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The Development of L2 Intuitions

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Intuitions, particularly judgments of grammaticality, have played an important role in theoretical linguistics, but the nature of grammaticality judgments by second language learners has not received adequate attention. The present study is an investigation of the function of grammaticality judgments in second language acquisition. Two groups of learners of different proficiency levels were asked to give grammaticality judgments of sentences they had written and of sentences other students had written. The results were analyzed in terms of the subjects' ability to make the appropriate grammaticality judgments and to correct those sentences they had judged to be ungrammatical. The results indicate that with increased proficiency in English, learners move from an overall ability to make general assessments of grammaticality to an ability to identify and/or correct particular details. The results of this study are also discussed in terms of Bialystok's (1979, 1981) notion of implicit/explicit knowledge and the general function of metalinguistics awareness in second language acquisition.

INTRODUCTION

It is widely accepted that the language of second language (L2) learners, what Selinker (1972) has called "interlanguage," or what I shall be referring to as a *learner-language (see* also Corder's 1978 "language-learner language"), is a system in its own right. This notion has been further amplified by Adjemian (1976), Gass and Ard (in press), Gundel and Tarone (in press), Eckman (in press), and Schmidt (1980), all of whom have argued that learner-languages are subject to the constraints on natural languages. If we assume similarity to natural languages, we would further suppose that they could be investigated through the same methods as other types of natural languages, for which a chief methodological device is the use of intuitions of native speakers. However, this device has been used relatively rarely in studying L2 learner-languages.

In this article we discuss the significance of intuitions in general as

well as present results of an experiment in which L2 intuitions were the subject of investigation. In particular, a major point of interest is the discovery of how learners evaluate and correct their own utterances. The implications of this study for the overall development of a learner's knowledge of a second language will be discussed.

Grammaticality Judgments

Judgments of grammaticality refer to a speaker's intuition concerning the nature of a particular utterance. The basic question is whether or not a given utterance (usually a sentence) is well-formed.

The goal of second language acquisition research is to seek answers to the question of acquisition itself. Not only do we ask ourselves what is acquired, but also when, how, and why. While individual research questions frequently address only limited aspects of the *what*, the goal of research is to understand the totality of acquisition. We are frequently limited by the type of data collection done and hence the claims that we can make about the process of acquisition. The complete picture of the what of acquisition must come from examining a variety of L2 sources, including production, perception, comprehension, and intuition data. Anything less cannot hope to meet even the minimal requirement of explanatory adequacy (see Gass 1980a, Tarone 1982).

Given the overwhelming reliance on grammaticality judgments within theoretical linguistics, it seems somewhat surprising that the L2 acquisition literature is so rarely based on data obtained from this method. However, there are several reasons why this may be the case. Schachter, Tyson, and Diffley (1976) speculated. that the paucity of studies using intuitional data is a reflection of elicitation methodology used in first language acquisition studies, where judgments of grammaticality are often difficult to obtain because the subjects are very young children. Since L2 acquisition research has followed closely on the heels of child language studies, the use of intuitional data in our field has similarly been limited, although clearly the limitations that apply to children are not necessarily applicable to adults.

There are still other reasons which, perhaps, have greater validity in justifying the absence of intuitional data in adult second language acquisition studies, or which may at least provide greater justification for not maintaining the parallel with theoretical linguistics. By and large, grammaticality judgments are not asked of naive speakers. Linguistic theories, in particular generative analyses of languages, are based primarily on judgments made by professional linguists. When one utilizes judgments made by linguistically unsophisticated speakers, and perhaps even linguistically sophisticated ones, one does not always

find consistency between what speakers do and what they say they do. The problem may be further compounded when dealing with non-standard English speakers, since one cannot often be sure just what variety of language the judgments are being made about—that is, are they making judgments about the standard, or what they think the standard is, or about their own dialect? The situation of L2 learners is not dissimilar since these learners are generally asked for judgments about the target language and not necessarily about their own learner-grammar. Despite this, we make inferences from their responses about the nature of their target language (TL) grammar. In other words, in the absence of very explicit instructions, L2 learners most likely assume that they are being asked about what is correct in the language they are learning. It is difficult to convince learners that their attempts at a second language form a systematic entity, which would pave the way for direct questions about their learner-grammar.

A third justification for the limited use of grammaticality judgments as a means of data collection in L2 research concerns the learner's overall ability in the target language. When asking for judgments from adult native speakers (even linguistically unsophisticated ones), one can assume that most of the time there is at least an *approximate* equivalence in a speaker's ability to produce utterances, to comprehend utterances, to parse utterances, and to judge utterances. For L2 learners this is not necessarily the case since there is often a large discrepancy in one's abilities in these areas. Furthermore, Carroll, Bever, and Pollack (1981) investigated native speaker intuitions of sentence relatedness and showed that linguistic intuitions can be manipulated by altering the conditions under which sentence pairs are presented. The implications of their study are far-reaching in that the one-to-one relationship between grammatical structures and intuitions is called into question. Nonetheless, they suggest that the intuitive process can itself be the object of inquiry:

> . . . linguistic intuitions have a dual systematic nature. On the one hand, they can be basic and primitive manifestations of the grammatical knowledge speakers share; but on the other hand, they are complex behavioral performances that can be properly understood and adequately interpreted only by a comprehensive analysis (Carroll, Bever, and Pollack 1981:380).

