



**The Linguistics Journal**

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## **Foreword**

In the November edition of the Linguistics Journal we are pleased to present six articles from various areas of the world. Congratulations are extended to all the authors in this edition who have successfully negotiated the review procedure.

The first, by Camilla Vizconde from the Center for Educational Research and Development and the University of Santo Tomas in the Philippines, investigates student teacher attitudes towards English as the language of instruction in science and mathematics as classes. Through the qualitative analysis of interview data with teacher trainees in two teacher training institutions, Vizconde reveals that there are difficulties in following the government policy of bilingualism. Most respondents show preference for the “alternate use of both Filipino and English inside their classrooms” which runs contrary to government stipulation that English should be the only medium of instruction in such classes. Vizconde concludes that whilst student teachers recognize the importance of English, Filipino should be viewed as a valuable “support language.” This small-scale study has far-reaching implications for the current bilingual policy in science and mathematics programmes in the Philippines.

The second paper comes from Dr. Francesco Cavallaro at Nanyang Technological University, Singapore. His paper puts forward the proposal for a methodological triangulation in investigating the language dynamics of the Italian community in

Australia. This highly reflective account of research into an ethnic minority illustrates the necessity to choose methods of enquiry which suit the context of the study. Cavallaro shows how the combination of diary keeping, participant observation, questionnaire and tape-recording can successfully help the researcher gain better insights into language dynamics in settings where different levels of formality exist.

The next paper is by Dr. Raphiq Ibrahim, a cognitive and neuropsychologist at Haifa University and Rambam Medical Center in Israel. His research investigates languages with cognate relationships, Arabic and Hebrew, and asks whether there are advantages of this knowledge for Arabic Hebrew bilinguals in second language acquisition. Ibrahim's study is based upon lexical connections between translation equivalents and suggests that "cognate words that have phonological overlap can influence the recognition of translation equivalents." The study makes use of the comparison between repetition priming effects (reaction times and accuracy measures) and translation equivalents in Modern Standard Arabic (MSA) and Hebrew. It concludes that the "strength of the lexical associations between translation equivalents is influenced not only by the frequency of concomitant use but rather by their cognate status."

Dr. Mina Rastegar from the University of Kerman in Iran looks at "causal modeling – path analysis", a new statistical trend in applied linguistics. This fascinating paper critically analyses this method of enquiry and argues that it is "the best statistical option to use when the effects of a multitude of L2 learners' variables on language achievement are investigated in one study" since the causal models can effectively explain the hypothesized variables. Rastegar puts forward the case for the replacement

of traditional linear correlation with that of the new causal modeling – path analysis technique.

Dr. F. Sadighi and Mr. S. Zare from Shiraz University in Iran present a case study of Iranian EFL learners and ask whether background knowledge influences listening comprehension in TOEFL. In this paper, the researchers activated the pre-listening topic knowledge of an experimental group. In their statistical analysis of the ensuing data from the experimental and control groups, findings shows that background knowledge did actually improve listening scores. This study is a highly reflective account of a research process which can be effectively replicated in different settings.

The final article by Ms. Jing Liu, Dr. Tindall and Dr. Nisbet from Regent University in the U.S.A. looks at the use of English plural forms by Chinese learners. This study outlines some of the difficulties commonly experienced by Chinese students taking EFL courses, providing the reader with useful insights into their linguistic origins in the Chinese language. The authors provide a number of practical teaching recommendations to address this problem.

We hope you enjoy the diversity presented in this end of the year edition of The Linguistics Journal and look forward to your own contributions.

**John Adamson, Ed.D.**  
**Senior Associate Editor**  
**The Linguistics Journal**



## **Attitudes of Student Teachers towards the use of English as Language of Instruction for Science and Mathematics in the Philippines**

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### **Abstract**

This qualitative study aims to describe the attitudes of science and mathematics student teachers towards English, which is one medium of instruction together with Filipino, in the Philippines where a bilingual policy is being implemented. Through interviews conducted with sixteen student teachers from two leading teacher training institutions in the Philippines, the findings yield that student teachers have difficulty in adhering to the bilingual policy of education. Through the analysis of the interview transcriptions, the findings show that the majority of the student teachers prefer the alternate use of both Filipino and English inside their classrooms, which defy the actual designation of media of instruction. As science and mathematics teachers, English should be the *only* medium in their classrooms. Most argue that concepts and topics taught are not comprehensible to students when taught in English. Student teachers, though agreeing that English is necessary in teaching their subjects, suggest that Filipino be used as a support language

in the science and mathematics classes. These results have great implications in the present implementation of the bilingual policy as science and mathematics teachers have determined through their shared experiences that the use of English only in their classrooms has not been effective and productive in the long term.

**Key Words:** bilingual education, attitudes, student teachers, medium of instruction

**Human beings by changing the inner attitudes of their minds, can change the outer aspects of their lives.**

*William James (1842-1910)*

## **Introduction**

The need to be proficient in the use of English among non-native speakers has become a global phenomenon. Today, educators are faced with the challenge of addressing the needs of the growing number of students whose primary language is not English (Gibbons, 2003). While mastering other skills and content in other subject areas, there is the necessity for these learners to gain proficiency in English.

It is surprising to note that even in the United States of America where immigrants continue to increase in number, studies show that this is a predicament (Berriz, 2006; Spanos, 2006; Reyhner & Davison, 1992). Public schools in the U.S. have been developing instruction for their students learning English as a second language for the past 25 years and the challenge has remained. One such strategy for instruction identified by Blake and Van Sickle (2001) is code-switching from the local dialect to standard teaching, which seemed to work well as the students improved their academic

achievement in science and mathematics. This may not be true, however, for other states which do not adhere to code-switching and find immersion or sheltered-approach as workable (Rossell, 2005). The quest for the “right” approach seems elusive as they continue to experiment with other formulas to meet the growing and changing needs of learners.

In South Africa, Miller, Bradbury and Pedley (1998) studied the academic performance of students in mathematics and English. Their findings show that the second language, which is English, rather than being the direct cause of under-preparedness of university students, serves to compound or exacerbate a more fundamental educational or cognitive problem. Mathematical concepts are acquired through language and the problem arising from the use of the language has truly affected the learning of these concepts.

Although there are rich sources of data for English as a Second Language across the curriculum, there is still a dearth in literature concerning the use of English in science and mathematics teaching. The need to answer the challenge of both attaining mastery of the content and the English language is an issue that science and mathematics teachers should address. Furthermore, do they really believe that being proficient in English would help them teach science and mathematics effectively?

The attitudes of teachers come to the fore as they reflect upon the language that they use in teaching. Consciously or unconsciously, their attitudes play a crucial role in language’s “growth or decay, restoration or destruction” (Baker, 1988). Their attitudes,

too, as part of their cultural orientation, influence heavily their younger students (Shameem, 2004). What kind of attitudes towards English should teachers have in order for them to teach science and mathematics concepts successfully? Can these attitudes be reflected even during their student training period? What attitudes do student teachers have towards English as their medium of instruction?

The student teachers in science and mathematics have to be equally prepared to perform their tasks not only by mastering their own subject area but also by achieving competence in the use of the medium of instruction. Learning science and language arts is reciprocal (Casteel & Isom, 1994). Language is an indispensable tool in the promotion of learning. Designated as a second language in the Philippines, English takes the central role of bridging knowledge and skills in mathematics and science to learner competency in these areas. The teacher's preparation should not just be in terms of knowledge and skills in their specialization but also in their attitude towards the tools that they will use in teaching their subjects. Attitude towards the use of English as a medium of instruction plays a significant role in determining the success of the science and mathematics program of the schools, hence this investigation.

### **Review of related literature**

Studies regarding attitudes towards a certain language are quite numerous. Gardner's contribution in the understanding of attitudes and its relation to language teaching and learning, however, cannot be ignored. Gardner's studies in language attitudes and motivation have been cited by professionals and experts in language acquisition (Ellis, 1985; Spolsky, 1989; Romaine, 1995; Cook, 1996; Hashimoto, 2002; and Kamhi-Stein,

2003). Gardner (2001) proposes that the teacher must have the training, personality characteristics, and ability to teach the fundamentals of the language to the students. Not only that, teachers must encourage students to learn the materials and most importantly, use them.

Initially, a questionnaire to investigate attitudes had been employed. However, it failed to reveal unconsciously held or socially undesirable attitudes (Hamers & Blanc, 1989). As other researchers became interested in the concept of measuring attitudes, more refined types of measurement emerged. Romaine (1995) cites the advantages of using a questionnaire as facility in the distribution and collection access to a larger number of respondents and ease in comparison and analysis of information/data gathered. Baker (1988) mentions further, several types of techniques in measuring an individual's attitude, namely: Thurston and Chave, Likert, Guttman's Scalogram Analysis, the Semantic Differential Technique, the Repertory Grid Technique, Factor Analysis and Sociometry.

One of the most popular techniques was Lambert's matched guise test (Cook, 1996). This technique presents tape recordings to bilingual speakers who are asked to evaluate the speaker based on the scale, which describes certain personality traits (e.g. good/bad, pleasant/unpleasant, etc.) The judge does not know that he is being presented the same speaker who spoke both languages on tape. Since the speaker does not change, it is assumed that the judgment made will solely be based on the personality traits. When used for French/English bilinguals, results of Lambert's findings showed that both French and English judges perceived English as more favorable than French.

Warden and Lin's (1998) study of Taiwanese students' attitudes made use of the Likert type scale combined with open-ended questions. The study revealed that the past learning processes affected the perspectives in English learning and the fears of the students. Since the study was conducted among non-EFL majors, the findings show that different language skills, teaching methods, interests and outlook affect the attitudes of the students towards the English language. The study suggested the adoption of a variety of methods that would meet the needs of the teachers and students.

Using direct and indirect measures of attitude (subjective vitality questionnaire and a matched-guise instrument), El-Dash and Busnardo (2001) conducted a study on Brazilian attitudes toward English. Results reveal that the majority of adolescents favor English to the Portuguese language in terms of status and solidarity. Favoring the English language over the native Portuguese is attributed to the general perception of English as a prestigious international language and as symbolic use among adolescent peer group.

In the field of reading, a study by Kamhi-Stein (2003b) suggests that the reader's views of their home language and beliefs about reading may play an important role in reading. In her study of college readers in Spanish and English, findings show that attitudes seem to affect the reading behavior of the participants. In a third study conducted by Borromeo-Samonte (1981) on the attitudes of Filipino college students towards English, results show that the students favor English. The students' attitudes were influenced by their integrative motivation as they can easily identify themselves with the culture. Student performance and attitudes were influenced by motivation. The

study also showed that the attitudes were conditioned by the choice of profession/vocation, age, teacher influence and peer group influence.

Similar studies in the Philippines made by Amamio (2000) on attitudes of students, teachers and parents toward English and Filipino as media of instruction provided an interesting comparison. Students and teachers prefer the use of English as the medium of instruction with the teachers finding English as a more comfortable language for explaining ideas and concepts. Teachers further noted that English is an intellectualized language and a valuable tool to source information technology. However, the parents preferred Filipino because “it is a language in which they can think and express themselves” and it is a language that they understand and through which they themselves are better understood.

In sum, research regarding language attitudes has yielded information that is valuable in determining the language to be used as the medium of instruction. It would benefit the teachers and the policy makers to identify the attitudes of teachers towards the language they use in their fields of specialization.

### **The present study**

This research endeavors to address the following questions: 1) What attitudes do student teachers have towards the use of English as medium of instruction in teaching science and mathematics? 2) What implications may be deduced from the respondents' collective attitudes towards English as the medium of instruction for science and mathematics in the light of the Bilingual Policy of the Philippines?

## **Method**

### ***Respondents***

A total of nineteen (19) pre-service teachers from the government and private schools were purposively selected for the study. As observed by Patton (2001), limiting the number of respondents in qualitative studies is not aimed at generalizing but clarifying the idea. The schools were chosen on the basis of graduates' performance in licensure examinations for teachers. These teacher-training institutions have consistently produced graduates who pass the licensure examinations thereby placing the schools in the top performing institutions. The teacher training supervisor provided respondents from the state university while their supervising teachers favorably endorsed those from the private university. Student teachers were only allowed to undergo the interview during their free time. Respondents came from the state university (32%) and the private university (68%). A majority of the respondents were female (84%). Of the respondents 74% graduated from secondary education in private schools, while 26% finished secondary education in government or public high schools. Fifty-eight percent (58%) took science as their field's specialization in the tertiary level while the rest specialized in mathematics (42%).

Based on the *robotfoto* (a Dutch term which means a cartographic sketch of the respondents, Kelchtermans & Ballet, 2002) given to the respondents before the actual interview, the majority of respondents used Filipino (74%) as the language spoken at home while English and Filipino (53%) were widely used in school. In terms of language preferences, the majority of respondents seemed to be inclined towards movies (79%), magazines (89%), books (79%) and newspapers (79%) in English.

### ***Procedure***

Qualitative in nature, the study made use of *robotfotos* and actual interviews as main tools for gathering information. First, the respondents were asked to answer the *robotfoto* and were invited for an interview. The interviews lasted for a minimum of twenty to forty-five minutes per respondent. The interview guide questions are presented in Appendix 1. These questions were formulated based on an intensive related literature review.

