SUCCESSFUL AND LESS SUCCESSFUL SECOND LANGUAGE LEARNERS: DIFFERENCES IN HOW THEY PROCESS INFORMATION

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ABSTRACT

This article describes the first phase of a three-fold study carried out to teach less successful students the effective strategies used by successful students. The first phase consisted of an attempt to identify strategies used by successful students in their response to information contained in teachers' corrective feedback. Seven successful intermediate adult second language learners and seven less successful ones were asked to think out loud while they were engaged in conversational exchanges with their peers. Their protocols were then analyzed in terms of their responses to information. Elaborate operations for processing this information were found among successful students when compared to the less successful ones. It is suggested that the greater linguistic ability of the successful students could be partly attributed to these active operations.

1. Research Background and Concern

The goal of second language instruction is to provide learners with information about the workings of the new linguistic system that will enable them to function adequately in their second language. However, the effectiveness of second language instruction and of error correction have been debated by second language researchers, some of them questioning the value of instruction and error correction at all, and others crediting instruction and error correction with learning benefits.

Researchers who question the effectiveness of language instruction base their criticism on a number of studies conducted among both children and adults which show similarities between naturalistic and instructed second language learners. Studies conducted among children have indicated that, regardless of their linguistic background, formal instruction and the environment,

whether foreign or second language, children follow a similar order of acquisition of English morphemes (Dulay and Burt 1974, Burt and Dulay 1980, Dulay, Burt and Krashen 1982). This order has proved to be developmental rather than interlingual, reflecting the same error types as those made by children learning English as a first language.

Studies conducted among adults either in naturalistic or instructed settings showed structural parallels between the interlanguage of instructed students and naturalistic acquirers (Bailey, Madden and Krashen 1974, Larsen-Freeman 1976, Wode 1981, Dulay, Burt and Krashen 1982). According to these researchers, an acquisitional order of either a first or a second language is programmed by a language acquisition device (LAD) which is in operation in the human species regardless of frequency of input, of positive reinforcement and of environmental conditions.

On the other hand, researchers who credit instruction with some influence view its role as speeding up this universal acquisition process by inhibiting the use of ungrammatical constructions that may otherwise become fossilized. For instance, Pica (1983) conducted a study on adult second language learners in which she distinguished three acquisition contexts: naturalistic, instructed, and mixed, the last being a combination of classroom instruction and natural exposure to the target language environment. Among other things, Pica found that learners who had never received formal second language instruction tended to omit grammatical morphemes, such as -ing and plural -s, whereas classroom learners (and to a lesser degree and in later stages, mixed learners) showed a strong tendency to over-apply morphological marking of this kind. Other studies of a similar kind reported results that are quite comparable to these (Lightbown and Barkman 1978, Lightbown, Spada and Wallace 1980, Lightbown 1983).

To summarize, instruction is regarded by some researchers as of limited value given the presence of universal processing abilities, and by others as inhibiting fossilized forms, and thereby speeding up the process of language acquisition.

As for the role of error correction in promoting second language acquisition, researchers are similarly divided, some regarding it as influential and others seeing it as negligible. In naturalistic settings, most of the studies (Chun, Day, Chenoweth and Luppescu 1982, Day, Chenoweth, Chun and Luppescu 1984, Crookes and Rulon 1988) have indicated that only a small percentage (8.9%) of

non-native speakers' errors are actually corrected in conversations taking place in social settings. These corrections apply more to the truth value of an utterance than to discourse, vocabulary, syntax (tense, agreement, morphology, word order) and omission. Among these, discourse and vocabulary errors were more frequently corrected than errors in syntax and omission.

As for error correction in classroom settings, a few studies which have investigated learners' responses to teachers' corrections (Ramirez and Stromquist 1979, Salica 1981) reported that the isolation of the incorrect item by teachers, which is then repeated accurately with a declarative intonation, resulted in learners' incorporation of the corrected word into further speech.

In summary, the role of error correction in second language acquisition has been investigated in two settings: naturalistic and classroom. Most of the research conducted in naturalistic settings suggests that non-native speakers rarely incorporate corrections provided by native speakers, since these corrections tend to be limited to the truth-value of statements made by non-natives. In contrast, error correction provided by teachers in classroom settings which is made salient is found to affect accuracy of similar structures in learners' speech.

Taking this information together, it would seem that the role of instruction and error correction in the acquisition of a second language is still far from recognized. However, although divided on these issues, most researchers would hardly dispute the fact that some learners, whether in naturalistic or instructed settings, progress faster than others towards native-like fluency. It would appear that some learners find ways to speed up the natural acquisitional order by attending to information contained in their environment in more effective ways than other learners.