In fact we claim that linguistic intuitions of L2 learners are important not only for the information they reflect about learners' grammatical knowledge, but also because of the information they can provide about L2 development and the ways in which language knowledge is organized.

Despite the lack of attention that grammaticality judgments have received in the L2 literature, their importance is beginning to be recognized. Corder (1973) originally discussed the value of adding this

type of data to the more commonly collected data, which he called "textual data," these latter coming from utterances which learners themselves have produced. And recently, several L2 researchers have used intuitional data in their work. Bailey and Madden (1980), Ioup and Kruse (1977), Schmidt (1980), Gass (1979), Bialystok (1979, 1981), and others have all made use of this type of data in attempting to understand the process of acquisition (see Chaudron, undated, for an extensive overview of research in this area).

Although the ultimate goal of L2 research is to determine the nature of non-primary language acquisition (Adjemian 1981), "the immediate goal of research in this field is the description of the grammatical and phonological system which underlies learner performance" (Tarone 1982:70). However, if we limit the scope of our research to descriptions of the learner's grammar, well-documented phenomena such as avoidance (Gass 1980b, Schachter 1974, Kleinmann 1977) and recent conceptions of language transfer as espoused by Kellerman (1979, in press; Zobl 1980) will not manifest themselves in the data.

Just what information, then, can grammaticality, or *intuitional judgments*, as they are frequently called, provide us with? As mentioned above, they reflect information about a learner"s knowledge, either static or developing, of the target language and the organization of that knowledge. However, there is yet an additional aspect to be considered. The ability to think *about* language has sometimes been called *metalinguistic awareness*, an ability related to a greater facility with language. Metalinguistic activities encompass a wide range of phenomena, of which linguistic intuitions (including grammaticality judgments) are one part.

Metalinguistic Awareness

With this information as background, let us now turn to a consideration of metalinguistic awareness, what it is and its significance in doing L2 acquisition research. From Bewell and Straw (1981) we find various definitions of this term. Bateson refers to it as "those explicit or implicit messages where the subject of discourse is the language" (1976:127). Cazden says that it is "the ability to make language forms opaque and to attend to them in and for themselves" (1976:603). Another view comes from Fowles and Glanz, who say it is "the ability to manipulate language as an object" (1977:432). There are also differing degrees of awareness referred to by some authors. The common factor in all of this is that we are dealing with some ability on the part of the speaker to view language (or at least a particular aspect of it) in and of itself and to perform certain operations on it. In this sense, grammaticality judgments are crucial in determining this ability. Other evidence sug-

gested for the existence and use of metalinguistic awareness comes from word games, puns, recognition of ambiguities, and perhaps even translation tasks (Sharwood Smith, personal communication).

For second language learners the ability to think and talk *about* language might involve abstract analyses of a number of different types. For example, it might include 1) analyses of their own language, 2) a comparison between their native language (NL) and the target language, 3) a comparison between their native language and other languages previously learned, or even 4) a comparison between the target language and other languages previously learned.

Clearly, the ability to think about language as an abstract entity and to make cross-linguistic comparisons is manifested in the now familiar strategy of avoidance (Schachter 1974) or in Kellerman's (in press) concept of psychotypology. Presumably both presuppose a choice on the part of the learner about which linguistic forms will be successful in the target language, or which forms will be difficult. Moreover, metalinguistic awareness has been found to be a facilitator of acquisition. For example, it develops earlier and more rapidly in children with more than one language (Burling 1973, Sharwood Smith 1981, Slobin 1978). Heeschen (1978) suggests that there may be increased linguistic reflectiveness in multilingual situations regardless of whether or not the society is literate. In other words, there is some relationship between knowledge of languages and a greater amount of metalinguistic awareness.

According to Bewell and Straw, "there is strong evidence to suggest that a relationship exists between the development of metalinguistic awareness and language learning" (1981: 117). Initially, self-correction and restatement of utterances may serve to aid the communication process. Word games, puns, and recognitions of ambiguities surface at a later stage (for a full discussion, see Clark 1978).

It is our claim that a similar relationship holds for second language learning.[1] metalinguistic awareness has an important function for second language learners, allowing them to make comparisons between NL and TL, self-correct, and perhaps even monitor their output. Investigating a learner's ability to judge grammaticality is therefore essential to an understanding of a learner's development.