The interviews were semi-structured in nature to allow the researcher to clarify and probe deeper into the answers of the respondents. Respondents could choose Filipino or English as their medium of expression and they were asked to state without inhibition their opinions and comments regarding the questions. Before the actual interviews, respondents were informed that the exchanges were to be tape-recorded. All interviews were done voluntarily and the respondents were assured of the confidentiality of their answers.

### ***Data Analysis***

Data from the recorded interviews were gathered and transcribed carefully. Answers were categorized into two main classifications: positive and negative attitudes towards the language and the persons using the language. Results were reviewed and analyzed thoroughly by reading the transcriptions. The data were then summarized and interpreted.

## Findings

### *Concept of English*

Respondents generally thought of English as a universal language that is used in communicating their thoughts and ideas. They also related it to some concepts like grammar, vocabulary and speech. A few considered it difficult as they perceived it to be a challenge and “very hard”. As indicated in Table 1, respondents from the public and private schools did not differ much in their responses as both referred to components of the language.

**Table 1: Perception of the word: English**

Respondents from Private Schools	Respondents from Public Schools
“language expressing thoughts...”	“Universal language...”
“Vocabulary words...”	“English is a second language.”
“Language”	“...anything that’s English”
“Language for communication”	“speech..”
“Hard because I’m not good in grammar”	“...medium of instruction”
“Universal language”	“...classic literature, essays, short stories...”
“Challenging”	
“Grammar”	
“Very hard”	

### *Attitudes towards English as a Language*

The majority of respondents gave English an important status in the country. Some of them valued English highly because it is used for “business, transaction and

communication with foreigners”. One respondent seemed to relate the ability to speak the language with the socio-economic status of the speaker. It suggests that if one knows how to speak English, one comes from the upper class in the society. Another respondent suggested that knowing how to speak the language relates to intelligence. Fifteen percent (15%) of the respondents believed that it is the language of the educated.

Three respondents believed that English has the same status as that of Filipino though each clarified later on what was meant by equality. One stated that though both languages have the same status, English seems to be the language of the upper class. Another revealed that one should “know first your language before you study another language such as English”. One seemed to be practical in saying that both languages enjoy equal status since there are mathematical and scientific terms that cannot be translated in Filipino, thus, Filipino is seen as a substitute for English. On the other hand, when students have difficulty understanding English explanations and discussions, Filipino comes in handy for translation. The majority of respondents agreed on the necessity and utility of the English language.

### ***Attitudes towards users of English***

Most of the respondents had positive attitudes towards fellow Filipinos who use the English language in a place beyond the home as indicated in Table 2. Respondents agreed that fluency in the English language signifies success in profession and society. Fifteen percent (15%) or three respondents said that they admire these people. The respondents seemed to admire these users because they see the advantage of the use of

the language at home and in school and some compare their communication skills and found themselves inadequate.

A great number also attributed the ability of the speakers to use English well to their upbringing at home. The perception was that these people are trained to speak English well at home and in school and so develop fluency in speaking the language. In addition to this, Filipinos who speak English well were taught the language since they were children. The respondents also seemed to relate this ability to speak English well to success in life and having better chances of working in other countries.

Initially, some respondents reacted negatively, but after careful probing, they clarified that their answers associated this negativity with their insecurity in speaking the English language. Other respondents thought that non-native speakers who use English at home and in places beyond the school want only to impress other people with their competence in the language. They perceived these users to be “maarte” (exaggerated) and “OA (overacting)”.

There was only one respondent who did not have any thoughts at all regarding these English users since his response is “Wala, wala. (None at all)”.

**Table 2: Attitude towards the user of English at home and in school**

Positive Attitudes	Negative Attitudes
<p>“Magaling po sila” (They are good.)                      “...excel more in outside the country, they have better chance”</p>	<p>“I think they’re trying to impress their, yung mga kausap nila.”</p>
<p>“Okay, that way they can develop more yung speaking in English.”</p>	<p>“Okay lang pero parang ‘funny’ at home kasi you’re suppose to speak the Filipino language.” (It’s okay but it seems funny to be speaking the language since you’re supposed to speak Filipino at home.)</p>
<p>“They have better edge.”</p>	<p>“I feel insecure kasi parang gusto nilang maging successful.” (I feel insecure because they want to be successful.)</p>
<p>“Magaling sila....kasi pinalaki silang ganoon.” (They are good because they were brought up that way.)</p>	<p>“Parang OA. Depende sa place.”</p>
<p>“I admire them because it’s hard for me to speak in English.”</p>	<p>“Maarte if they use it in public places.”</p>
<p>“Para bagang well-trained. Lalo po yung pinanggalingan nilang school o yung family.” (They seem to be well trained. Especially from those school or family.)</p>	
<p>“There’s nothing wrong about it as long as you can manage and you can communicate well with other people.”</p>	
<p>“Nature noong kinalakihan nila.”</p>	
<p>“Advantage. Magagamit po sa bahay at sa school” (It can be useful at home and in school.)</p>	
<p>“I admire them and I consider them educated.”</p>	

**Use of English in Science and Mathematics**

All of the respondents were positively inclined towards the use of English in teaching science and mathematics as shown in Table 3. They agreed that English is the language of science and mathematics because all materials that they use are written in English.

They also stated that scientific and mathematical terms are very difficult to translate in English and that there is an abundance of terms that do not have any equivalent terms in Filipino.

**Table 3: Use of English in Science and Mathematics Subjects**

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- “English is a must in teaching science and mathematics.”
  - “Mahirap po talaga kasi mahirap mag-explain sa students” (It’s difficult to explain to students) “May terms na di mo talaga ma-express sa English” (There are terms which cannot be expressed in English.)
  - “I agree that English should be used in teaching science and mathematics because there are terms which cannot be explained in Filipino, that only English term can describe.”
  - “I think we should use English because science is usually published in English.”
  - “Sa Science, it’s okay... maraming words na hindi pwede i-translate.” ( In science, it’s okay... there are many words, which cannot be translated.)
  - “It’s much better to use English kasi if we use our language, Filipino, more complicated.” (It’s much better to use English because if we use our language, Filipino, more complicated.)
  - “We should use English in explaining.... but we can use Tagalog so that students will understand.”
  - “English should be used as a medium of instruction provided that in explaining terminologies, the processes in mathematics, we must use Filipino.”
  - “It’s good.”
  - “In English but I don’t think it should be that strict.”
  - “Dapat English ang gamitin.” (English should be used.)
-

The findings show that respondents suggested that both languages be allowed as media of instruction for teaching these content subjects. Moreover, fifty eight percent (58%) suggested that the bilingual policy, which is presently implemented, indicated the use of Filipino as an alternative medium of instruction for science and mathematics. Forty two percent (42%) agreed on the retention of English as the only medium of instruction. Two participants maintained the use of English but suggested for the improvement of English language training of the future teachers handling science and mathematics subjects.

Findings reveal that exposure to the English language of these teachers would truly be advantageous. A hundred percent of the respondents suggested several options for teacher development. Twenty-six percent (26%) cited reading English books and magazines as an effective measure in acquiring new English vocabulary. Attending seminars, workshops, trainings and enrolling in English courses are suggested by thirty seven percent (37%) of the participants. Thirty seven percent (37%) opted for actual practice and use of the English language inside and outside the classroom as constructive in gaining fluency.

## **Discussion**

There are four clear areas which this study has focused on: the concept of English, the attitude towards English as a language, the attitude towards users of English and the use of English as medium of instruction for science and mathematics. The last area under investigation can provide great implications for the present Bilingual Policy of the Philippines.

First, historically, English has proven to be the language which most Filipinos have favored. The fact that it has remained steadfastly as the official language in spite of the fact that the Philippines is no longer under American rule, has supported this finding. In the study by Tupas (2003), it is pointed out that language stalwarts like Sibayan and Gonzales of the Philippines, recognize the continuing status of English in the Philippines and detail its use as follows: 1) English as a social stratifier; 2) despite the bilingual education in Filipino and English, all rewards are accrued due to English; 3) the Filipino elite continue to hold on to their power partly through English; 4) it is from the English – competent economic and political elite that the leaders of the country are most likely to emerge.

As the Philippines recognizes the need to establish the national language, Filipino, English has remained resolutely a popular language. In fact, Cruz (2004) stated in his recent newspaper column that even at this time, most of the official notices, laws, court decisions, bar and board examinations and even the Constitution, are published mostly in English.

At some point, English seems to be a “more” official language than Filipino as the latter is still in the process of establishing its status after having been established just recently to include some words from major regional dialects all over the country. What is clear though is that English is a language that continuously enjoys a more privileged status in the Philippines.

Second, the concept of English among the respondents suggests their attitudes towards the English language. Admittedly, respondents have positive attitudes towards the language. With this attitude, a language is most likely to flourish as indicated by Hohental (2003) and Choi (2003).

Third, English language users are perceived to belong to the middle and upper bracket level of society. Similar to some Asian countries, the Philippines seems to have accrued to the idea of private schools affording to provide better training in English than public or government schools. Nunan's report (2003) on global English in Asia, asserts that children who can be offered private and tutorial lessons have better chances in learning English than those who are sent to public schools as in the case of China. This is also alluded to in the same findings of Tupas (2003) that in reality, English seems to be a social stratifier in the Philippines. Most Filipinos may have high regard for English and they believe that Filipinos who speak this language very well belong to the upper crust of the society where the language is the medium even at home.

The last point to be considered is the implications of the attitudes of the users towards the use of English as the designated language for science and mathematics as specifically spelled out by the Restructured Basic Education Curriculum (RBEC) in adherence to the Bilingual Education Policy. The choice of English as medium of instruction was anchored on the content-based approach.

Ting (2003) suggests that legislation often precedes change in language-use behavior and language attitudes but it has to be put on-hold until people are more

receptive to the use of the desired or target language. Shameem (2004) agrees that decision on effective language use will continue to be made by policy makers and teachers who act instinctively and as their attitudes dictate unless language education is taken seriously. Nunan (2003) alarmingly writes that a number of Asian countries invest a great deal of their resources in English learning often at the expense of the curriculum but evidence suggests that they have not achieved fully the desired results. It is suggested therefore that language planning and policies should consider attitudes of the language users, more particularly, the teachers and the learners who would be the beneficiaries of the policies. Beyond legislation and policy-making, research on English language teaching in particular (as in the case of the Philippines), not in general, should be meticulously satisfied.

### **Conclusions**

Responses gathered by means of *robotfotos* and interviewing have revealed insights into the attitudes and perceptions of the use of English by student teachers in the teaching of science and mathematics in this study in the Philippines. As the designated medium of instruction, English takes the forefront for teachers who are not necessarily specialists in the English language but are users for the benefit of teaching their subjects. Mantle-Bromley (1995) believes that without teacher efforts, student attitudes may become less positive. This was further corroborated by the findings of Wright (1999) that teachers, as inside-school factors, have a strong perceived influence on student attitudes.

These findings have been similar to Pascasio's (2002), where research revealed that proficiency affects language attitudes to both English and Filipino. Both fluent and non-fluent speakers of English and Filipino have positive attitudes towards English, and those who are more proficient in English have more favorable attitudes towards English and Filipino than those who are less proficient.

Though generally, the respondents adhere to the use of English, the findings suggest that they do not necessarily agree with the sole use of English as the medium of instruction. Respondents are inclined to use Filipino every now and then in instances where they feel that students do not comprehend the topics very well. Respondents assume that the comprehension of the students is highly dependent on the language use. The findings suggest that English terms in science and mathematics are difficult and it is the understanding of the lessons through discussions and exemplification using the English language that seems to pose the problem.

Most respondents realize the necessity of the science and mathematics teachers as facilitators of language learning in the classroom. By using language arts skills of speaking, listening and writing, teachers can identify students' scientific understandings (Akerson, 2002). Student teachers seem to agree in principle that this should be so. The findings suggest that respondents concede that English is a necessary language in teaching science and mathematics. They seem to consider English as necessary since terms in science and mathematics are all in English. Materials in the form of textbooks and reference books are also written in English. Difficulty in translating these terms in the native language is a great dilemma for most of them. The majority agrees that it is a

very important language at present since this world has become “borderless”. Respondents seem to admit that knowing how to speak English is an advantage.

However, the study also reveals that the implementation of language policy is yet to be fully realized. The goal of producing individuals who are proficient in both Filipino and English has yet to be attained even at the level of higher education. The majority of the respondents use Filipino in teaching their lessons because they point out that this is the only way that students will be able to understand the lesson. Students, they argue, comprehend the lesson better or only, when they use Filipino. At some point, the bilingual policy was even a point of confusion for some respondents who defined it as the actual use of both languages inside the classroom. This is quite in contrast with the existing policy that clearly states the scope and limitations of English and Filipino use.

The attitudes of the respondents towards the language and its speakers can be taken positively. Pascasio (2002) revealed that language use and positive attitude are important in achieving language proficiency. There is a great possibility that Filipino student teachers believe in the capacity of the English language in making their students learn. However, it is suggested that in language and curriculum planning, teachers from various disciplines, most especially in this case, language teachers and content-subject teachers should be consulted. Using the content-based approach in the curriculum, planners and implementers should be guided by the principles of collaboration and teamwork. Language is not taught and learned solely for its sake. For students who are learning ESL in English-medium schools, English is both a target and a medium of

Education: They are not only learning English but are learning through it as well (Gibbons, 2003).