If, as according to contemporary cognitive psychologists (Scardamalia and Bereiter 1984), learning emerges from construction of information contained in one's environment, this may well explain differences among learners. Therefore, if more knowledge was made available on how this process of construction of information works for successful learners, it would then be beneficial to teach these operations to less successful learners and make them acquire a second language at a comparable rate.

This was the first purpose of this study, namely to provide a better understanding of the successful second language learners' responses to information contained in their environment. Given the ultimate goal of the study, which was to teach less successful students effective ways to respond to information, it was felt more adequate to investigate a classroom setting as opposed to a naturalistic setting. Among classroom practices, preference was given to teachers' corrective feedback for its highly informative content. More precisely, the focus of the study was on how effective learners process information contained in teachers' corrections when they are involved in conversations with peers. A communicative task such as conversation seemed particularly appropriate owing to its authenticity and to its potential for generating a high frequency of error correction and instruction.

2. Method

2.1. Participants

The participants were 14 anglophone adult volunteers - seven men and seven women, ranging in age from 20 to 35-enrolled in intermediate courses of French in the Continuing Education Program offered by one of the Community Colleges in Toronto. They had previously taken 2 courses - 84 hours - of French for beginners. Most of them had been exposed to French some years ago while in High School.

While half of them were successful students scoring between B+ and A, the remainder were less successful students scoring between D+ and C+. They were judged as such by their respective teachers on the basis of their previous linguistic proficiency scores which consisted of a global score on the ability of students to carry out some communicative tasks with accuracy and fluency.

2.2. Methodological approach

To capture students' mental operations while they were engaged in communicative activities, on-line reporting through thinking aloud was considered most appropriate. Although there have been criticisms of using verbal reports as data, concurrent verbal protocols are considered to be reliable, because the thoughts are verbalized at the time the information is heeded by the central

processor (working memory) (Nisbett and Wilson 1977, Ericsson and Simon 1984).

Students were informed by the investigator about the purpose of the study in these terms:

> 'Students use strategies when they are listening to their teacher's speech, to their teacher's explanations, to their peers' speech, and when they are producing the language. I'm very interested in finding what's going on in your mind during these activities. This information would allow me to identify the strategies you are using. Then, anytime you think of something, say it out loud in the microphone. I would like to know every thought that pops in your mind and I would appreciate it if you are consistent in voicing out loud these thoughts into the microphone in order to get a whole picture of your thinking. I will be reminding you throughout the sessions to do so.'

To ensure that students understood the process called 'thinking out loud,' the investigator met individually with each student who was equipped with a tape recorder and a microphone. A conversation was initiated by the investigator and students were prompted to voice their thoughts every time the investigator detected a puzzled look, a pause or hesitation. The training lasted approximately 15 minutes with each student, and was interrupted on occasion to have students listen to their tapes and assess the reliability of their recordings.

Upon completion of the training, students met in groups of 2, 3 or 4 with the investigator. They were equipped with individual tape-recorders and microphones, and were audio-taped for the duration of the sessions. One 2-hour meeting was held every week for a period of 5 weeks with different grouping combinations, amounting approximately to a total of 20 hours. Topics of discussion revolved around everyday situations, and on occasion, on controversial issues. Students were reminded often through these sessions not to forget to voice their thoughts into their microphone.

3. Results

3.1. Identification of successful students' responses

Note: To help understand the meaning of the signs that appear through the protocols, the following information is provided:

Invest. = Investigator
(non-addressed) = Student not addressed directly, but listens to the student who is given feedback.
() = Verbalized thoughts. This means the thoughts students speak out loud into their microphones.
Bolded words are words pronounced with extra stress.

1) Accurate repetition of new information provided to themselves or to peers with signs of understanding: Students who are given the information and the peers who listen repeat the information accurately and completely. They use expressions which show their understanding such as 'Okay!'... 'I understand'... 'It makes sense'... 'I remember now'...

Example:
Student: J'ai couché de bonne heure hier soir...
Invest.: Tu **t'es couchée** de bonne heure...
Student: (I remember now...) Oui, je **me suis** couchée de bonne heure...

2) Attempt at recognizing elements of information by identification of constructions: Students who are given the correction or/and the peers who listen to it try to identify elements of the correction.

Example:
Student: J'ai levé tard ce matin...
Invest.: Tu **t'es levé** tard ce matin...
Student: Oui, je **me suis levé** tard ce matin...
Student: (Reflexive verb...se lever...Okay!...Je **me suis levé**...)