1 metalinguistic abilities in children have frequently been related to their abilities to develop reading and writing skills and not to their abilities to learn how to speak. That is, all children, regardless of their metalinguistic abilities, acquire native competence. However, as we point out later in this article, metalinguistic abilities do serve a communicative function for children, as Sinclair, Jarvella, and Levelt (1978) show. Furthermore, "success" in a language is not restricted to one's ability to speak and understand a language for, clearly, all non-impaired children do succeed in this area, but we claim that "success" includes reading and writing abilities. In this sense, greater metalinguistic abilities relate to greater language success.

Obtaining Grammaticality Judgments in L2 Research

Generally, in adult L2 acquisition, intuitional data are obtained by means of a paper and pencil task. Learners are asked to judge the grammaticality of certain test sentences, usually grammatical and ungrammatical versions of the particular structure the researcher is gathering information about. There is considerable variability among researchers as to the percentage of grammatical vs. ungrammatical sentences presented and whether or not the sentences are to be corrected. Some researchers ask the learners to correct those sentences which they consider to be incorrect, others underline the particular structure so as to focus attention on it, and others ask only for responses about grammaticality.

The test sentences typically used on these tasks are either 1) sentences actually produced by learners (Schachter et al. 1976, White 1977), 2) sentences designed by the researcher to test specific aspects of a given structure (Bailey and Madden 1980, Gass 1979, Ioup and Kruse 1977, Schmidt 1980), or 3) sentences in context designed to test grammaticality judgments (Arthur 1980). These researchers have hypothesized errors based on a contrastive analysis and then focused on them in their studies. However, it is important to note that errors actually produced are not always produced by the same person who is making judgments about them. For example, in the Schachter et al. (1976) study, the errors are produced and judged within a language group, but not necessarily by the person who produced them. Underlying this means of formulating a grammaticality judgment task is the implicit assumption that there is an Arabic-English interlanguage, a Spanish-English interlanguage, and so forth. In other words, Arabic speakers learning English all "do" the "same" thing. While this may be true to some degree, we do not yet know which aspects of one's NL will be influential on one's production of the TL and which will not be. Nor do we know how uniform this might be across speakers. As Corder (1973) has noted, theoretically, there may be as many different interlanguages as there are individuals who speak them.

In this article we will take a closer look at intuitional data, examining in particular what learners are able to do and how their abilities progress.

METHOD

The study described here is one in which judgments were elicited about a learner's own output. This, of course, is potentially difficult since learner-languages, unlike natural languages, are in a constant state of flux or, at least, are much less stable than other natural languages. Hence, grammaticality judgments were obtained within 24 hours after the sentences were produced.

The study is based on data from 21 subjects, 13 from an intermediate ESL class at the English Language Institute of the University of Michigan, and 8 from an advanced ESL class there. They were all given an in-class composition on one of two subjects: 1) the method of English language instruction in their own country, or 2) who they would like to be if they could be someone else for a day. There was ample time for students to locate and correct errors. In fact, there was considerable evidence of correction in the form of erasures and cross-outs. On the day following the in-class assignment, they were each given a grammaticality judgment test which consisted of sentences from each of these four categories:

a. four grammatical sentences from their own compositions
b. four ungrammatical sentences from their own compositions
c. two grammatical sentences from compositions of speakers of languages other than their own
d. two ungrammatical sentences from compositions of speakers of a language other than their own.

Hence, ideally, each speaker had 12 sentences (8 of which came from her/his own composition and 4 from someone else's). Half in each category were grammatical and half were ungrammatical. The sentences were presented to the learners in random order. The subjects were asked to judge each sentence as being either grammatical or ungrammatical (the terms *good English sentences vs. bad English sentences* were used), and to correct those sentences which they judged to be ungrammatical so as to make them grammatical.

RESULTS

Because a discussion of these results can become confusing, we have adopted terminology following Arthur (1980) to make distinctions concerning the terms *grammatical* and *ungrammatical*. We refer to grammatical/ungrammatical from the learner's point of view as *grammatical (L)* or *ungrammatical (L)* respectively, and we refer to grammatical/ungrammatical from the perspective of standard English as *grammatical (E)/ungrammatical (E)*.

There are a number of different measures that can be considered in analyzing the results of this study. The first one we discuss is consistency. By this we mean, how do learners view their own sentences? Theoretically, one could hypothesize that all sentences written by a given learner would be judged grammatical by that learner since students would not intentionally write ungrammatical sentences (especially when writing a composition for a teacher). Thus, all the

[2] In some cases it was impossible to obtain the requisite number in categories a and b.

sentences that the learner wrote (regardless of their actual acceptability in the target language) would be marked grammatical. This was clearly not the case, as can be seen in Table 1.