Language is a tool for all teachers. Its use should be guided by actual observations and practice of the classroom teacher. It is argued that only by exploring and understanding the distinct communities that ESL (English as a Second Language) and science teachers belong to, can we begin to understand how teachers can negotiate shared understandings (Arkoudis, 2003).

Although the study was limited to nineteen respondents from two institutions, further studies can be undertaken using respondents in other teacher-training institutions across the country for more conclusive databases. Areas for further studies include: To what extent does attitude affect learning? What positive attitudes should be developed among content subject teachers towards the medium of instruction? What are the implications of a positive language attitude towards the attainment of effective learning? As teachers and researchers, there is a necessity to probe deeper into these questions.

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### **Appendix 1: Guide Questions for the Interview**

#### A. Thoughts on the English language

1. What comes to your mind when you hear the word “English”?
2. When do you use the English language?
3. What do you think of Filipinos who speak English well in school and at home?
4. What do you think of people who use the English language in a place beyond school?
5. What do you think is the position of the English language in our culture?
6. Should all Filipinos learn how to speak English?
7. What do you think of Filipinos who try hard to speak English?
8. When is the right time or place to speak English?
9. Is it important to use English in oral communication? Written communication? Why?

#### B. Attitudes towards English as a Medium of Instruction in Teaching science and mathematics

1. What can you say about the statement: “All teachers are language teachers”?
2. What is your opinion about the use of English in science and mathematics?
3. Are you familiar with the use of English as the designated language for teaching science and mathematics?
4. Can Filipino as a language ever replace English as a medium of instruction in teaching mathematics and science?
5. Will you appreciate the English language better when taught by a native speaker?
6. Do you think you will be a more effective and credible teacher if you use English in teaching your subject?
7. Do you think that students understand you more when you speak in English?
8. If not, do you think it is more effective to speak the native language when students seem

not to understand the subject?

9. Give your comments about teachers who speak Filipino in a science and mathematics class.
10. What are your comments regarding teachers who speak both in Filipino and English during the science and mathematics classes?
11. What affects your communication skills in English?
12. In what way have you developed your communication skills in English?
13. What can you say about teachers who have difficulty in using the English language inside and outside the classroom? In what way do they affect the extent of language learning of the students?
14. What suggestions can you give to teachers who cannot speak English well during science and mathematics classes?
15. When should teachers be allowed to speak English or Filipino in teaching their subjects? How about the students?
16. What policies should govern the use of English and Filipino as medium of instruction in teaching science and mathematics?



## **Language Dynamics of an Ethnic Minority Group: Some Methodological Concerns on Data Collection**

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### **Bio Data:**

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### **Abstract**

This article presents an analysis of the methodology used in sociolinguistic research. Reference is made to a preliminary study on the language dynamics of the Italian community in Australia carried out to identify the methodology necessary to obtain naturalistic data in four different contexts. In the study, four different methods were trialed: diary keeping, participant observation, questionnaire and tape-recording. One of the starting premises of this pilot study was that one method could be chosen to carry out the main study. However, since the data needed to be collected in four different contexts, each with varying degrees of formality, the study identified that certain methods were not compatible for differing situations. This paper points out that the use of one method is not appropriate to encompass all situations; rather, it shows that to obtain a clearer and more complete picture a combination of the different methods may be necessary.

**Key words:** Sociolinguistics, Methodology, questionnaire, survey, bilingualism, data collection, language maintenance.

## **Introduction**

In any sociolinguistic study, before choosing the methodology one has to consider all the theoretical and practical issues involved in conducting such a study. Only after doing that, considerations can be made about the appropriate methodology. This article, will firstly consider the sociolinguistic research methodologies in the context of the language maintenance issues concerning the Italian community in Australia. It will then present an analysis of four methodologies trialed. Finally, the methodological concerns and considerations in how to obtain naturalistic language data will be discussed.

## **Linguistic repertoire of Italians in Australia**

Any sociolinguistic research in the Italo-Australian community conducted must consider the complex nature of its linguistic repertoire. The simplest way to categorize this repertoire is to say that it may include an Italian dialect, Italian and English. The complexity lies in the fact that the categories of dialect and Italian both represent a continuum of varieties. The dialect continuum can have a local dialect at one end and a regional *koiné* at the other. The Italian continuum can begin where the regional dialect ends and reach the standard variety. Standard Italian, however, is a literary and written form and never found in spoken language (cf. Alfonzetti, 1998; Berruto, 1987, 1989, Pellegrini, 1960, Sanga 1981, Trumper, 1984, Trumper and Maddalon, 1982).

In Australia the linguistic repertoire of the Italian community is further complicated by the addition of English. However, trilingual people are slowly disappearing. That dialects are not maintained is not too difficult to explain. Even in Italy the use of the dialect is now more and more a function of social groupings and age (Trumper, 1989).

The case of standard Italian in Australia is slightly different. Researchers have proposed various reasons for the shift away from Italian. Clyne (1987) from his study of census data posits that the high rate of exogamy in the second generation and the low rate of literacy in the first are two very important factors aiding the shift. Bettoni and Gibbons (1988) suggest that the shift is further aided by the fact that very few first generation Italians speak Standard Italian. They describe the community as being fragmented by the many different regional or popular varieties that are spoken within it. According to Bettoni (1985, 1989) one of the main reasons for its decline is that Italian in Australia is low in importance and prestige when compared to English. This is borne out by attitude studies carried out by Bettoni and Gibbons (1988, 1991) and Callan and Gallois (1982), which show that all Italian varieties in Australia hold low status positions, in comparison to the English language, in many of the traits tested for.

It is also a well documented fact that within two to four generations most Australians of non-English speaking background become not only native speakers of Australian English, but will also have lost their language of origin. (For a detailed analysis of language shift in Australia see Clyne, 1988, 1991, 2003; Clyne and Jaehrling, 1989; and Clyne and Kipp, 1997; for language shift within the Italian community see Bettoni, 1981, 1985, 1986, 1989; Rubino and Bettoni 1996; Cavallaro 1998; for an international perspective see Hakuta, 1986 and O'Bryan, Reitz and Kuplowska, 1976). Every new generation born in Australia of Italian descent speaks more and more English, at the expense of the mother tongue of their parents or grandparents.

When second generation children approach school age they can be divided according to the range of their linguistic abilities. These abilities can be defined according to what their mother tongue is:

- 1) dialect; or
- 2) popular or regional Italian if
  - a) their parents speak different dialects, or
  - b) if the area they live in has many speakers of different dialects; or
- 3) Italian<sup>1</sup> if the parents have made the effort of teaching them; or
- 4) any mixture of these languages with the addition of English.

It is also true that, at least for the first-born migrant children, the first extensive active use of English is in the classroom. Importantly, however, for those children who attend Italian classes, going to school also entails their first active exposure to Standard Italian. The effect is that they find themselves in a situation where their "Italian" background offers no guarantee that they will cope with successfully learning Standard Italian, which for them could be a foreign language (Smolicz and Secombe, 1986; Ware, 1981). So, functionally it can be argued that, upon entering the school system, these children are acquiring literacy in two second languages.

### **Language roles**

Research within the Italian community has not been able to come to definite conclusions on how each language is used. This indicates that the situation in Australia

is a dynamic one. Language use is not constant and more research is necessary to understand the factors that lead to choosing a particular language.

The most commonly held view is that Italian is reserved mainly for more formal situations and that the dialect is the language of the home domain. There are, however, conflicting views; for example, Bettoni (1989) claims that "in the Italo-Australian community the functions of the three languages are not kept rigidly separate," while Rubino (1993) argues that there are diglossic relationships between Italian and Sicilian, but not between Sicilian and English. If we accept Bettoni's view that in Australia the Italian language, or any of its varieties, do not have the stable domains of a classical diglossic situation, we can predict that this lack of stability is the main cause of language shift.

### **Methodology in sociolinguistic research**

Over the years different methods have been employed in sociolinguistic research. Different ways of collecting data have been tried out each with varying degrees of success. Since the basis for this article is the issue of methodological concerns, it is worth looking into how some sociolinguistic studies have been carried out and how certain methods were pioneered.

Poplack (1980) in her study of Puerto Ricans in New York used a member of the Puerto Rican community to collect the data. Using an 'insider' does have its advantages in that there are no problems as far as being accepted in a closely-knit community.

Thanks to the presence of someone known and trusted by the group the data collected using this method was natural and spontaneous.

Labov (1972a) in his study on phonological variables did not use any 'insiders' nor did he try to have himself accepted by any group. What he did was to observe what people were saying in a department store in New York. With this method the researcher himself collects the data by observing, taking notes and, where possible tape-recording. With this method the researcher is able to study a number of linguistic phenomena but is limited by the fact that all observations can only be taken in very short time spans.

Labov (1972a) in his New York study also relied on the interview method. While being aware that this method would elicit 'careful speech' he also developed the technique to elicit casual or spontaneous speech. He did this by paying attention to those interactions that occurred outside the interview, such as: greetings, interruptions and if a third person was spoken to. He also believed that introducing certain emotional topics would elicit spontaneous speech, such as: childhood events or hypothetically dangerous situations. The interview method for the collection of spontaneous data has been criticized over the years. Indeed Labov himself did not rely on it any more in his Harlem study (1972b).

Labov *et al.* (1968), in their study on the use of Black English Vernacular, were the pioneers in multi domain research. In their study they used field workers who were participants in the vernacular culture and language. They also tape-recorded as many situations that were as far removed as possible from interview-type situations, such as:

gatherings, parties and even a bus trip. While they could not totally dismiss the observer's paradox in those situations, they found that, in their case, peer pressure was so strong that nothing inhibited the use of the vernacular.

Blom and Gumperz (1972) and Gal (1979) chose to live within the communities they were studying. While never accepted as members of the communities, they acquired enough familiarity with the people they were studying to elicit natural and spontaneous data. The data collection was done through 'participant observation'. That is, by following people around or simply being present when these people interacted with each other and with the researchers. These researchers were able to observe, take notes of and, where possible, tape-record the language being used.

Milroy (1987a and 1987b) used a similar method in her Belfast study. The method differed from Gal's or Blom's and Gumperz's in the status she acquired within the group and in the type of data she had access to. She joined the group not with the status of a researcher but as "a friend of a friend". This gave her the freedom to observe and record both formal and spontaneous data. These last three studies mentioned all have numerous advantages. The quality and the amount of data collected in varying degrees of formality speak for the success researchers have had with them. Milroy herself suggested, however, that there is an incredible emotional strain on the researcher through the bond created with the informants. She also pointed out the large amount of data that was unusable due to poor recording conditions and the many hours of recorded speech that never got to be analyzed because of the lack of time and resources.

In Australia the studies on the Italian situation have used different methods according to the data that was needed. Bettoni (1981) used interviews in her study on English transferences into Italian. Interviews are, in general, formal situations and, therefore, they have proved to be a reliable method to elicit only formal language. Rubino and Bettoni (1990, 1996) employed a questionnaire given to a large number of members of the Italian community. However, questionnaires are restricted to the self-reporting of the participants. As such, the data obtained through their use is liable to be influenced by attitudinal factors. For instance, people tend to over-report the standard language to disguise the use of dialect, which might be seen by some as a sign of ignorance or lack of education. Rubino carried out detailed ethnographic work on data collected within a Sicilian-Australian family (Rubino, 1993, 1996, 2000, 2004). From personal experience, and in the opinion of other researchers, like Rubino and Bettoni (personal communications), Italians, as a group, are aware of the different status of the languages that make up their linguistic repertoire. This means that, when asked, they are able to distinguish between the varieties they use and are able to report reliably on what language they are using (although they are still susceptible to the over-reporting described above). One other problem, however, might arise when the participants would be asked to distinguish between two very similar varieties (for example, Regional Sicilian and Regional Italian).

### **Choosing a methodology**

A pilot study was carried out to evaluate the methodologies best suited for exploring the linguistic diversity and dynamics of the Italo-Australian community. The study was aimed at a middle ground between Rubino's ethnographic work (1993, 2004) and

Rubino and Bettoni's (1990, 1996) statistical work on data collected with questionnaires widely distributed across the community. Taking all of this in consideration the study intended to analyze how individuals use their linguistic repertoire, that is, which of the three languages is actually used in different domains, and what are the motivating factors that lead to the choice of a particular language.

In trying to choose the appropriate method for my studies I initially intended to draw heavily from the ethnographic methods of data collection as used by Blom and Gumperz (1972), Gal (1979) and Milroy (1987a, 1987b). Rubino (1991) had done as much in her study. However, in planning the study several discrepancies in situational demands surfaced and I had to reappraise my choice of methodology. Most of the studies carried out in the past have relied on the development of a special and close relationship (cf. Milroy's "friend of a friend") with the community or group to be studied. Blom and Gumperz (1972) and Gal (1979) had to observe the communities they studied for a long time (two months in Blom's and Gumperz's case and one year in Gal's case) in order to allow them to form testable hypotheses. Being a member of the community I intended to study I was in a privileged position to know enough about the Italian (and the Sicilians in particular) community in Australia not to need too much initial observation. This meant that I would not need to spend too much time getting to know the cultural background of my participants.

The people chosen to participate in the pilot study are a Sicilian- Australian couple (see next section) and their networks. These participants lived in an inner suburb in the Sydney metropolitan area and the couple were observed in four different domains. The

situations chosen for investigation were the ones that would most reflect the Italian community's trilingualism (Rubino and Bettoni 1996). That is, (more details below):

- at home within the nuclear family
- in the extended family domain;
- in the transactional domain (work or shops); and
- in the friendship domain.

