that, regardless of native language background, all learners proceed through a similar developmental continuum in their route to target-like competence. (See, e.g., Schumann 1978; Stauble 1978, 1981; Wode 1980, 1981.) There is

an initial pre-verbal negation period in which learners produce utterances such as I no want that, I no study, and I no can study. This is followed by a period in which don't gradually replaces the pre-verbal no or not and is used as an all-purpose negator regardless of required tense or modality. During this time, don't is used appropriately in utterances such as I don't want that, but is also used inappropriately in utterances requiring doesn't, didn't, can't, couldn't, and other auxiliary and modal verbs. Gradually, don't is analyzed into its various tense representations, and negation patterns for auxiliaries, copula, and modals are expanded. During each of these developmental sequences, the learner appears to restructure a functional, but non-target-like negating device into more target-like forms. Thus, through a process of hypothesis-testing, accurate English negation patterns are eventually acquired.

Based on these similar transitional sequences of acquisition, it would appear to be relatively straightforward to select, sequence, and grade instructional material for teaching negation, whether as an isolated grammatical construct or as a linguistic expression of communicative functions such as refusing, denying, and prohibiting or semantic notions such as existence, impossibility, etc. Presentation of negation could proceed in the manner suggested by Pienemann (in press) for teaching question formation: the syllabus would introduce negation to the learner through presentation of don't in all possible target contexts. However, the teacher's input would include the range of all possible negating devices, while deviant forms would be allowed in the learner's output. As don't was produced with increasing accuracy by students, less tolerance would be given by the teacher for pre-verbal negating devices, and gradual emphasis would be placed on additional structures, including doesn't, didn't and various modal, copular, and auxiliary structures. Findings from research on the development of negation thus could provide useful guidelines for selection and sequencing of lin-

guistic items for its instruction.

More recent analyses involving cross-linguistic comparisons on the acquisition of negation do, however, complicate the picture somewhat with regard to the grading of linguistic items in this area. It has been observed that the early period of pre-verbal negation is often considerably protracted among learners whose native languages employ pre-verbal negation as a target structure (Schumann 1978, Zobl 1980a, b, 1982). Such is the case for native speakers of Spanish and Italian, where use of a pre-verbal negator in utterances such as:

Spanish: No lo quiero No puedo estudiar

Italian: Non voglio quello Non riesco studiare

represent standard production of I don't want that and I can't study in these languages. It has been shown that speakers of Spanish and Italian often remain at the pre-verbal stage in their acquisition of English negation much longer than native speakers of German, Norwegian, and Japanese (Schumann 1978, Zobl 1980a, b, 1982), since, in these latter languages, negation is expressed after the verb, and thus, in ways which do not resemble a transitional stage in the acquisition of English negation. Native speakers of Spanish, in fact, have been shown to fossilize their production of English negation, thus remaining at an early stage of development in this area, while, nevertheless, acquiring more target-like mastery of other English structures, particularly noun phrase morphology (Pica 1982).

It is important to the grading and sequencing of material for teaching negation in English as a second language that syllabus designers consider the possibility that native speakers of certain languages may take longer to

proceed through a developmental stage in their acquisition of English negation or remain at an early stage despite their development in other areas of the second language grammar. For some learners, more time will be needed for progressing from their early period of negation development to the next and for activating the processing mechanisms required for restructuring the rules on which the erroneous negation pattern has been based. In a classroom which is heterogeneous with regard to native language backgrounds of its students, some students may be ready to proceed to the next item for negation on the syllabus, while, for others, this next item will have no impact. The appropriate point for introduction of an additional negating device may vary considerably for students of different native language backgrounds. Thus, the syllabus which introduces don't constructions, then follows up with didn't and doesn't several lessons later, may be "on time" for the German or Japanese native speakers in the classroom, but far too early for students who speak Spanish or Italian.

A syllabus based on the presentation of structures at the "right point" in the learners' English language development (Pienemann, in press) must be adjusted to account for learner differences in a classroom of learners whose native language influence is such that, after an initial breakthrough into the English negation system, the "right point" for moving on to the next period of development may vary considerably. It is possible that, unless the syllabus is adapted to the needs of individual learners, certain students will be left behind in their negation development, and possibly fossilize at a functional, but ungrammatical, proficiency level. Findings from cross-linguistic second language acquisition research thus suggest that, while the language syllabus may be organized in a similar

way with regard to selection of items, the grading or proportioning of time given to a particular item in the syllabus will have to be adjusted for certain learners in the classroom.