TABLE 1
Percentage of Own Sentences Judged Grammatical

Group 1 (Intermediate)			Group 2 (Advanced)		
Subject	Percentage	Native Language	Subject	Percentage	Native Language
1	37.5	Japanese	1	71	Korean
2	87.5	Vietnamese	2	57	Japanese
3	62.5	Korean	3	42.8	Japanese
4	37.5	Japanese	4	85.7	Japanese
5	50	Italian	5	25	Japanese
6	25	Spanish	6	16.7	Japanese
7	37.5	Spanish	7	62.5	Japanese
8	50	Spanish	8	12.5	Spanish
9	62.5	Spanish			
10	87.5	Spanish			
11	50	Spanish			
12	62.5	Spanish			
13	67.6	Rumanian			
$\bar{x}$ = 55.2			$\bar{x}$ = 46.65		
sd = 19.002			sd = 26.78		

As displayed in this table, there were many learners who failed to judge a large number of their own sentences as grammatical. However, there was quite a range in how individual learners viewed their sentences. In general, the intermediate students (designated as Group 1) were more consistent in their judgments in that they judged more of their own sentences grammatical than did the advanced group; however, due to the large amount of variability, these numbers must be interpreted with caution.

More interesting are the results regarding accuracy from the point of view of an English standard. For this we look first at those sentences which the individual students wrote (that is, categories a and b). Table 2 illustrates the extent to which the intermediate students (Group 1) and the advanced students (Group 2) were able to correctly identify their own sentences as grammatical or ungrammatical.

As can be seen from Table 2, the intermediate group correctly identified 74.4% of the grammatical (E) sentences, while they correctly identified 68% of the ungrammatical (E) sentences. The advanced group correctly identified 66.7% of the grammatical (E) and 68.9% of the ungrammatical (E) sentences. The intermediate group, then, is slightly better at identifying the grammatical (E) sentences than at identifying the ungrammatical (E) sentences. In other words, they have a better idea of when they are right than they do of when they are

wrong. The advanced learners have about equal abilities in determining their own correctness or incorrectness.

TABLE 2

Sentences correctly Identified (From the Perspective of an English Standard) as Either Grammatical or Ungrammatical, Based on Students' Own Sentences

	Grammatical (E)		Ungrammatical (E)	
Group 1 (Intermediate)	35/47	74.4%	34/50	68%
Group 2 (Advanced)	18/27	66.7%	20/29	68.9%

In Table 3 we see accuracy (again viewed from the perspective of the target language) based on those sentences not written by the students themselves (categories c and d). What is interesting is that in comparing the results of Tables 2 and 3, accuracy is generally less for sentences written by speakers of native languages other than their own than it is for their own sentences. The exception is the advanced group's ability to judge the ungrammatical (E) sentences written by speakers of native languages other than their own. These results are not surprising, since the sentences of categories c and d are not sentences about which learners have an internalized rule system. Responses to their own sentences (categories a and b) consist of responses to sentences about which they have some knowledge. The other sentences may or may not represent sentences about which they have knowledge. In the case of the advanced learners, it seems that the ungrammatical (E) sentences *are* sentences about which they have internalized information (see Schachter et al. 1976 for a discussion of indeterminate sentences).

TABLE 3

Sentences Correctly Identified (From the Perspective of an English Standard) as Either Grammatical or Ungrammatical, Based on Sentences Written by Learners of Other Native Languages

	Grammatical (E)		Ungrammatical (E)	
Group 1 (Intermediate)	17/26	65%	3/26	12%
Group 2 (Advanced)	8/16	50%	14/16	87.5%

An important aspect of a study of this sort is a consideration of the types of changes learners make on sentences they have judged to be ungrammatical (L). That is, we now focus our attention on those sentences which the learners have marked ungrammatical and which they subsequently changed. To better understand the changes made, the sentences have been divided into two groups: 1) those which are grammatical from an English standard, and 2) those which are

ungrammatical from an English standard. Table 4 shows the types of changes made (these include only the learners' own sentences).

Particularly interesting is the fact that when sentences are changed, the change only rarely affects the actual grammaticality/ungrammaticality (E) of the sentence. That is, although these sentences are judged

TABLE 4

Changes Made in Sentences Produced by the Learner and Designated Ungrammatical

Group 1	
Grammatical (based on an English standard)	
6/8	75% grammatical to grammatical
2/8	25% grammatical to ungrammatical
Ungrammatical (based on an English standard)	
26/33	78.8% ungrammatical to ungrammatical
7/33	21.2% ungrammatical to grammatical
Group 2	
Grammatical (based on an English standard)	
8/10	80% grammatical to grammatical
2/10	20% grammatical to ungrammatical
Ungrammatical (based on an English standard)	
12/20	60% ungrammatical to ungrammatical
8/20	40% ungrammatical to grammatical

ungrammatical (L), the changes made do not affect the grammaticality (E). Grammatical (E) sentences remained grammatical (E), and ungrammatical (E) sentences remained ungrammatical (E). For the intermediate group, 6/8, or 75%, of the grammatical sentences remained grammatical, while 26/33, or 78.8%, of the ungrammatical ones remained ungrammatical. For the advanced group similar results obtained: 8/10, or 80%, remained grammatical while 12/20, or 60%, of the ungrammatical sentences remained ungrammatical. As would be expected, this latter group was better at actual correction. Interesting to note is the decrease in incorrect changes in Group 1 as compared with Group 2 (25% to 20%), and the concomitant increase in corrections (21.2% to 40%). This may be interpreted as a greater ability by the more proficient group to "monitor" their own output (Chaudron, personal communication).