The method used in this preliminary study would then have to give clear indications that it could yield useable data. Three different approaches were chosen at first: having the data collected by the participants (through tape-recordings), participant observation and a questionnaire. It had been anticipated that one of these methods would then be chosen for the main study that was to follow. The questionnaire to be administered after all data was collected was included to evaluate its usefulness in comparison to the other two methods and to see whether it would show anything else the other methods could not.

One other major factor that influenced the choice of methodology was the data quality requirements that the chosen method would need to yield. Normally in-depth studies in Labovian type research require very high quality recordings or observations. It was, however, decided that the language data needed to be only of a high enough quality to be able to identify the base language of each interlocutor in each situation.

### **The participants**

Having identified the tasks and domains where the data would be collected the next step before choosing the methodology for the study was to identify the target group that was to be studied.

The main theoretical framework of the study is language maintenance within the Italo-Australian community. Therefore, it was decided that the participants had to be the people who, in this context, were most at risk of losing their mother tongue. This would be true of most members of the Italo-Australian community. So, to narrow the choice of study group I relied on my own background. I was born in Sicily and Sicilian is my first language. I also have been living in Australia for all of my adult life and am quite knowledgeable of the local situation. I am also competent in all Sicilian, Italian and English. This led me to surmise that my knowledge and experience would aid me in the relationship with Sicilian-Australian participants and with the transcribing and analysis of the data. For this project, therefore, I chose to study the Sicilian community in Sydney. This meant that the three languages to be studied would be Sicilian, Italian and English. Therefore, the participants had to be trilingual. That is, they had to be from a home environment where they have been exposed to the three varieties that make up a Sicilian-Australian's linguistic repertoire. Their degree of competence in any of three codes was not important as the lack of full competence in any of the three codes would in itself be an indication of the state of the language within that particular group.

The group chosen, therefore, had to be made up of second generation Sicilian-Australians, that is, of nuclear families where both husband and wife were born in Australia from Sicilian parents or were born in Sicily and moved to Australia when very young. The couple should also have children of their own and, preferably, their parents should be in Australia (within reach of the researcher).

### **The pilot study**

Angela and Santo<sup>2</sup> were a couple known to the researcher and who agreed to take part in the pilot study. Their immediate family contains three generations: grandparents, parents and children. Angela is 27 years old and was born in Australia of Sicilian parents. She has a 33 year old brother who is married to a Greek-Australian woman. Angela was finishing her degree in Italian at the University of Sydney and hoped to become a teacher. Her husband Santo is 33 years old was born in Sicily and migrated to Australia with his family when he was 13 years old. He has two older brothers. He works for an airline at Sydney's airport. They have two children, Claudio, a 5 year-old boy, and Grazia, a 3 year-old girl. Both Angela and Santo also have their parents living in Sydney. They have lived all their married life in Sydney, and have frequent family get-togethers. Their social network seems to be made up almost entirely by the family. Their friends outside the family are not numerous and are of mixed ethnic background; they do not include a large number of Italians or Sicilians.

Even though Santo was born in Italy the family is fairly representative of second generation Italo-Australians (Ware 1981). Angela's and Santo's parents, all from

working class background, arrived in Australia during the 1950s and 1960s. Their initial efforts were centred on adapting to a new way of life and to give their children a better life than they themselves had; all with little regard as to what language to pass on to the subsequent generation. In both cases no special efforts were made by the parents to encourage the learning of Italian. In both families language only became an issue with Angela's and Santo's decision to have children of their own. Both of them communicated to the researcher a desire for their children to learn Italian. This was also one of the overriding factors for Angela's decision to study Italian at university.

### **Domains and tasks**

#### **In the nuclear and extended family domains**

As has been already stated, the aim of this pilot study was to identify a method of data collecting which could be used with a larger group of participants in the main study that was to follow. In adopting a methodology for the pilot study the researcher had to take into consideration the fact that it would not be possible to establish a close relationship with all the participants in the main study. Rubino (1990) was able to do so and, therefore, make sure that the presence of the researcher in the home would not affect the language used (Labov's observer's paradox). For this reason, in the family domains participant observation was excluded from the very start. To this end it was decided that tape-recording would be trialed. Rubino (1993) successfully engaged a member of the family she was studying with a high-quality tape-recorder. It was to be switched on during the family meals. Rubino states (1993, p.115) that in this manner she was able to access the "core" language of the family. I also felt that a tape-recorder left out of sight during family gatherings would provide the best possible results within

this domain. The participants, therefore, were observed through an analysis of the tape-recording as they interacted with their children (at home) and their relatives (in family gatherings). To make sure each voice on the tape was identified and to clearly indicate with whom the participants were using each language, the researcher listened to the tape together with one of the participants following each recording.

The use of a tape-recorder did give rise to some ethical concerns. It is simply unethical to tape-record people without their knowledge. However, drawing attention to the tape-recorder contrasted with the need to have everyone involved forget about it as they interact in a normal way. It was decided that everyone would be told about the tape-recorder before it was switched on. It would then be placed in an unobtrusive place and that the researcher would ignore the first ten minutes of the recordings or until it was clear that the conversation seemed not to be affected by the tape-recorder.

### **In the transactional domain**

In this domain the participants were observed as they interacted outside the home. This domain was included to try and see how the participants interact with other Italians away from their family domains. Aiming, at first, to keep the same method across domains, the use of a tape-recorder was trialed. However, as will be discussed later, this proved problematic.

Participant observation and note-taking were also trialed. In this way, the researcher accompanied the couple while they did their shopping in a few Italian shops. The

danger in this domain was that interacting with the researcher before and during the shopping trip might establish a language trend that the participants would then keep while he was present. However, the decision to have the researcher present was made with the thought that outside of the home and in crowded shops any effect the presence of the researcher might have on the participants' language choice and use would be minimized.

### **In the friendship domain**

The aim of investigating the language use in this domain was to see to what extent language choice and use is governed by one's social network. Since it had been decided that the researcher could not establish a close relationship with the couple in the home and family domains it also became obvious that the same would hold true in their friendship domains. It was also important to keep the same ethical considerations in mind. The two people that agreed to take part in the pilot study refused, at first, to bring a tape-recorder to a meeting with their friends. They felt that bringing a tape-recorder to a restaurant, bar, or their friends' homes, would not have been practical or ethical. More importantly, they also thought it might upset the friendly atmosphere of the meetings and therefore affect the choice of language variety. Since participant observation had already been ruled out, a different method to those initially proposed was tried out. After receiving detailed instructions (see Gibbons 1987), the participants were asked to keep a diary of the language they used while interacting with friends. The decision to trust the participants' own judgement on reporting the correct code used necessitated from the lack of any other reliable method.

The participants used diary-keeping at first. Fortunately, however, after their successful experiences with the tape-recorder in the home and family domains the participants decided that they would make a tape-recording of a reunion with the same friends. I, therefore, had the opportunity to compare two different methods used in the same domain and, more importantly, with the same friends. The only drawback being that the two sets of data were not taken at the same time or in the same place.

### **Questionnaire**

The purpose of administering a questionnaire was to test the reliability of self-reporting against "real" data, and to try and gather socio-economic and attitudinal data on the participants. The questionnaire was a variation of the one used by Rubino and Bettoni (1990) and was administered a few months after all other data was collected. It is divided into four main parts. The first part is aimed at eliciting demographic and self-assessment data about the participants. The second part puts the participants in different domains contextualized according to the interlocutor, the topic of the conversation and where it takes place, and asks to provide what language they would use in those situations. For comparison, the situations included were similar to the ones covered in the other phases of the research. The third part aimed at establishing the degree of contact each participant has with the Italian community and Italy. The fourth part, which is an innovation over the questionnaire used by Rubino and Bettoni, elicited attitudinal data through open-ended questions. In this part a discussion was prompted by the researcher with questions on what the participants' thoughts were on language maintenance in general, on the three languages in question and who should be responsible for their children's language education.

### **Effectiveness of methods used**

The following discussion will be an analysis of each situation, the method used and the type of data obtained. This analysis will identify whether the methodology used in each domain succeeded in obtaining useable data.

#### **At home**

The recording in this domain is of the couple and their two children sitting in the kitchen having their evening meal. Angela, who was in charge of the tape-recorder, had earlier told the rest of the family that the dinner would be taped. She then switched the tape-recorder on a few minutes before everyone came to the table and the tape-recorder was left on a shelf near enough the table to make the recording possible but not obvious enough that it would be a constant reminder.

The recording in this situation was clear enough to produce useable data. For example, it provided clear indications of code-switching. The following are typical examples of such instances (Italian is shown in bold and Sicilian is shown in bold italics):

**(1)** At the end of a long conversation in Italian:

Angela (to her son) hurry up Claudio!

Angela (to Santo, her husband) you know on Thursday morning I could drop Grazia (the daughter) off at school

Santo Thursday I work

Angela (to her son) Claudio, you know those couple of mothers?

Cal's mother and Jessica's mother?

Claudio yep

Angela (to Santo) **stiamo pensando di ire o parcu pi fari iucari**

‘we're thinking of going to the park to let the  
**i piccirilli**. OK? So I'll be home by the time you get up  
children play’

Angela (to Claudio) **u nonnu ha telefonato**

‘grandfather phoned’

Claudio: ah?

Angela: ah what?

(2) After a few minutes silence while eating:

Santo (to Grazia) **cosa hai fatto a scuola?**

‘what did you do at school?’

Grazia: **ho fatto** testing

‘I did testing’

Santo: **che** testing?

‘what testing?’

Santo (to his son) tu **c'iai bisogno d'un volantino vero?**

‘you need a napkin don't you?’

### **With other relatives**

The family was recorded at a family dinner. The recording was done in the dining room as the extended family sat down to eat. In this family gathering were present: the

children, both sets of parents, Angela's brother and his wife (who is of Greek origin and is learning Italian; however, neither speaks nor understands Sicilian), and one of Santo's brothers. As far as the actual recording is concerned, the same procedure as the one described for the home recording was followed. That is, everyone was warned that the get-together would be recorded with the exception this time that they were not told the actual time when the tape-recorder was to be switched on. A 45-minute recording was obtained.

This recording was considerably more difficult to transcribe than the one taken at home. The differences being that, while before there were four people, now there were nine; and that while previously they were sitting down to a meal, now they were all milling around the kitchen and dining area adjacent to it. However, the tape-recorder and microphone were of a high enough standard to capture most of what was said. Enough was captured on tape to make analysis of the language use possible. In this context what was needed was to be able to identify what language Angela and Santo were using, with whom and on what topic was discussed in a particular interaction. Language use was clearly identifiable from the recording. Changes in topic and codeswitching were also identifiable, except those that were away from the immediate vicinity of the tape-recorder. However, the nature of the get-together meant that enough interactions happened within range of the microphone to safely say that this method had a high degree of reliability needed for naturalistic data collection. The following are examples of the interactions recorded (Italian is shown in bold and Sicilian is shown in bold italics):

(3) In a general discussion with everyone

Angela                    ***ammemo era pulito però.*** He didn't break anything.  
                                 'At least he was clean though.'

(4) To his brother

Santo                    eh? ***Ma che*** come back! I don't have to pay?  
                                 'eh? But what (what do you mean) come back!'

(5) To everyone

Santo                    ***u patri figlio spiritu santu e così sia***  
                                 'the father son Holy spirit Amen'

(6) To her daughter then to everyone

Angela                    come on Grazia ***veni a mangià***  
                                 'come on Grazia come and eat'  
  
***ebbè allora amma aspittare a mangiare.***  
                                 'well then we have to wait to eat'

**In the transactional domain**

In this task two methods were trialed: tape-recording and participant observation. However, the recording proved to be very difficult to transcribe. Shops full of customers and shopkeepers produced very muddled and unclear recordings, making it impossible to distinguish who was talking to whom.

Participant observation proved a better method. The researcher accompanied the participants on a routine shopping trip in the suburb of Haberfield, Sydney. This particular shopping centre is made up largely of shopkeepers from an Italian background and is a popular shopping place for the Italo-Australians living in the inner suburbs of Sydney. To lessen the impact of the researcher's presence the participants and the researcher socialized over a cup of coffee in a local Italian Café before the shopping began. This allowed the participants to get used to the extra presence. All note-taking was done immediately after each interaction and done discretely away from the participants so as to not distract them during each interaction and not remind them they were under observation.

The data obtained shows that this method as well can provide useable data on language choice. Angela and Santo each interacted, in 3 shops (a delicatessen, a bakery and a café) with four people. The researcher was able to ascertain that the people were 3 women and 1 man, all in their 40's. Two of the women were Sicilian and the rest were Italian but not Sicilian. The following is an example of the interactions observed (Italian is shown in bold):

(7) To the Sicilian-Australian shopkeeper

Angela	I'd like some ham <b>quello li</b>	(‘that one’)
	<b>E' buono?</b>	(‘Is it good?’)
	<b>Grazie, arrivederci</b>	(‘Thank you, good bye’)

The advantage of this method is that since the researcher is present while the participants are interacting any queries can be clarified immediately after the shopping trip while everything is fresh in the participants' mind. For example, the participants were able to inform the researcher that they were aware of the regional background of the people they interacted with. In example (7) above Angela was aware that the shopkeeper was of Sicilian background, but still chose to speak to her in Italian and not Sicilian. For a detailed discussion on the choice and use of language in the Italo-Australian community see Rubino and Bettoni (1996) and Cavallaro (1998).