3. Syllabus Design Based on L₂ Complexity

Issues and Questions

A second important tradition in syllabus design, still quite popular today, has centered on principles of linguistic complexity, whereby it is assumed that the more linguistically simple a target structure is, the easier it will be for the student to learn. Thus, simple structures are selected for initial presentation and more complex structures are introduced at later points. Decisions as to what is simple vs. complex in the target language are based on linguistic analyses of the target grammar. Structures which require few transformational operations for their realization and grammatical items with transparent form-function relationships are presented earlier than those which are transformationally more complex or whose form-function relationship is more opaque. Thus, simple, declarative sentences are introduced prior to question forms, yes/no questions are presented before wh-questions, and regular plural is taught before articles a and the.

Such organization of material in the instructional syllabus from simple to complex is intuitively appealing. However, until recently, there was no empirical evidence that what is linguistically simpler is also easier to learn. With regard to English grammatical morphemes, for example, studies showed that the factor most critical to their order of appearance in the learner's developing interlanguage was not their degree of linguistic complexity relative to one another, but, rather, the frequency with which they occur in the input to the learner (Larsen-Freeman 1975, 1976a, b).

Crucial to the relevance of this finding for syllabus design is the fact that the data for determining morpheme production order were collected primarily from subjects learning English in both the wider community and the second language classroom. All subjects, therefore, had access to informal conversational interaction, which may have served as their major resource of input for second language acquisition. Without comparisons made between subjects acquiring English under untutored conditions in the wider community and those who are learning English through formal instruction exclusively, there is no way of knowing whether classroom input, in which grammatical forms and functions are isolated for presentation, then organized according to gradations in linguistic complexity, can alter the natural course of second language acquisition, i.e., accelerate or inhibit the sequences through which a second language is acquired.

The possibility that such an alteration can occur is suggested by Krashen's (1977, 1978) distinctions between "easy" and "hard" morphology, and his claims that certain grammatical morphemes are easier to learn than others. Based on Krashen's definition of "learning" as the conscious internalization of target language rules, the forms and functions of "easy" morphemes such as third person singular and regular plural can be brought to the learner's attention because they are relatively transparent and few in number. Articles, on the other hand, are "hard" to learn. Rules for their use depend on a variety of linguistic and extra-linguistic factors pertaining to their associated noun referent. According to Krashen, articles cannot be learned through isolated presentation and practice, but must be acquired through negotiated interaction with speakers of the target language.

Contributions from Comparative Studies

In support of Krashen's claims, Pica (1982) found that third person singular -s, an "easy" morpheme, according to Krashen's criteria, was produced more accurately relative to other grammatical morphemes among subjects who

had received explicit classroom and textbook instruction than by subjects whose only access to English was through interaction with members of the wider community. On the other hand, "hard" to learn articles were produced with similar accuracy by both groups of subjects. This result, as applied to Krashen's position, can be explained by the fact that use of the, a, or zero article varies according to semantic features of its noun referent and presuppositions in the speaker-listener relationship. Important factors include the referent's first or second mention in the discourse and its degree of representativeness, visibility, or familiarity to speaker and listener. These factors are not fixed, but rather are subject to setting, topic, and interlocutor relationships, and hence, are difficult to isolate for the learner (See Pica 1981 for a review and analysis).

In contrast, the rules for third person singular are relatively few and straightforward. There is one form, a word-final -s. Although its exact surface features vary according to phonological environment, the phonological shape of this morpheme can only be the highly similar /s/, /z/, or /əz/. Third person singular also has only a few major functions, i.e., as an indicator of general truths or habitual actions. Thus, this grammatical morpheme can be isolated for the learner with regard to both form and function.

The results of Pica's study indicate that it is possible to accelerate, through explicit instruction, the development of linguistically simple morphemes such as third person singular. Instruction on complex items such as articles, however, appears to have little consequence for their production accuracy. In terms of syllabus design, this suggests that the forms and functions of linguistically simple items can be isolated for presentation to the learner, but that complex items be excluded from specific presentation. The fact that articles have been identified as a frequently occurring feature of teacher speech to students of English as a second language (Larsen-Freeman 1976 b, Long and Sato 1983) suggests that they may be omitted from explicit presentation in the teaching syllabus and left to their inevitable inclusion in the teacher's input.

The Case of Progressive -ing

Of additional relevance to the consideration of target structure learnability in selecting items for the second language syllabus is the grammatical morpheme, progressive -ing. The form -ing, suffixed to a verb base, serves quite disparate functions in English--not only as (1) an indicator of progressive aspect, but also as (2) a pre- and post-modifier, and (3) a nominal subject or object:

(1) He's smoking two packs of cigarettes a day.

While he was smoking a cigarette, he began to cough.