To summarize thus far, we have found:

1. Advanced learners judged fewer of their own sentences grammatical than did the intermediate learners.
2. From the point of view of English, the intermediate group was better able to accurately recognize their own grammatical sentences

than their ungrammatical sentences. The abilities of the advanced group are about equal in this area.

3. When considering only the group of sentences judged ungrammatical (L) and the changes made to those sentences, we found that those sentences which, from an English standard, were grammatical remained grammatical after the change while those sentences which, from an English standard, were ungrammatical remained ungrammatical after the change.

DISCUSSION

Bialystok's notion (1979, 1981) of two types of linguistic knowledge provides a framework for the discussion and interpretation of these results. She proposed that language proficiency involves a number of disparate skills which can best be investigated by considering the amount of control that a learner has over target language knowledge. Different information is required for different aspects of language use. Language information can be viewed along two dimensions: one is the *explicit/implicit* dimension, reflecting the learner's ability to view the language information as an abstract entity; the second is the *automatic/analyzed* dimension, reflecting the learner's ability to access the language information fluently and automatically (as opposed to with difficulty and deliberation). Bialystok further stated that simple grammaticality judgment tasks reflect information about implicit knowledge, but that additional tasks, such as correction of errors, reflect explicit analyzed knowledge. Following this line of argumentation, we see that in terms of implicit knowledge, as determined by the ability of these learners to recognize their own correct and incorrect sentences, there is little difference between the two groups (see Table 2). In other words, there is little change in terms of implicit knowledge as a function of proficiency. However, as we shall see, the situation is by no means the same for what might be termed explicit knowledge. To investigate the relationship between explicit knowledge and proficiency, it is useful to consider those sentences which were ungrammatical from an English standard, and which the students also designated ungrammatical, in order to see what sorts of corrections were made.

Sentences were first counted to see how many of the ungrammatical (E) sentences were actually marked ungrammatical (L). These results are presented in Table 5.

The intermediate group recognized as ungrammatical (L) 68% and the advanced group 68.9% of the ungrammatical (E) sentences. The next step involved looking at how many of the corrections made actually resulted in grammatical English sentences. As can be seen, for Group 1, 34 were correctly identified but only 7 of those were correctly changed. For Group 2,20 were identified as ungrammatical, with 8

TABLE 5
Recognition and Correction of Ungrammatical (E] Sentences

Group 1 (Intermediate)	
Total Number of Ungrammatical(E) Sentences	50
Number of Sentences Recognized as Ungrammatical (L)	34 = 68%
Of Those Sentences Recognized as Ungrammatical (L), Total Number Appropriately Corrected n = 331	7 = 21.2%
Of Those Inappropriately Corrected, Number of Sentences Which Came Close (i.e., targeted in on the incorrect area) n=26	7 = 26.9%
1 One student marked one of his sentences ungrammatical, but failed to make any corrections,	
Group 2 (Advanced)	
Total Number of Ungrammatical (E) Sentences	34
Number of Sentences Recognized as Ungrammatical (L)	20 = 68.9%
Of Those Sentences Recognized as Ungrammatical (L), Total Number Appropriately Corrected n=20	8 = 40%
Of Those Inappropriately Corrected, Number of Sentences Which Came Close (i.e., targeted in on the incorrect area) n=12	8 = 66.7%

of those being correctly changed. Thus, for the intermediate group there were 26 sentences and for the advanced group 12 sentences which had been identified by the learners as being incorrect and which had been "corrected," or so they believed, but which were still ungrammatical (E). Within this last group of sentences I counted the number of sentences in which the correction, while not resulting in a grammatical sentence, nonetheless came close to the trouble area. The example below will make this last category clearer.

Original sentence: *If I dare to choose one person, I would like to be a my teacher in my elementary school.*

Corrected sentence: *If I dare to choose one person, I would like to be the teacher of mine in my elementary school.*

In this particular example, one might speculate that the learner (a Japanese speaker) felt that there was something wrong with the

modifier, even though he did not know what the correct form should be. Within the intermediate proficiency group 7/26 (26.9%) of the ungrammatical sentences which were not appropriately corrected nevertheless had corrections which targeted in on the trouble area, while the more advanced speakers targeted in on 8 out of 12 (66.7%).

What is involved in recognizing an ungrammatical sentence as ungrammatical? Clearly it *cannot* only be a matter of recognizing the precise error and knowing how to correct it, for if this were the case there would not have been an error in the first place. It seems that learners have a general, what in German might be called *Gefühl*, "feel" (see Krashen 1976, Bialystok 1979, 1981) for the grammaticality of a sentence as a whole even though they cannot articulate precisely, nor even recognize, where or what the trouble area is.