### **In the friendship domain**

In this situation Santo, Angela and their two children met with two friends and their daughter. Of the friends, the husband is 27 years old and was born in Sicily. He came to Australia at the age of 20. The wife, instead, is 35 years –old. She was born in Australia but has been back to Italy many times. They have a 1 year-old daughter.

In the first meeting with these friends Santo and Angela kept a record of what language they spoke with their friends during the evening. This was mostly done after they got home. They also took the notes together so that they could consult each other if unsure what language they had used or what the topic of the conversation had been.

Given the right conditions it can be a useful tool for sociolinguistic research as Gibbons (1987) has shown. This pilot study showed that the participants' self-reporting, while accurate as far as the language use is concerned, was not very detailed.

In their second meeting Santo and Angela brought a tape-recorder with them. The approach here was the same as that used by the participants at home and within their family. That is, Angela again was in charge of the tape-recorder, warned their friends that their talk would be taped, and switched the tape-recorder on before they sat down to eat. This produced a recording of about 50 minutes.

This recording was, again, clear enough to show great variation between codes. It was also interesting to note that the data obtained in this domain were clear enough not only to identify that Italian was the base language when the group spoke all together, but Sicilian was used more whenever the group divided up. The explanation for this variation is not within the scope of this article and will be investigated further in a follow-up study. The following are examples of the interactions recorded (Italian is shown in bold and Sicilian is shown in bold italics):

(8) To everyone

Angela

**ah il cugino di Giuseppe. Non ha fatto il militare?**

‘ah Giuseppe’s cousin. Didn’t he do national service?’

(9) To his male friend

Santo

***No sacciu chi evi. Na vota uncuntraì***

‘I don’t know who he is. I met him once’

### **The questionnaire**

A comparison of the language observed or recorded and the answers given to the questionnaire shows some interesting points. On the subject of what language the participants used with their children both participants said in the questionnaire that in all situations they would use only Italian, except when helping them with their homework and then English would be used. The questions on their attitudes towards the three languages also showed that while they feel English and Italian are the more important codes, they wish their children to grow up with a good knowledge of Sicilian as well. This is reflected in the tape-recording, which did show that whenever the children are around the base language is indeed Italian and that English and Sicilian play secondary roles at home. This is a very important notion: it corroborates the studies on language attitudes which indicate that logical, rational and status conscious thinking favours the standard language while emotions and ethnic solidarity favour the dialect.

The recordings, on the whole, corroborated the questionnaire's answers on language choice with the rest of the family. However, the recordings and the answers to the questionnaire differ in the amount of Italian spoken with the family. The recordings indicated that Santo and Angela used a substantial amount of Italian with their family. In the questionnaire both participants had stated that Italian would have been used much less than the recordings showed. The recordings were also able to give a more complete picture than the questionnaire. In the questionnaire the participants answered that they would switch to Italian whenever the children or Angela's sister-in-law would come into the conversation. However the recordings show that things are not so clear

cut. The recordings showed that Santo would at times not change from Sicilian into Italian whenever his children became involved. It is these types of situations that the questionnaire did not handle very well. The recordings also indicated that Angela and Santo were very aware of certain people whose presence required a switch to Italian, in this case the children and sister-in-law. For a questionnaire to consider all the complexities that can arise in any given interaction its questions would have to be redesigned to allow for them and many more would need to be added. As such this questionnaire took nearly an hour to administer. Any redesigning, therefore, would entail an increase in size and of the time needed for all the questions to be answered. This would make it very impractical.

With Sicilian friends they reported in the questionnaire that they would use Sicilian (Santo) and English with some Sicilian (Angela). But, while the recording corroborated the individual interactions, the recording also shows that Italian was the base language when the group was together. This observation could not have been made solely by analyzing the questionnaire.

Another, seemingly, inaccurate self-reporting was on the question of what language they would use in a Sicilian shop. Santo reported he would use Sicilian, which he was not observed to do. He used Italian when he was observed talking to a Sicilian woman in a delicatessen. One possible explanation for this may be that the researcher's presence affected Santo's choice. However, Santo and the researcher interacted almost exclusively in Sicilian during the shopping trip. It seems, instead, that the knowledge

that Italian is the code for the more public situations is something that Santo may have internalized. This will be the subject of investigation investigated further in the follow-up study.

### **Conclusions**

No firm conclusions can be made on the actual data collected. Indeed it was not the aim of the pilot study to include an analysis of any data obtained. The sample is too small and the fact that Santo was born in Italy did seem to skew the data towards Italian and Sicilian as far as he is concerned. As far as the methodology is concerned, this study has shown that having the participants collect the data themselves with the use of a tape-recorder and participant observation are two very reliable ways of obtaining naturalistic data.

The lack of detailed information from diary keeping is something that could not be overcome without more lengthy instructions and more practice. It was felt, however, that forcing the participants to concentrate on the language they use at all times was to further formalize the situation with the subsequent impossibility of obtaining naturalistic data. There is no doubt that out of the two methods trialed in the friendship domain, the tape-recording yielded more information on the interactions; while at the same time dismissing any doubts on the accuracy of the data. The questionnaire's greatest asset was that it provided a lot of background and attitudinal information.

The pilot study, in the end, did identify the best methods for the collection of naturalistic language data. However, far from preferring one method, the pilot study has shown that not one single method is suitable for all situations. What it showed was that a detailed analysis of the language dynamics of a minority group is best attainable if one makes use of all the means at one's disposal, adapting each method to suit the different domains to produce the most complete picture possible.

### **Notes**

<sup>1</sup> The term Italian will be used from now on to indicate the variety opposed to the dialect (Alfonzetti, 1998:208).

<sup>2</sup> Pseudonyms have been used in this article because of the wish by the participants to remain anonymous.

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## **Do Languages with Cognate Relationships have Advantages in Second Language Acquisition**

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### **Bio Data:**

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### **Abstract**

Second-language students usually use various strategies in learning second language (Bialystock, 1991). This article is concerned with cognitive evidence bearing on the nature of the units stored in the mental lexicons of speakers of Semitic languages, Arabic and Hebrew. On the basis of lexical connections between translation equivalents represented in the cognitive system of Arabic Hebrew bilingual, I suggest that cognate words that have phonological overlap can influence the recognition of translation equivalents. I review documented language literature and that lead to the same conclusion and discuss evidence for the morphemic status of templates from repetition priming effects (reaction times (RTs) and accuracy measures) were compared between translation equivalents in forms of Modern Standard Arabic (MSA) and Hebrew.

MSA targets were preceded by cognate and non-cognate translation equivalents in Hebrew immediately in a lexical decision task. The participants were requested to make a word/nonword decision regardless of language. The larger priming effects between Hebrew-MSA cognate words than non-cognate suggests that cognate's relationship affects acquisition of second language regardless of the mother tongue. The conclusion was that, the strength of the lexical associations between translation equivalents is influenced not only by the frequency of concomitant use but rather by their cognate status.

**Key words:** Modern Standard Arabic, Bilingualism, Cognate, Non-cognate, Repetition priming, Translation equivalents, Lexical organization, Lexical decision,.

## **Introduction**

"Learning a second language" can be usefully divided up into two parts: learning rules and learning words. It is very common to hear people say that learning the words of a language is the hardest part, or that they can't communicate well because they don't have enough words. In this study I try to explore the lexical factors that influence second language acquisition from cognitive perspective. Specifically, this study is concerned with cognitive evidence bearing on the nature of the units stored in the mental lexicons of speakers. To achieve this goal, I examine how level of form overlap (phonological overlap) influences translation priming by comparing priming from within language cognate translation primes and cross language related forms with unrelated forms. The languages used are Arabic and Hebrew where both belong to Semitic languages which are unique and interesting.

Research suggests that native language use is advantageous in second language acquisition (August & Hakuta, 1997; Cuevas, 1997). Academic skills, literacy

development, concept formation, and strategy development learned in the first language transfer to the second language (Bialystok, 1991). However, the development of cognitive representation of words in the lexicon has been found to have the most important effect on second-language learning (Thomas & Collier, 1997). A well known phenomenon is that students use the vocabulary of the second language as a primary determinant of reading comprehension and students whose first language has many cognates with second language have an advantage (Garcia & Nagy, 1993). Clearly, it is important for educators to find a potential for reciprocity between the two languages.

The literate Arabic speaker uses two forms of Arabic in everyday life. The first language is the Spoken Arabic (SA), which is a local dialect used for mundane verbal communication. The second is Literary Arabic (*fusha*) labeled as Modern Standard Arabic (MSA), is the language in which speakers of Arabic read and write. In its classical form it is the language of the Koran and used for religious purposes across the entire Islamic world. In its modern form, MSA is also used daily for formal oral communication in the media. Obviously, all reading materials (textbooks, newspapers etc.) are written in MSA. In education (first grade), MSA is formally learned in school along with reading acquisition and both forms (SA and MSA) are intertwined. By the end of high school, native Arab speakers are experienced in speaking and listening to all Arabic forms. Hence, from the ecological point of view, SA and MSA could be considered as an instance of ‘diglossia’, that is, a social environment in which a community uses two forms of the same language concomitantly (Ferguson, 1959). Starting in the second grade in Israel, Arabic speaking children start to learn Hebrew as a second language. Because Hebrew is the primary official language of the country, by

the end of high school, most students are as proficient in Hebrew. In a former study we examined the validity of this claim using lexical decision performance for both printed and spoken Hebrew and Arabic words (Ibrahim & Aharon-Perez, 2005). We compared semantic priming effects within Spoken Arabic, with the effects found across languages with written Arabic or in Hebrew being the other language. The findings showed that the semantic priming effect was twice as large within spoken Arabic than between languages. In addition, the cross-languages semantic priming effect was larger when the primes were in spoken Arabic and the targets in written Arabic or Hebrew than when the order was inverse. These data suggested similar lexical performance for written Arabic and Hebrew in native spoken Arabic speakers. This pattern of results is similar to previously reported results for second languages in bilinguals from different languages (Altarriba, 1990; Keatley, Spinks, & de Gelder, 1992; Kroll, Sholl, Altarriba, Luppino, Moynihan, & Sandres, 1992; Chen & Ng, 1989).

### **Studies in other languages**

Previous investigations identified several factors influencing the lexical organization of non-native languages and the manner in which words in non-native languages (L2, L3, etc) are linked to their translation-equivalents in the native language (L1) (e.g., de Groot, 1995; Dijkstra, Grainger & Van Jeeven, 1999). These factors can be globally categorized as language-determined and user-determined (for review, see de Groot & Kroll, 1997).

One of the major language-determined factors affecting the nature of cross-lingual lexical links is the morpho-phonological similarity between translation equivalents

(Grainger & Frenk-Mestre, 1998; van Hell & de Groot, 1998). Two words in different languages are said to be “cognates”<sup>1</sup> when they resemble each other because of a historical relationship. Cognate words are termed morpho-phonologically similar words having a common proto-linguistic origin called morpheme. Accordingly, as opposed to cognates, non-cognates are not morpho-phonologically similar. For instance, words derived from the same stem, such as “apartheid” and “particle”, are morpho-phonemically similar. In contrast, words like “divine” and “division” are not considered morpho-phonologically similar, although they share the first four letters. Morpho-phonological similarity may or may not be found between translation equivalents. For example, “father” in English and “vader” in Dutch are morpho-phonologically similar translation equivalents, whereas “uncle” in English and “oom” in Dutch are dissimilar translation equivalents (de Groot, 1992b).

Previous studies reported that the cognate words are consequential to their processing. For example, cognate more often than non-cognate translation equivalents elicit associates that are also translations of each other (Taylor, 1976), and are translated faster and more accurately from one language to the other (de Groot, 1992b, Sánchez-Casas, Davis, & Gracia-Albea, 1992). Particularly relevant for the present study is the finding that cross-lingual immediate repetition priming effect was larger between cognate than non-cognate translation equivalents (e.g., Cristoffanini, Kirsner, & Milech, 1986). This effect was found even if visual masking of the prime minimized strategic or conscious episodic factors (de Groot and Nas, 1991) and using semantic categorization rather than lexical decision tasks (Sanchez-Casas et al., 1992). The use of the masked priming technique in cross lingual repetition priming is important because it

helps in locating the effect at the lexical level: On the one hand, several studies suggested that masked priming is very little (Serenio, 1991), or insensitive to semantic priming (Forster & Tafts, 1994). On the other hand, as mentioned above, masked priming reduces the effect of possible episodic and/or strategic factors. Finally, the primary lexical origin of masked repetition priming is also suggested by the absence of masked repetition effects when the targets are non-words even if morphemes (or pseudo-morphemes) are repeated from the prime to the target (Forster, & Davis, 1984; Frost, Forster, & Deutsch, 1997; but see evidence for the existence of form priming in Forster, 1987).