(2) He picked up the smoking cigarette from the ashtray.

The man smoking the cigarette is my uncle.

(3) Smoking can be dangerous for your health.

He quit smoking last year.

Presenting and ordering rules for progressive -ing can thus be a complicated task for the syllabus designer since the form -ing serves more functions than as an indicator of verb aspect.²

In a study comparing the acquisition of progressive -ing (Pica 1982, 1983) in the production of native speakers of Spanish learning English in one of three conditions: (1) a formal classroom, (2) the wider community, or (3) a mixed setting, offering access to both the classroom and community, the three groups displayed comparable use of this morpheme in linguistic environments where its use was required. In other words, subjects from each condition showed a similar level of accuracy in inflecting base verbs with -ing to indicate progressive aspect. However, those subjects who had received explicit instruction for progressive -ing (those from groups 1 and 3) also overused the -ing form, suffixing it to base verbs where its use was not required. This tendency was particularly strong among subjects

in group (1), whose only input came from a classroom setting. Productions such as the following were significantly more frequent in the interlanguage of the instructed subjects, compared with that of the Untutored group:

- (1) I don't understanding these people.
- (2) You don't smoking anymore?
- (3) (When I first got married), I don't working
- (4) I thinking in this holiday I don't start to work
- (5) (Every day) in the afternoon, I'm returning to my house and I have something to eat
- (6) I would like to continuing with these areas
- (7) Since that time, I started to liking English
- (8) It's so hard because I have to remembering all the rules

It appears from these findings that explicit instruction in the progressive -ing morpheme may not be beneficial to the promotion of its target-like use. Instructed learners, perhaps confused by the many possibilities for using -ing in English, added it to verbs where it was not required. In contrast, untutored acquirers, left to make their own hypotheses about the rules for progressive -ing based on available input, were more successful in restricting its use to those verb environments in which progressive aspect was required. Since progressive -ing, as articles, has been found to be frequent in the speech of teachers to students of English (Larsen-Freeman 1976b), this suggests that this morpheme may be acquired more efficiently if excluded from the teaching syllabus and made available through extensive exposure to input at the learner's level of comprehension.

4. Overview

This paper has described recent findings from second language acquisition

research which serve to re-focus attention on two traditional approaches to syllabus design. Syllabus construction is thus enhanced by information as to the ways in which the learner's native language contributes to negation development, and the ways in which grammatical complexity of the target language confounds the learner's hypotheses about morpheme rules. As additional studies of second language acquisition are conducted, and as data from previous research are re-analyzed from the perspective of newer research questions, perhaps this, too, will add to the body of knowledge on second language acquisition essential to effective syllabus design.

There is the danger, however, that teachers and curriculum developers, who often have different perspectives from researchers regarding the language learner's task, may find little to abstract from second language acquisition research which is relevant to their concerns for language syllabus design. This is because a principal goal of most language instruction is to help the learner use grammatical utterances in order to interact successfully in various academic, professional, or social situations. However, studies of second language acquisition, with few exceptions (e.g., the research on second language pragmatics by Fraser, Rintell, and Walters 1980 and Scarcella 1979), have focused on how learners acquire the grammatical system of the second language, rather than how they develop the ability to use this system for communicative purposes. This kind of research can inform the teaching of target grammatical constructions, but not necessarily instruction on the appropriate use of these structures in target discourse.

Even more problematic is the fact that there are little data regarding how native speakers use the grammar of their language to communicate their purposes. Thus, while norms exist for assessing learners' development of target-like grammatical constructions, few empirically derived guidelines can be found for assessing their use of sociolinguistic rules. Further

work is needed, therefore, in specifying the ways in which structural devices are used to fulfill target language functions, depending on setting, topic, participant roles, and other sociolinguistic factors. This will require more empirical data than are available at present regarding ways in which native speakers use the grammar of their language in social interaction.

Recent findings from second language acquisition research have upheld some of the assumptions on which language syllabi have been based. However, further research is needed to identify ways in which language can best be organized and presented to the learner in an instructional setting. Information regarding effective syllabus design must come, therefore, from an integrated perspective drawing from research in a number of areas, including both naturalistic and classroom second language acquisition, psycholinguistic and sociolinguistic dimensions of interlanguage development, and discourse analysis of native speaker interaction. The enormity of this task will require contributions from the second language researcher, the linguist, and the classroom teacher.

NOTES

- ¹ For an interesting study on the ways in which learners' native language appears to influence their hypotheses about a target structure at different developmental stages see Wode (1980 and 1981).
- ² See Wagner-Gough and Hatch (1975) for another perspective on the complexity of form-function relationships for progressive -ing.

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