As Bialystok notes, "sentences sound right for reasons that may be completely obscure and in these cases justifications for the decisions can rarely be found" (1981:37). The results presented here corroborate this finding. Sentences "felt" wrong to the students without their having an accurate idea of *why* they were wrong. It is suggested here that part of what is involved in becoming more proficient in a second language is the progression from more gestalt-like to analytical analyses. We might further speculate that indeed the analyzed aspect is a necessary precondition for fluency in an L2, more so than for an L1.[3]

We find, then, that there is not as great an increase in the *range* of *Sprachgefühl*, "one's feel for the language," as a function of proficiency as there is an increase in ability to pinpoint the trouble spot and to specifically recognize what is wrong. Learners' analyzed knowledge develops much more rapidly as a function of proficiency. A similar phenomenon has been noted for children. With regard to progression in learning, Gleitman, Gleitman, and Shipley (1972) have found that in relation to word order, children first learn to detect grammatical violations and only later to correct them. It seems that initially learners have a general feeling of what is right/wrong without being able to zero in on the precise nature of the error when there is one. We, therefore, suggest that learners are first able to make a gestalt-type analysis of sentence structure *before* they are able to make detailed analytic judgments (also see Reber and Lewis 1977).

3 The importance of analysis for L2 development has been suggested with regard to language transfer (Gass 1983, Gass and Selinker, in press). In considering the influence of the native language on L2 acquisition, I suggested that there may be two types of influence—one which is automatic and the other which requires more analysis and decision making on the part of the learner. Recent theories of transfer (e.g., Kellerman 1979, in press) suggest that transfer is a psycholinguistic process, based in part on learners' perceptions of language distance (between the L1 and the L2) and differences in language specificity/language universality. However, before learners are able to deal with perceptions of the type Kellerman has suggested, it may be the case that a certain amount of awareness or capacity for analyis is necessary.

At this point, we can set up a tentative description of the development of linguistic intuitions of second language learners. The initial stages represent the development of a generalized feeling of what is right or wrong. This continues to be refined so that more accurate assessments can be made. In other words, we note a gradual change from implicit to explicit knowledge, where explicit knowledge reflects a learner's ability to view the language as an abstract entity (but this does not necessarily entail the ability to explicitly state the rule and, in this sense, crucially differs from Krashen's [1976] concept of learning).

Weidner (personal communication) has noted a phenomenon for both native and non-native speakers similar to the one noted above. She has found that when people read their own compositions aloud they stumble or hesitate at points in which there is an error even though, when asked, they often are unable to state what the error is or how to correct it. She uses this as a technique for self-editing.

The findings of this study are corroborated by research on the composing process, research based on native speakers. In dealing with revisions in compositions, Bartlett (1982) found that there are essentially three stages which writers go through in correcting errors. First, they notice that there is something wrong. Second, they identify the kind of problem, and third, they correct the error. She notes that corrections come about only as a result of awareness (at some level) that something is incorrect. Moreover, it is explicit knowledge which is required to carry out the demands that are necessary for revising. These stages parallel the ones found in the development of intuitions in second language learners, where we have suggested that with an increase in proficiency comes a concomitant increase in explicit knowledge.

In a series of studies (Reber 1976, Reber and Lewis 1977, Reber and Allen 1978) subjects were asked to give acceptability judgments about strings of letters (varying from 3 to 8) which had been generated by a finite state grammar. After each trial and before the next, they were given feedback as to whether their responses were correct or not. While they could not articulate the rule system which governed their choices of acceptable/unacceptable strings, their responses did reach a high level of accuracy. This is perhaps akin to, the situation which non-proficient learners face. They have a generalized sense of *Sprachgefühl* (or, in Bialystok's framework, are using implicit knowledge), but lack the ability to either explicitly or even implicitly recognize the trouble spot.

Let us turn finally to what is perhaps the most interesting question, yet unfortunately the most speculative: what is the function of metalinguistic awareness for L2 learners? What purpose can we attribute to intuitions about an L2? As mentioned, the development noted in this study is not dissimilar to that which has been found for children.

Sinclair, Jarvella, and Levelt (1978) speculate that for children there may be at least two functions for linguistic awareness. According to them, the functions of metalinguistic abilities are the facilitative role they play in 1) face-to-face communication, and in 2) learning to communicate. In face-to-face communication the ability to think about one's language is necessary when failures in the communication have occurred. These conscious repairs can keep the conversation from breaking down even further. We may see this even in speaking (whether in an interaction or in a lecture-type situation). If the automatic procedures "break down, " we may begin to think more consciously about our speech to prevent any further deterioration. In other words, we pay closer attention to our speech in order to get us out of the impasse we have gotten ourselves into.

Sinclair, Jarvella, and Levelt (1978) further add that the ability to think about language may have a function in the acquisition proper of communicative skills. The evidence, however, is not conclusive. Read (1978) has shown that there is some deterioration in phonetic judgments as a function of age, but conflicting evidence comes from Zei (1979), who compared five and nine year olds in their abilities to explain the articulatory events used in speaking. Admittedly, the ability to explain articulatory events may be quite different from the ability to explain other aspects of grammatical knowledge. Nonetheless, the evidence is unclear as to what the precise functions of metalinguistic awareness are for children and what role it plays in acquisition.