3) Questioning two words similar phonetically but dissimilar semantically: Students are confronted with an interpretation of a word with which they are not familiar. Then, they rely on the context, and come to the conclusion that this word means something else.

Example:
Student: Pensez-vous que les femmes qui restent au foyer devraient recevoir un salaire?
Student: (Foyer...Fireplace?...Doesn't make sense here...We're talking about women who stay at home...Maybe foyer has two meanings...Let's check on that!...)

4) Re-use of unfamiliar material: Students try to use new information instead of just practising familiar material.

Example:
Invest.: Est-ce que tu pratiques des sports?
Student: Non, je ne pratique...(Wait....I got it...) aucun sport.

5) Attempt to identify unfamiliar elements in terms of metalinguistic categorizations: Students go beyond the contrasting stage and identify the problem in terms of metalinguistic statements.

Example:
Invest.: Est-ce que tu connais Graham?
Student: Oui, je...(Is it 'lui' ou 'le'?)...je lui connais...
Invest.: Tu **le** connais...depuis quand?
Student: (non-addressed) (Okay! Then, 'connaître' takes a complement object direct... 'connaître' qui...une personne.)

6) Search for meaningful associations to help discriminate between two competing forms: Students who are given a correction compare the two competing forms, the existing form and the corrected one. They then search for representations that are powerful enough to keep these two similar expressions separate.

Example:
Student: Je suis retourné à la maison vers 11:00 heures, hier soir...
Invest.: Tu es **revenu** à la maison vers 11:00 heures, hier soir...
Student: Oui, je suis **revenu** à la maison vers 11:00 heures, hier soir...
Student: (non-addressed) (Okay! It seems that **to come back...est revenir...et to go back** est...**retourner**...Let's check on that...)

7) Hypothesis-testing: Students perceive something inaccurate based on their existing knowledge of French. They then express their answer, state the rule which justifies their answer, and wait for the teacher's approval. In the case of disapproval, students question either their interpretation of the rule or their application of the rule.

Example:
Student: Mon amie est arrivée quand j'ai fait le café...
Student: (Should be 'je faisais'...since that she was in the process of making coffee...when her friend arrived...)
Invest.: Oh! tu **faisais** du café quand elle est arrivée...
Student: (Okay! I was right...Imparfait...)

8) Questioning the use of a certain type of structure as opposed to another parallel one: Students identify the structure used by the teacher, and question the choice of this structure over a parallel one that they would have spontaneously produced.

Example:
Invest.: Tu habitais Vancouver auparavant et tu habites maintenant Toronto...
Student: (non-addressed) (Imparfait...pas Passé Composé ... Pourquoi?)

9) Recognition of corresponding patterns in both languages and initial attempt at making rules: Students hear a structure that is completely different from the corresponding structure in English. They then retrieve another pair which matches the first pair and attempt to find out some rules which might govern these structures.

Example:
Invest.: Quand est-ce que tu vas te marier?
Student: Je vais me marier le mois prochain...
Student: (non-addressed) (To get married...Se marier...To get...Reflexive...To get dressed ... S'habiller ... Interesting... Let's check on that...)

10) Questioning the interchangeability of words of similar meanings in different contexts: Students who hear the use of an unexpected expression in a particular context wonder whether this could be replaced by another expression of similar meaning. Students investigate different contexts of use in which words of similar meaning could be exchanged.

Example:
Student: J'ai tourné la télévision...
Invest.: Tu as fermé le téléviseur...
Student: (non-addressed) Can we use also 'éteindre'? I know that we can use 'éteindre' pour lumière....

11) Complication of straightforward productions: Students attempt to complicate structures used by peers. They try to re-activate unfamiliar notions in place of something familiar, for the purpose of reinforcing unfamiliar or complicated structures.

Example:
Student: Je dois partir...
Student: (non-addressed) (Il faut que je m'en aille...)

12) Attempt to create rules on the basis of reliable evidence: Students are given additional instances of an already appreciable number of positive instances to confirm the existence of a rule. They then start making rules based on this evidence.

Example:
Student: Je suis allée à la natation...
Student: (non-addressed) (Okay! natation is feminine like association, présentation, révolution...It seems that names ending by tion are feminine...Let's check with other names...)

13) Re-activation of contrasting but related categories: Students hear a word belonging to a category and re-activate a contrasting category.

Example:
Student: C'est un chanseur...
Invest.: Un **chanteur**...
Student: (non-addressed)(un chanteur... masculin...une chanteuse...féminin... comme joueur...joueuse...)