Among the user-determined factors influencing the bilingual or multi-lingual lexicon are, for example, the user's competence in the non-native languages, and the order of their acquisition (Kroll & Stewart, 1990). Another user-determined factor that has been relatively less explored is the influence of ecological factors such as the role the non-native language in the user's linguistic environment, and its subjective perception as a second (or first) language. A particularly interesting linguistic environment for investigating the importance of ecological factors and their interaction with pure linguistic factors is Arabic. Yet, the similarity among languages should influence linguistic bilingual performance. For example, a longitudinal research of literacy acquisition in Moroccan children investigated whether preschool experience with a spoken Moroccan Arabic dialect facilitates literacy acquisition differently than preschool experience with Berber, which is a member of the Hamitic family of languages and has no semantic or syntactic similarity to Arabic (Wranger, Spratt & Ezzaki, 1989). This study compared the performance of monolingual and bilingual

Arabic and Berber speaking children in learning to read MSA and French. The results showed an advantage for the children whose mother tongue was the Arabic dialect over Berber-speaking children in MSA. In contrast, the preschool experience of the two languages groups had little effect in learning to read French. The researchers concluded that the superiority of the Arabic speaking children in the in the early stages of MSA literacy acquisition is due primarily to the substantial similarity and transfer from spoken Moroccan Arabic to MSA, but not to French

### ***Arabic and Hebrew***

Linguistically, however, SA and MSA are sufficiently different to be considered more like two (related) languages rather than two forms of the same language. For example, although most words are similar (but not identical – see below), many concepts are represented by different words in SA and MSA. Furthermore, because SA uses fewer words than MSA (e.g., Ferguson, 1959) the same phonological unit in SA may represent related meanings which are represented by different words in MSA (e.g., the word “chin” is also used for “beard” and “goat” for “stupid”). Considerable phonetic, phonologic, morpho-syntactic differences are also evident. For example, the vowels ‘ε’ and ‘o’ in SA are pronounced in MSA, depending on phonetic context, either as ‘ɪ’ or ‘i’ and ‘au’ or ‘u’, respectively; whereas words in MSA may not begin with two consecutive consonants (or with a consonant and a ‘schwa’) many words in SA do so; different inflections are used in each language (such as is the suffix which marks the plural in each language); Hence, from the linguistic (rather than social) perspective, literate Arabic speakers could be considered, de facto, bilinguals. Indeed, a debate exists

as to whether the two forms of Arabic represent different languages, or whether this is a diglossic situation (Eid, 1990).

Hebrew is a Semitic language like Arabic and shares with it a similar morphological structure based on consonantal roots and word patterns (for a description of Hebrew morphology see Bentin & Frost, 1995). Moreover, although there are phonetic and phonological differences between Hebrew and Arabic many roots are shared by Hebrew and MSA words. Hence, it is not difficult to find cognate translation equivalents in these two languages which rely on the same principle (shared root) as cognate translation equivalents in SA and MSA.

As Semitic languages, Arabic and Hebrew are characterized by a highly productive derivational morphology (Berman, 1985). Most words are derived by embedding a root into a morpho-phonological word pattern. In both languages, words are based on a trilateral root and various derivatives which are formed by the addition of affixes and vowels. The roots and phonological patterns are abstract entities (structures) and only the joint combination form specific words. As a result of this structure, the core meaning is conveyed by the root and the phonological pattern conveys the word class information. For example, in Arabic the word (TAKREEM) consists of the root (KRM) and the phonological pattern TA—I-. In Hebrew, the word (SIFRA) consists of the root (SFR) and the phonological pattern —I—A in which every line represents a consonant. Unlike the Latin orthography in which vowels are represented by letters, in Arabic and Hebrew vowels are not part of the alphabet letters.

The reported studies in Arabic did not address the question of lexical organization and links between translation-equivalents directly. Moreover, in those studies different groups of participants were compared, leaving open the possibility that the groups differed along other relevant dimensions. To address this question, morpho-phonological similarity (cognate/noncognate) was manipulated while repeating translation equivalents between MSA, SA, and Hebrew in a within-subject lexical decision paradigm.

### **Method**

#### **Participants:**

The participants were 30 native Arabic speakers (SA), students in the 11<sup>th</sup> and 12<sup>th</sup> grade from high schools in the Western Galilee. They are members of the Druze minority<sup>2</sup> who studied MSA and Hebrew in school and, as documented in the introduction, were equally proficient in these two languages.

#### **Task:**

The task was an auditory lexical decision<sup>3</sup>. Participants were presented with a mixed list of SA, MSA and Hebrew spoken words and pseudo-words, and were instructed to decide whether each stimulus was a word or not, in the language to which it belonged. Pairs of translation equivalents were inserted in this list. In all cases, the first word of the pair (the prime) was presented in either Hebrew or SA, and the second word (the target) was presented in MSA. All targets followed the primes immediately, half of the translation equivalents were cognates and the other half were not cognates.

**Stimuli:**

***Linguistic considerations:***

In Semitic languages (Hebrew and Arabic alike) words are constructed by combining a consonantal root (that carries most of the semantic information) and a word pattern that includes vowels as well as consonants, and provides information about the word class and its morphological status, as well as the complete unequivocal structure of the word. Hence, each word in Hebrew or Arabic is, at the very least bi-morphemic, but none of the composing morphemes are words by themselves. In the present experiment, morpho-phonological similarity was based on a shared root. There is ample evidence that, within language (Hebrew) two words derived from the same root (hence sharing it) can prime each other at short and at long lags regardless of whether they are or are not semantically related (Bentin, 1989; Bentin & Feldman, 1990). Similar results were also found using the masked priming paradigm, suggesting that this morphological priming is not entirely based on strategic processing factors (Frost, et al., 1997). As for the phonological level, Jared and Kroll (2001) studied English/French and French/English bilinguals engaged in a word naming task and found that individuals who learn a second language that uses the same alphabet as their first language do not impair their L1 word-recognition speed, unless they have previously named words (activating spelling-sound correspondences) in L2.

Cognate translation equivalents between SA and MSA are fairly abundant. In addition, thanks to their common Semitic origin, there are many examples in which the same root is combined with different word patterns to form translation equivalents

between Hebrew and MSA. Such translation equivalents are cognates (by definition) but not identical (due to the different word patterns).

Cognate translation equivalents between Hebrew and SA are less frequent, and translation equivalents across all three languages are very few. Therefore, different pairs of cognate and non-cognate translation equivalents were used as priming MSA words with Hebrew translation equivalents and with SA translation equivalents. However, given the similar nature of morpho-phonological similarity across all pairs and the matched frequency and concreteness of the words (see below) repetition priming effects and their interaction with the cognate/non-cognate factor were comparable across languages.

***Present stimuli and design:***

The stimuli used in the present study were: 384 legal phonological structures, used in immediate repetition conditions; 192 of the stimuli were words and 192 pseudo-words; 96 were primes and 96 targets. The rated word frequency of all targets was average (3.95, 3.89, and 4.06 on a scale between 1 (lowest frequency) and 7 (highest frequency) for the non-cognate targets, cognates to SA words and cognates to Hebrew words, respectively) (See appendix).

Half of the primes (48) appeared in Hebrew, and the other half (48) in SA. Within each of the priming language conditions, 16 targets were unrelated to their primes, and 32 targets were the translation words of the primes. Of the translation words, 16 of the pairs were cognates and 16 of the pairs were non-cognates (table 1a). Across subjects

stimuli were rotated so that each target-prime pair appeared in each translation condition.

The pseudo-words were constructed to mimic the words. The 192 “targets” were based on MSA. Among the “primes”, 96 were based on Hebrew and 96 on SA. Within each language group 32 primes shared a pseudo-morpheme with their paired target, 64 did not. Of course, for pseudo-words there could be no further division of the non-cognate primes. Sixteen cognate pseudo-words pairs were repeated (table 1b).

Table 1: MSA targets and their cognate (a) and non-cognate (b) translations primes in Spoken Arabic and Hebrew.

a.

Word Prime	Word Target	Gloss	Word Prime	Word Target	Gloss
Words in Spoken Arabic	Words in MS Arabic	In English	Words in Hebrew	Words in MS Arabic	In English
غنائي	أغنية	Song	מפתח	مفتاح	key
مكنة	ماكينة	Machine	חוט	خيطة	wire

b.

Word Prime	Word Target	Gloss	Word Prime	Word Target	Gloss
Words in Spoken Arabic	Words in MS Arabic	In English	Words in Hebrew	Words in MS Arabic	In English
شوفير	سائق	driver	שועל	ثعلب	fox
بسكليت	دراجة	bicycle	חדר	غرفة	room

The stimuli were recorded in a male voice, native speaker of the local SA dialect, and were presented to the participants aurally, through earphones. The words underwent computer processing, designed to equalize their volume, and their length, as much as possible (700 ms duration time, on the average). A computer was used to present the stimuli.

**Procedure:**

Stimuli were presented at a steady rate, and participants were requested to perform a lexical decision on each one. The SOA was 2000 ms, and the order of presentation was pseudo-randomized (keeping pairing intact), for each subject. Experimental instructions were given in SA at the beginning of the session. It was explained to the participants that they were about to hear words and pseudo-words in different languages, and they were to indicate, by pressing a button, whether the phonological string presented was a word, regardless of the language of presentation. The dominant hand was used for the affirmative (detection of a word) and the other hand for the negative (detection of a pseudoword). Accuracy and speed were equally stressed. Since half of the stimuli were words, and the other half pseudo-words, and since both words and pseudo-words at both lags were similarly structured and randomly presented, the participants were not able to predict the lexical status of any stimulus based on the preceding stimulus. As far as the participants were concerned, the stimuli on the list were not related in any way, and the paired structure existed in the eyes of the experimenter alone. A training session of 16 words and 16 pseudo-words preceded the experimental session which lasted about 20 minutes.

**Results**

Outlying RTs, more than two standard deviations from the mean of each participant in each condition, were excluded from the calculations (less than 5%). Mean RTs and error rates were calculated in each of the conditions across participants and are presented in Table 2.

Table 2: Reaction times in milliseconds (SEm\*) and percentage of errors in lexical decision for word targets in MS Arabic, primed by cognate and non-cognate translation equivalents in Spoken Arabic and Hebrew.

	Priming in Spoken Arabic	Priming in Hebrew
Unrelated	1022 (23) 6.7%	1093 (19) 7.6%
Repeated Non-cognate	938 (16) 1.0%	1010 (17) 2.9%
<b>Priming effect</b>	<b>84 5.7%</b>	<b>83 4.7%</b>
Repeated Cognate	890 (14) 0.8%	906 (14) 0.8%
<b>Priming effect</b>	<b>132 5.9%</b>	<b>187 6.8%</b>

\* SEm = Standard Error of the mean

The statistical reliability of the observed differences was established across subjects and across stimuli by a two-way within-subjects ANOVA and a two-way between-stimuli ANOVA. The factors were Priming Language (SA, Hebrew) and Relatedness (unrelated, non-cognate translations, cognate translation). These analyses showed that 1) The RTs to MSA targets following SA primes (991.5 ms) were faster

than the RTs to MSA targets following Hebrew primes (1035.2 ms) [ $F(1,29) = 99.9$ ,  $MSe = 1742$ ,  $p < 0.001$ ;  $F(1,180) = 9.45$ ,  $MSe = 1742$ ,  $p < 0.001$ ] and a significant main effect of Relatedness [ $F(1,290) = 99.7$ ,  $MSe = 5063$ ,  $p < 0.001$ ;  $F(2,180) = 37.0$ ,  $MSe = 8343$ ,  $p < 0.001$ ]. Post-hoc comparisons of the relatedness effect revealed that RTs to targets succeeding unrelated primes were the slowest (1075.5 ms), significantly slower than those appearing after non-cognate translations (1018.5 ms) [ $F(1,29) = 68.0$ ,  $MSe = 22842$ ,  $p < 0.001$ ] and RTs to targets following cognate translation words were faster still (946 ms) [ $F(1,29) = 60.6$ ,  $MSe = 41589$ ,  $p < 0.001$ ].

The repetition priming was significant [ $F(2,58) = 66.9$ ,  $MSe = 5702$ ,  $p < 0.001$ ,  $F(2,92) = 26.0$ ,  $MSe = 8321$ ,  $p < 0.001$ ]. Relatedness also interacted with the priming language, showing an important result when the repetition effect was slightly larger when the translation was from Hebrew to MSA (135 ms) than when the translation was from SA to MSA (108 ms). Also, the repetition effects for non-cognate translations were equally large in the SA or Hebrew priming language conditions (Table 1). Indeed, separate Relatedness for each priming language condition revealed that, whereas the Relatedness effect was significant for both priming language conditions [ $F(1,29) = 32.2$ ,  $MSe = 2966$ ,  $p < 0.001$ ; and  $F(1,29) = 69.0$ ,  $MSe = 3406$ ,  $p < 0.001$ , for SA and Hebrew, respectively] The RTs and percentage of errors in response to pseudo-words are presented in Table 3.

Table 3: Reaction times in milliseconds (SEM\*) and percentage of errors in lexical decision for pseudo-word targets in MS Arabic, primed by cognate pseudo-words in Spoken Arabic and Hebrew.