Assuming, however, that Sinclair, Jarvella, and Levelt (1978) are correct that awareness serves a communicative function, we can hypothesize that it serves a similar function for adults. It allows learners to reflect upon the language and to make hypotheses about the target language and subsequently modify those hypotheses. In addition, it affords an opportunity to make comparisons between target language and native language and other languages the learner may be familiar with, allowing manipulation of the target language so as to avoid unfamiliar or difficult structures or to transfer potentially successful elements of the native language, as has been suggested by Kellerman (1979, and in press).

CONCLUSION

It is tempting to suggest implications from this study for classroom teaching. For example, if it is the case that advanced learners can more frequently identify errors which learners of other native languages have made than can intermediate learners (see Table 3: 87.5% vs. 12%), then the use of peer-editing techniques may be somewhat less appropriate for some proficiency levels than for others. Furthermore, if it is

the case that language learning develops from the whole to the detail, with learners first getting a general notion of structures (perhaps concentrating on meaning) and only later concentrating on discrete syntactic points, then there may be places in the curriculum where explicit grammatical instruction is conductive to learning and others where it is not. But still, specific recommendations concerning teaching are, at this point, premature and await research with a more pedagogical focus.

In conclusion, intuitional data, as a reflection of metalinguistic awareness, are important in second language research both in and of themselves for what they reveal about language learning, and also because they provide us with a crucial aspect of a learner's knowledge, an aspect without which we cannot hope to gain a complete picture of the second language acquisition process. ■

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REFERENCES

Adjemian, Christian. 1976. On the nature of interlanguage systems. *Language Learning* 26(2):297-320.

Adjemian, Christian. 1981. La spécificité de l'interlangue et l'idéalisation des langues secondes. In *Grammaire générative: théorie et methodologies,* J. Gueron (Ed.). Paris.

Arthur, Bradford. 1980. Gauging the boundaries of second language competence: a study of learner judgments. *Language Learning 30(1): 177-194.*

Bailey, Nathalie, and Carolyn Madden. 1980. Beyond grammatical morphemes: the effect of function on form. Paper presented at the 14th Annual TESOL Convention, San Francisco, March, 1980.

Bartlett, Elsa. 1982. Learning to revise: some component processes. In *What writers know: the language, process, and structure of written discourse,* Martin Nystrand (Ed.), 345-362. New York: Academic Press.

Bateson, Gregory. 1976. A theory of play and fantasy. In *Play—its role in development and evolution,* Jerome Bruner, Alison Jolly, and Kathy Sylva (Eds.), 119-129. New York: Basic Books.

Bewell, Diane, and Stanley Straw. 1981. metalinguistic awareness, cognitive development and language learning. In *Research in the language arts; language and schooling,* Victor Froese and Stanley Straw (Eds.), 105-121. Baltimore: University Park Press.

Bialystok, Ellen. 1979. Explicit and implicit judgments of L2 grammaticality. *Language Learning* 29(1): 69-83.

Bialystok, Ellen. 1981. The role of linguistic knowledge in second language use. *Studies in Second Language Acquisition* 4(1):31-45.

Burling, Robbins. 1973. Language development of a Garo- and English-speaking child. In *Studies in child language development,* Charles Ferguson and Dan Slobin (Eds.), 69-90, New York: Holt, Rinehart and Winston.

Carroll, John M., Thomas G. Bever, and Chava R. Pollack. 1981. The non-uniqueness of linguistic intuitions. *Language* 57(2) :368-382.

Cazden, Courtney. 1976. Play with language and metalinguistic awareness: one dimension of language experience. In *Play-its role in development and evolution,* Jerome Bruner, Alison Jolly, and Kathy Sylva (Eds.), 603-608. New York: Basic Books.

Chaudron, Craig. Undated. Language research on metalinguistic judgments: a review of theory, methods and results. Manuscript.

Clark, Eve. 1978. Awareness of language: some evidence from what children say and do. In *The child's conception of language,* A. Sinclair, R.J. Jarvella, and W.J. M. Levelt (Eds.), 17-43. New York: Springer-Verlag.

Corder, S. Pit. 1973. The elicitation of interlanguage. In *Errata,* Jan Svartvik (Ed.), 36-47. Lund, Sweden: CWK Gleerup.

Corder, S. Pit. 1978. Language-learner language. In *Understanding second and* foreign *language learning,* Jack Richards (Ed.), 71-93. Rowley, Massachusetts: Newbury House.

Eckman, Fred. In press. Universals, topologies and interlanguage. In *Second language acquisition and language universals,* William Rutherford and Robin Scarcella (Eds.). Amsterdam: John Benjamins Press.

Fowles, Barbara, and Marcia Glanz. 1977. Competence and talent in verbal riddle comprehension. *Journal of Child Language* 4(3):433-452.