3.2. Identification of less successful students' responses

1) Inaccurate repetition of all elements of teacher's corrections: Students do not reproduce the correction accurately.

Example:
Student: Je suis faite le badminton...
Invest.: Ah! Tu **as joué au** badminton...
Student: Oui, je suis joué le badminton...

2) Off-focus attention: Students express irrelevant comments instead of focussing on the correction.

Example:
Student: Ma mère a acheté des choses...mais je ne connais...
Invest.: Tu ne **sais** pas ce qu'elle a acheté...
Student: (non-addressed) (Oh! come on...)

3) No repetition of teacher's correction: Students who are corrected or peers who listen to the correction do not process the information. Their participation amounts only to a monosyllabic answer.

Example:
Student: J'ai levé à huit heures...
Invest.: Tu **t'es levée** à huit heures...
Student: (addressed) Oui, et j'ai habillé vite...
Student: (non-addressed) (Oui...)

4) Accurate repetition of teacher's correction: Students who are given the teacher's correction or who listen to it repeat the correction accurately. However, they do not give signs of understanding such as 1I understand...Okay!...I remember...'

Example:
Student: Ma mère a resté à la maison...
Invest.: Elle **est restée** à la maison...
Student: Elle **est restée** à la maison...
Student: (non-addressed) (Elle est restée...)

5) Acknowledgement by means of translation into English without any attempt at French.

Example:
Student: J'étudie le français hier...
Invest.: Tu **as étudié** le français hier...
Student: (non-addressed) (She studied French...)

4. Conclusion

According to students' protocols collected in this study, it appears that more successful second language adult students engaged in elaborate mental operations compared to less successful adult students. For instance, when provided with input by the teacher or by peers, whether input was delivered in terms of free conversation or corrective feedback, successful students were found to identify elements of information, to explore related forms, to establish connections between existing and new knowledge, to resolve discrepancies between these two sources of information, and to make up hypothetical rules. These students would practice mere

repetition of a teacher's corrections only when an understanding of the corrections had been dealt with. Usually, these repetitions were followed by signs of understanding such as 'Okay!...Yes, I remember...' They seemed unwilling to echo the teacher's corrections without having fully understood them.

In contrast, less successful students would only on occasion attend to input expressed outside of corrective feedback, for instance, to input contained in free conversation. Most of the time, they got distracted with off-task concerns, acknowledged a teacher's corrections rather evasively, and usually repeated them inaccurately or incompletely. At best, these students were found to accurately and completely repeat a teacher's corrections only in cases where the correction dealt with short lexical content. As soon as the correction extended to more complex grammatical knowledge, the repetition was not reproduced accurately and completely. On some occasions only did these students accompany or precede the repetition with signs of understanding. Less successful students were never found contrasting or identifying elements of information, establishing connections with existing knowledge or elaborating upon existing information.

Another difference between the two groups of students concerned the degree of attendance to their peers' speech or to corrections given to their peers. Successful students seemed to treat information provided to peers the same as information addressed to them by the teacher in terms of levels of processing. In contrast, less successful students attended to corrections given to peers only on occasion and their participation was usually limited to repetition of corrections.

The study has also demonstrated that instruction and error correction could make a difference providing that learners act upon information in a constructive way. From this perspective, it might be argued that although a developmental order is inherent in acquisition, students who are instructed in constructive operations may succeed in accelerating this ordered process and in developing more native-like proficiency.

It also became clear throughout the study that successful students were using high levels of 'construction' of information, with some operations being more 'constructive' and learning-oriented than others. For instance, the identification of elements of information seems to be more conducive to qualitative learning than the repetition of elements of information, and the search for

contexts of transfer of information being still more conducive to learning than the identification of elements of information.

A scale of qualitative learning or of increasingly more constructive processes then became observable and constituted the second phase of the dissertation. The third phase consisted in developing instructional packages based on the scale elaborated in phase two for the purpose of helping less successful students upgrade their responses to instruction and error correction, whether these are provided to themselves or to their peers.

ACKNOWLEDGEMENTS

A more thorough account of this research appears in my doctoral dissertation (Corbeil, 1989). I am grateful to Marlene Scardamalia and Merrill Swain for their invaluable supervision and encouragement at all phases of my dissertation. I also acknowledge the helpful suggestions of two anonymous reviewers of this article. While conducting this study I was supported by the Social Sciences and Humanities Research Council of Canada's doctoral fellowships # 452-86-1074 and # 453-87-1038.

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