	Priming in Spoken Arabic	Priming in Hebrew
Unrelated	1198 (17) 8.0%	1247 (15) 8.9%
Cognates	1169 (19) 6.5%	1183 (20) 9.0%
<b>Priming effect</b>	<b>29 1.5%</b>	<b>64 0.1%</b>

\* SEM = Standard Error of the mean

As for word targets, the reliability of the experimental condition effects on pseudo-word targets was assessed by a Language x Relatedness ANOVA. For pseudo-words, however, the relatedness factor had obviously only two levels, unrelated primes and (pseudo) cognate primes. In contrast to words, separate ANOVAs showed that morpho-phonological similarity between pseudo-words significantly facilitated lexical decisions for targets [ $F(1,29) = 45.1$ ,  $MSe = 3408$ ,  $p < 0.001$ ,  $F(1,90) = 5.0$ ,  $MSe = 9434$ ,  $p < 0.05$ ]. As for words, priming was larger when MSA pseudo-words were primed by Hebrew cognate pseudo-words than by SA cognate pseudo-words. This interaction between the priming language and the relatedness effect was significant within subjects [ $F(1,29) = 10.0$ ,  $MSe = 5411$ ,  $p < 0.005$ ], but not between item groups [ $F(1,90) < 1.00$ ].

Less errors were made to primed (5.2%) than to unprimed (6.4%) word targets [ $F(1,29) = 52.6$ ,  $MSe = 20.87$ ,  $p < 0.0001$ ,  $F(1,179) = 2.4$ ,  $MSe = 143.3$ ,  $p = 0.12$ ]. The priming language, however, had no influence on the percentage of errors made to word targets. Post hoc univariate analysis revealed that more errors were made to word targets primed by non-cognate primes (1.5%) than to those primed by cognate primes

(0.8%) [ $F(1,29) = 7.5$ ,  $MSe = 158.2$ ,  $p < 0.01$ ], and even more errors were made to targets that followed unrelated primes (7.2%) [ $F(1,29) = 88.2$ ,  $MSe = 190.4$ ,  $p < 0.0001$ ]. As revealed by a significant relatedness x priming language interaction [ $F(2,58) = 23.1$ ,  $MSe = 24.8$ ,  $p < 0.001$ ,  $F(2,179) = 3.5$ ,  $MSe = 143.3$ ,  $p < 0.05$ ], priming did not affect the percentage of errors when the translation was from SA to MSA (5.8%) than when it was from Hebrew to MSA (5.7%). Hebrew primes were effective regardless of whether they were cognates or non-cognates with the MSA targets. This pattern is compatible with the pattern founded in the analysis of RTs and suggest that cognate factor between Hebrew and Arabic is influential as between the two forms of Arabic.

### ***Discussion***

The present study was designed to examine whether cognates in first language give advantage to second language students in learning situation. To achieve this goal, I compared the performance of native Arabic speakers in lexical decision task and translation priming. My choice to the relations between the two forms of Arabic (SA and MSA) with to the relations existing between MSA, was determined by the morphophonological similarity of these two Semitic languages.

Presenting translation-equivalents in SA as primes led to speeded and more accurate performance of lexical decisions to targets in LA. This facilitation was greater when the two translation equivalents were cognates than when was the prime and targets were not cognates. Cognate pairs maintained a similar level of priming at both language conditions. Namely, Hebrew translation equivalents presented as primes also improved the performance of lexical decisions to targets in MSA, as measured by both RT and

accuracy. However, the priming effect between cognate translations was larger when the prime was in Hebrew than when the prime was in SA. In addition, the significant repetition effects between cognate pseudo-words suggest that form repetition might have partly accounted for the overall larger repetition effects for words. However, the significant repetition effects for non-cognate translation equivalents demonstrate that form or other type of shallow analysis cannot be the single account. This interpretation is consistent with studies in the visual modality, in which the translation occurred between languages with different orthographies such as Korean and English (Jin & Fischler, 1987), or Chinese and English (Chen & Ng, 1989). Further, the semantic factors might explain the repetition effects across non-cognate words. This pattern indicates that, in addition to being indirectly connected via the semantic system, translation equivalents are also linked at the lexical level.

The most important outcome of the present study however, is that in the cognate condition, there is no significant difference between the characteristics and the magnitude of the priming relations the two forms of Arabic have with each other and those found between Hebrew and MSA. The interpretation of this pattern of priming by translation equivalents across Hebrew and MSA and across SA and MSA might shed on the lexical organization of the languages in the cognitive system of the native Arabic speaker. Two accounts might explain this difference. One is that it reflects the difference between priming across the first (SA) and MSA, and priming across Hebrew and MSA. This account, however, is challenged by the fact that in the present experiment the primes were in L1 and the targets in L2. Comparing the speed of word-translation and picture naming, previous studies found that the strength of the

lexical links between translation equivalents in L1 and L2 is asymmetrical, stronger when the translation is from L2 to L1 than vice-versa (Kroll & Stewart, 1990). Moreover, because our participants learned Hebrew on the basis of MSA (at school), the translation of Hebrew words into MSA words, should have been more “natural” than the translation of SA words (L1) into MSA words. This directs us with a second account, which is that whereas priming between translation equivalents in Hebrew and MSA reflected primarily semantic relationship and cognate relationship, priming between the two forms of Arabic reflected, in addition, the consequence of episodic lexical associations based on mundane use. Indeed, the larger priming effects between Hebrew-MSA than between SA-MSA cognate words suggests that cognate relationship was more conspicuous when two formally studied languages were involved than when one of the languages was the mother tongue particularly because, in this case, the mother tongue has no written form. Additional support for the latter hypothesis is provided by the larger priming effect induced by Hebrew than by SA cognate pseudo-words, where neither semantic factors nor lexical associations could have an influence.

A native speaker requires the integration of the present results with additional findings, as reported by Ibrahim and Aharon-Perez (2005). As reviewed in the introduction, cross-lingual semantic priming effects on SA targets were practically identical for MSA and Hebrew and were significantly lower than the intra-lingual semantic priming in SA. For both language pairings, the semantic priming was larger when the primes were presented in SA (and the targets in either Hebrew or MSA) than when the primes were presented in one of the second languages and the targets in SA.

These findings align nicely with the previously reported asymmetry in cross-lingual semantic priming (Altarriba, 1990; Keatly & deGelder, 1992; Keatly, Spinks & deGelder, 1994). The observed asymmetry of priming efficiency is usually attributed to the fact that words in a second language have closer connections with their meanings than do words in the first language. The above interpretation was further supported by the absence of long-lag repetition priming by translation equivalents in either Hebrew or MSA on lexical decisions to target words presented in SA, while regular within-SA repetition effects were found at similar lags (Ibrahim & Aharon-Perez, in press). This pattern also corresponds with similar findings, reported from studies investigating long-lag repetition effects upon translation from a second language to a first language (e.g., Cristoffanini et al., 1986; Gerard & Scarborough). Also, the influence of cognate's relationship on priming between translation equivalents is well established in cross-lingual semantic priming (de Groot & Nas, 1991).

In summary, the outcome of the present study supports the existence of active lexical links between translation equivalents. Such links may exist in parallel to conceptual semantic overlap, and be sensitive to the morpho-phonemic structure of the words. Previous partial-repetition studies in Hebrew showed reliable priming between words that share a root but have no obvious semantic relationship (Bentin & Feldman, 1990). Similar results were reported in a masked-priming study suggesting that sharing a common root affects the processing of the target during bottom-up processing (Frost et al., 1997). The currently observed pattern of differences between priming MSA words by SA or Hebrew translation equivalence suggests that the lexical connections are not only influenced by linguistic factors but also by the manner in which L2 is used,

and subjectively perceived. Specifically, since the structural similarity between Hebrew-MSA and SA-MSA cognate words was equivalent, the magnitude of the priming effect induced by cognate's relationship should have been the same. Hence the larger priming effects for cognate Hebrew – MSA than SA – MSA pairs suggest that non-linguistic factors qualified the influence of the linguistic factors in determining the magnitude of the cognate's relationship effects. Support to this hypothesis came from the cognate's relationship factor, which is reflected, primarily in the larger priming effects for Hebrew – MSA than for SA – MSA cognate pseudo-words.

In conclusion, in concert with previous findings (Wranger, Spratt & Ezzaki, 1989), the present study indicates that similarity among languages reflected by cognate's relationship, should influence linguistic bilingual performance. The question, if the superiority of the Arabic speaking children in the early stages of Hebrew literacy acquisition is due primarily to the substantial similarity between the two languages, and not to ecological and social factors, fall beyond the goals of this study and further investigation should be done to answer this question. However, the data gained in this study concerning the structural relationship between languages should be taken into consideration when we using pedagogical methods in teaching second language (L2). Cognate or "sister" words that share common origins and meanings across languages could be a valuable resource in giving explicit instruction and practice in word analysis that could be taught to students. This instruction method and intervention actually based on transferring vocabulary knowledge for words that have cognate status in the two languages. Recent studies on this topic in other languages (Spanish-English bilinguals) have already described how students benefit from cognate recognition training (Nagy,

García, Durgunoglu & Hancin-Bhatt, 1993) and transfer of phonological awareness (Durgunoglu, Nagy & Hancin-Bhatt, 1993). Based on the data collected in the current cross-language study a similar line of intervention is suggested in which word roots and the meanings of common prefixes and suffixes should be learned in order to help children at early grades to acquire and understand new words. Specifically, the intervention suggested focused on increasing Arabic student's awareness of Arabic/Hebrew cognate words and ability to use cognate recognition as a legitimate and productive comprehension strategy. For example, Arab students have a great advantage when they read words like *zevel* and *katav* (in Hebrew) and are able to understand them because of their Arabic cognates, *zibel* and *kataba*. This method of instruction suggests that the Arabic-instructed children could be able to access knowledge of the cognates in Arabic to identify the meaning of the words on Hebrew.

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## Appendix

a.

**MS Arabic primes, spoken Arabic and Hebrew non-cognate targets, their rated frequencies, and their English translations**

Primes: MS Arabic	Freq	Targets: Spoken Arabic	English	Primes: MS Arabic	Targets: Hebrew	Freq	English
هَيِّن	4.1	هَوَّيِّن	easy	مَرَبَّع	רַבּוּעַ	3.8	square
تَرْبِيَّة	3.9	تَرْبَاي	education	رَأْس	רֶאשׁ	4.7	head
أَسْمَنْت	3.2	شَمِيْنْتُو	cement	شَعْر	שֵׁעַר	4.2	hair
أَمْرَأَة	3.6	مَرَة	woman	أَصْبَع	אֶצְבַּע	4.0	finger
سَاخِن	3.9	صَخِن	hot	حَمَار	הַמּוֹר	4.4	donkey
أَغْنِيَة	4.3	غَنَّا ي	song	بَيْت	בֵּית	4.8	house
بَاكِر	3.6	بَكِيْر	early	نَمَلَة	נַמְלָה	3.8	ant
دَوَّاسَة	3.3	دَعْدَاسَة	pedal	سَأَل	שָׁאַל	4.8	ask
ظَا بَط	4.4	زَا بَط	officer	وَادِي	וְאָדִי	3.6	vally
كَنْبَة	3.7	كَنْبَا ي	sofa	سَلَام	שְׁלוֹם	4.3	peace
بَان	3.3	بِيْن	appear	زَبَل	זָבַל	3.9	garbage
إِقْتَنَع	3.4	تَقْنَع	convince	عَالَم	עוֹלָם	4.7	world
دَائِرَة	4.6	دَوِيْرَة	circle	أَكَل	אָכַל	4.7	eat
مَدْفَأَة	3.2	دَقَا ي	stove	حَبَل	חֶבֶל	3.6	rope
مَقْلَاَة	4.5	قَلَا ي	fritter	بُنْر	בָּאָר	4.1	well
مِرَاَة	3.5	مِرَا ي	mirror	مَكْتُوْب	מַכְתָּב	3.6	letter

wind	4.6	רוח	ريح	kidney	كلوة	3.3	كلية
church	3.8	כנסיה	كنيسة	machine	מכנה	3.3	ماكنة
mosque	3.2	מסגד	مسجد	pride	كبرية	3.6	كبرياء
piper	3.56	פלפל	فلفل	hundred	مئة	4.7	مائة
wolf	3.6	זאב	ذئب	player	لعيب	4.1	لاعب
miserable	4.3	מסכן	مسكين	relax	إطمن	3.4	إطمأن
fast	4.8	צום	صوم	iron	مكوى	3.3	مكواة
wire	3.9	חוט	خيط	community	طائفة	4.9	طائفة
tounge	4.0	לשון	لسان	married	نحوز	4.4	تزوج
petrol	3.7	נפט	نפט	twin	توم	4.0	توأم
carpenter	3.8	נגר	نجار	threat	بخوف	4.7	مخيف
key	4.8	מפתח	مفتاح	clap	زقف	3.3	صقق
flash	4.4	ברק	برق	glue	لرزق	3.3	ألصق
ship	3.7	ספינה	سفينة	fly	ذبان	4.6	ذباب
abdomen	4.9	בטן	بطن	complain	تشكى	3.9	إشتكى
cows	3.8	בקר	بقر	smoke	دخنة	4.0	دخان

**b. MS Arabic primes, spoken Arabic and Hebrew non-cognate targets, their rated frequencies, and their English translations**