Gass, Susan. 1979. Language transfer and universal grammatical relations. *Language Learning* 29(2):327-344.

Gass, Susan. 1980a. Variability in L2 experimental data. *Indian Journal of Applied Linguistics* 6(1):60-74.

Gass, Susan. 1980b. An investigation of syntactic transfer in adult second language acquisition. In *Research in second language acquisition,* Robin Scarcella and Stephen Krashen (Eds.), 132-141. Rowley, Massachusetts: Newbury House.

Gass, Susan. 1983. Interlanguage syntax: state of the art. Paper presented at the 17th Annual TESOL Convention, Toronto, March, 1983.

Gass, Susan, and Josh Ard. In press. Second language acquisition and the ontology of language universals. In *Second language acquisition and language universals,* William Rutherford and Robin Scarcella (Eds.). Amsterdam: John Benjamins Press.

Gass, Susan, and Larry Selinker. In press, Language transfer: a conference report. In *Interlanguage transfer processes in language learning,* Franz Eppert (Ed.). Singapore: Singapore University Press.

Gleitman, Lila, Henry Gleitman, and Elizabeth Shipley. 1972. The emergence of the child as grammarian. *Cognition* 1(2/3):137-164.

Gundel, Jeanette, and Elaine Tarone. In press. Language transfer and the acquisition of pronominal anaphora. In *Language transfer in language learning,* Susan Gass and Larry Selinker (Eds.). Rowley, Massachusetts: Newbury House.

Heeschen, Volker. 1978. The metalinguistic vocabulary of a speech community in the Highlands of Irian Jaya. In *The child's conception of language,* A. Sinclair, R.J. Jarvella, and W.J.M. Levelt (Eds.), 155-187. New York: Springer-Verlag.

Ioup, Georgette, and Anna Kruse. 1977. Interference versus structural complexity as a predictor of second language relative clause acquisition. *Proceedings from the Second Annual Los Angeles Second Language Acquisition Research Forum,* Carol Henning (Ed.), University of California, Los Angeles.

Kellerman, Eric. 1979. Transfer and non-transfer: where we are now. *Studies in Second Language Acquisition* 2(1):37-57.

Kellerman, Eric. In press. Now you see it, now you don't. In *Language transfer in language learning,* Susan Gass and Larry Selinker (Eds.). Rowley, Massachusetts: Newbury House.

Kleinmann, Howard. 1977. Avoidance behavior in adult second language acquisition. *Language Learning* 27(1):93-107.

Krashen, Stephen. 1976. Formal and informal linguistic environments in language learning and language acquisition. *TESOL Quarterly* 10(2): 157-168.

Read, Charles. 1978. Children's awareness of language, with emphasis on sound systems. In *The child's conception of language,* A. Sinclair, R.J. Jarvella, and W.J.M. Levelt (Eds.), 65-82. New York: Springer-Verlag.

Reber, Arthur S. 1976. Implicit learning of synthetic languages: the role of instructional set. *Journal of Experimental Psychology* 2(1):88-94.

Reber, Arthur S., and Selma Lewis. 1977. Implicit learning: an analysis of the form and structure of a body of tacit knowledge. *Cognition 5(4):333-361.*

Reber, Arthur S., and Rhianon Allen. 1978. Analogic and abstraction strategies in synthetic grammar learning: a functionalist interpretation. *Cognition* 6(3):189-221.

Schachter, Jacquelyn. 1974. An error in error analysis, *Language Learning* 24 (2):205-214.

Schachter, Jacquelyn, Adele Tyson, and Frank Diffley. 1976. Learner intuitions of grammaticality. *Language Learning* 26(1):67-76.

Schmidt, Maxine, 1980. Coordinate structures and language universals in interlanguage. *Language Learning* 30(2):397-416.

Selinker, Larry. 1972. Interlanguage. *International Review of Applied Linguistics* 10(3):219-231.

Sharwood Smith, Michael. 1981. On the status of language transfer. Paper presented at the Ontario Institute for Studies in Education, Toronto,

Sinclair, A., R. Jarvella, and W.J. M. Levelt (Eds.). 1978. *The child's conception of language.* New York: Springer-Verlag.

Slobin, Dan. 1978. A case study of early language awareness. In *The child's conception of language,* A. Sinclair, R.J. Jarvella, and W.J. M. Levelt (Eds.), 45-54. New York: Springer-Verlag.

Tarone, Elaine. 1982. Systematicity and attention in interlanguage. *Language Learning* 32(1):69-84.

White, Lydia. 1977. Error analysis and error correction in adult learners of English as a second language. *Working Papers in Bilingualism 13(1):42-58.* Toronto: Ontario Institute for Studies in Education.

Zei, Blanky. 1979. The psychological reality of phonemes. *Journal of Child Language* 6(2):375-381.

Zobl, Helmut. 1980. Developmental and transfer errors: their common bases and (possibly) differential effects on subsequent learning. *TESOL Quarterly* 14(4):469-482.