Primes: MS Arabic	Freq	Targets: Spoken Arabic	English	Primes: MS Arabic	Targets: Hebrew	Freq	English
ثلاجة	3.8	براد	refrigerator	بندقية	רובה	3.9	rifle
جيد	3.0	كوبس	good	أطار	מסגרת	4.3	frame
قطار	5.0	ترين	train	مدفأة	תנור	4.3	oven
حمار	3.5	داب	donkey	دراجة	אופניים	4.3	bicycle
افعى	4.2	حيّة	snake	قبعة	כובע	4.2	hat
سلحفاة	3.4	قرقيعة	turtle	ثعلب	שועל	4.4	fox
صيدليّة	4.8	فرمسيّة	pharmacy	مضخة	משאבה	4.4	pump
قليل	4.5	نتفة	little	فرامل	בלם	3.8	brake
شرفة	4.6	برندة	balcony	تجرأ	העיז	3.0	dare
ستقيم	4.3	دغري	straight	مواد	חומר	3.0	material
اريد	5.2	بدي	want	هجم	התנפל	3.8	attack
مجانا	4.4	بلاش	free	قطيع	עדר	3.9	herd
هنينا	3.1	صحتين	appetite	اشعل	הדליק	4.0	burn
فندق	4.8	أوتيل	hotel	مروحة	מאוורר	4.0	fun
وجبة	4.7	وقعة	meal	صفيحة	פחית	3.9	can
ملل	4.4	فلاس	bored	امعاء	מעיים	3.6	guts
بدأ	4.8	بلش	begin	منديل	מטפחת	4.3	sheet
هؤلاء	4.7	هذول	those	علبة	קופסה	4.1	box
مرّبي	4.1	ططلة	maiden	خامل	אדיש	3.4	apathetic
مسحوق	3.2	بودرة	powder	سعال	שיעול	4.5	cough
حظيرة	3.8	صيرة	fold	أيقظ	העיר	4.6	wake
ستار	3.7	برداي	curtain	ممرّض	אזה	4.5	paramedic
معطف	4.0	كيتوت	jacket	غرفة	חדר	4.2	room
رجل	3.8	زلمة	man	شمّام	מלון	5.0	melon
كبريت	4.7	شحات	matches	خجل	התבייש	3.3	shameful
فرح	4.6	كيف	glad	انسان	אדם	3.3	person
ركلة	3.3	لبطة	kick	خارجا	בחוץ	4.6	outside
منشفة	5.3	بشكير	towel	انبوب	צינור	3.0	pipe
سائق	4.7	شوفير	driver	حذاء	נעליים	3.7	shoes
جنازة	3.4	أجر	funeral	قبضة	אגרוף	3.3	fist

غدا	4.3	بكرة	tomorrow	سمين	שמך	4.4	fat
جوارب	4.9	كلسات	socks	مجنون	משוגע	3.5	crazy

### Notes

<sup>1</sup> Note that, according to this definition, cognate words do not necessarily have an identical phonological (and/or orthographic) structure (cf. De Bot, Cox, Ralston, Schaufeli, & Weltens, 1995).

<sup>2</sup> The lifestyle, language, and social norms of the Druze are similar to those of their Arab neighbors. Although both groups are characterized by strong native language cohesion, they differ in their identification with the majority (Jewish) group. Based on a historical alliance with the Jewish people, the Israeli Druze have a close contact with the Israeli society on the one hand, and close ties and identification with Arab culture and language on the other hand (Abu-Rabia, 1996; Seginer & Halabi-Kheir, 1998)

<sup>3</sup> The auditory presentation was required because, by definition, SA has no written form. Furthermore, the Hebrew and Arabic orthography differ in form and complexity.



**Causal Modeling - Path Analysis:  
A New Trend in Research in Applied Linguistics**

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**Abstract**

This article has the aim of discussing a new statistical trend in research in applied linguistics. This rather new statistical procedure is **causal modeling - path analysis**. The article demonstrates that causal modeling - path analysis is the best statistical option to use when the effects of a multitude of L2 learners' variables on language achievement are investigated in one study. The proposed causal models, which are the property of causal modeling, provide a plausible explanation for the hypothesized relationships among the variables under inquiry. The causal modeling procedure and the statistical test of path analysis will reasonably manifest the causal relationship that naturally exists between the L2 learners' variables and are otherwise overlooked with simple correlational procedures. The paper presents a historical background on the statistical procedures involved in research about L2 learners' variables in the field of ELT. The traditional trend of linear correlation between the variables of concern can be reasonably reconsidered and replaced with the new causal modeling - path analysis procedure. The paper also presents some rudimentary information about path analysis.

## **Introduction**

In the past quarter of the century, research in the field of SLA has grown enormously, with the quantity of published research increasing annually. It is striking, however, that the main thrust of research has been towards establishing how language learners are similar and how processes of language learning are universal. That is, traditionally, the majority of the research in SLA and applied linguistics looked for phenomenon that would presumably affect all the individual language learners. In studies concerned with SLA, researchers have tried to identify universal sequences in development or common processes, such as transfer, cross-linguistic interference, and so forth that would affect everyone in the same way.

In the field of **psychology** two contrasting approaches to the study of human functioning have long been recognized - the experimental and the differential approaches. The former focuses on identifying structures and processes common to everyone - similarities between individuals. In contrast, the latter approach emphasizes differences between people, seeking to identify the most relevant major ways that people vary.

In the field of **applied linguistics**, with the researcher's awareness of the potential impact of learners' differences on L2 learning, an era of research with focus on the L2 learners' variables was marked in the 1970s. Concern about the learner variables resulted in an increasing number of studies that accounted for the **learner's differences** from different perspectives in ESL/EFL contexts. Learners' differences can generally be divided into three categories: **personality**, **cognitive**, and **affective**.

A basic question concerned has been why all individuals with normal faculties successfully acquire their first language but meet with different degrees of success when they attempt to master a second language. The answer to this fundamental question, as the literature shows, concerns the individual L2 learner and lies in his/her personality, cognitive, and affective construct.

Focus on the language learners with a specific emphasis on the individual differences has brought about the most optimal consequences in language pedagogy. The “post method” condition (Kumaravadivelu, 1994), a new era in which the concept of “methodology” is revolutionized, is a turning point in the history of ELT. The basic premise of this new wave of interest is concerned with accounting for differences between the L2 learners (see Brown, 1993; Kumaravadivelu, 1994; Oxford, 1993). The new “post method” era in the field of ELT, nevertheless, requires a great deal of quality research about a great number of L2 learner’s variables in different L2 contexts.

The foundation of language learner variable research is that it examines attributes on which language learners vary and how such variations relate to L2 learning success (Skehan, 1991). According to Skehan four consequences follow from this fundamental approach. First, it encourages quantification of the strength of relationships between any particular learner variable (e.g. attitude) and language achievement. Second, by examining the range of influences on SLA, interesting points of contact between different single learner variables may be revealed. Third, the advantage of having a learner’s variations perspective on research is that it encourages the development of more formal models that relate learners’ variables to one another and to language

acquisition. Fourth, presenting a learner variable framework manifests the multi-causal nature of language learning and also its complexity.

Linguists, psycholinguists, ELT researchers, and L2 teachers generally hold the assumption that there is a relationship between the personal traits of a language learner and his/her success in the task of L2 learning. Brown (1994) believes that inquiry about the L2 learner's variables reveals some facts that yield insights about L2 learning.

To probe into the assumption of the interrelationship between learner variables and his/her success in language learning, it would be fair to hypothesize that there are some relationships, preferably causal, between a number of different variables and L2 achievements. This hypothesis has, in fact, been the focus of much research in the area of ELT. In the following section the literature on learner's variables and L2 learning, considering the statistical procedures involved in these studies, will be reviewed.

### **Background on learner variables research**

Literature on learner variables and L2 learning may be divided into two broad categories i.e. the **simple correlational studies** (bivariate and multivariate) and the more complex correlational studies called "**causal modeling**". The former is focused directly on the linear relationship between some learner's variables and L2 achievement, and the latter tests the causal relationship among some learner's factors and L2 learning.

While, a multitude number of the studies on learner variables seem to belong to the first category, research using causal modeling to investigate the causal relationship among many learners' factors and L2 learning seem more promising.

Majority of the studies from the first research trend are normally focused on just few variables from a domain (cognitive, affective, or personality). Gardner, Trembly, and Masgoret (1997) contend that there is a lack of research examining the relationships among cognitive, affective, and personality variables simultaneously. Similarly, Onwuegbuzie, Baily, and Daley (2000) state that only a few studies have examined the role of cognitive, affective, personality, and demographic variables concurrently. According to Onwuegbuzie et al. (2000), two studies that investigated the relationship between several classes of variables and L2 achievement are Gardner, et al. (1997) and Ehrman and Oxford (1995).

The other line of research, **causal modeling**, shares the characteristic of being based on causal models. Such models tend to be fairly elaborate and consider the simultaneous influence of several learners' variables on L2 learning. Among the studies using causal models the following can be listed (Clement, 1987; Clement and Kruidnier, 1985; Ely, 1986; Fouly 1985; Gardner, 1985; Gardner and MacIntyre, 1992, 1993 Lalonde, and Pierson, 1983; Lalonde and Gardner, 1984; MacIntyre and Charos, 1996; Rastegar, 2003; Wang, 1988).

**Attitudes, motivation, and anxiety** are the most popular constructs included in the causal models. Gardener and his associates have, over several years, used the Attitude /

Motivation Test Battery (AMTB) in studies leading to the development of the socio-educational model of language acquisition (Gardner, 1985). MacIntyre and Charos (1996) contend that while portions of the model have been, and will continue to be, updated to incorporate new research results, the basic model has consistently been replicated. For a review, see (Ehrman and Oxford, 1995; Gardner, 1985; Gardner, Trembly, and Masgoret, 1997; Rastegar, 2003).

Rastegar (2003), in extensive research on a number of language learners' variables using causal modeling and path analysis procedures, has established a framework for the study of learners' variable in EFL contexts. In her study, besides 'attitudes', 'motivation', and 'FL anxiety', variables such as 'language ego', 'self-esteem', 'locus of control', 'IQ' and 'sholastic ability' have also been considered in causal models using path analysis as the statistical test.

Literature on learner's differences and L2 learning shows that studies are mostly conducted in ESL contexts. Moreover, the results of the studies are not all conclusively consistent. This reveals the fact that the field of applied linguistic benefits from more research, particularly that which utilizes causal models, to provide a more reliable and comprehensive picture of both EFL/ESL learning in different cultures.

### **Background on path analysis**

Path analysis - a method for studying patterns of causation among set of variables - was developed by Sewall Wright. Path analysis is an important statistical tool to gain a deeper understanding of the relationship among variables. It is a method for studying

the direct and indirect effects of variables hypothesized as causes of variables treated as effects. Path analysis, as Pedhauzer (1982) put it, is not a method for discovering causes, but a method applied to causal models formulated by the researcher on the basis of knowledge and theoretical considerations. Pedhauzer, then, quotes (Wright, 1934) as saying that

... the method of path coefficients is not intended to accomplish the impossible task of deducing causal relations from the values of the correlation coefficients. It is intended to combine the quantitative information given by the correlations with such qualitative information as may be at hand on causal relations to give a quantitative interpretation. (Pedhauzer, 1982, p. 580)

Path analysis is closely related to multiple regression. Regression may be considered a special case or simplest form of path analysis. Path analysis and related techniques are also called "causal modeling". The reason for this name is that the techniques allow the testing of theoretical propositions about cause and effect without manipulating variables. However, the *causal* in "causal modeling" refers to an **assumption** of the model rather than a property of the output or consequence of the technique. That is, it is assumed some variables are causally related, and test propositions about them using the techniques (Bryman and Cramer, 1997; Pedhazure, 1982).

This versatile statistical tool is specifically ideal when language learners' variables are of concern in research. Language learners' variables by their very nature interact with each other and have a direct and indirect effect on each other in the complicated process of L2 learning. This means that if causal modeling and path analysis is used in research on learners' variables, a more realistic relationship between variables will be

manifested and more reliable results will be attained (see Rastegar, 2003).

### **Path diagrams and jargon**

There are customs about displays and names in path analysis. Arrows show assumed causal relations. A single-headed arrow points from cause to effect. A double-headed, curved arrow indicates that variables are merely correlated; no causal relations are assumed. The independent (X) variables are called exogenous variables. The dependent (Y) variables are called endogenous variables.

A *path coefficient* indicates the direct effect of a variable assumed to be a cause on another variable assumed to be an effect. Path coefficients are standardized and consequently they can be compared directly. Path coefficients may be written with two subscripts. The path from 1 to 2 is written  $p_{21}$  - the path to 2 from 1; note that the effect is listed first. A path analysis in which the causal flow is unidirectional (no loops or reciprocal causes) is called *recursive* (Bryman and Cramer, 1997; Pedhazure, 1982).

One of the specific characteristics of path analysis is that except for the constant dependent variable, the status of other variables of the study will vary between independent and intervening, depending on the structure of the model and the specific calculation related to a particular equation. In statistical analysis intervening variables - those that arrows are pointing to - are considered as the dependent variable for that particular model. For the typical path analysis there are some assumptions which are as follows.

1. All relations are linear, additive, and causal. The causal assumptions (what causes

what) are shown in the path diagrams.

2. The residuals (error terms) are uncorrelated with the variables in the model and with each other.
3. The causal flow is one-way. That is, reciprocal causation between variables is ruled out.
4. The variables are measured on interval scales.

### **Conclusion**

The advent of constructivist theory of learning (1980s & 1990s & early 2000) which emphasizes Roger's humanistic views seems to have brought a new dimension - a shift in attention to the language learners. As Brown (2000, p. 156) asserts "... we have now returned to a recognition of the acute importance of individual variation, especially in the realm of education." Generally, the research trends in SLA are harmonious with the trends in the school of thought in SLA. With awareness in the research community that concentrating on learners' variables would be more informative, there was a major change towards considering L2 learners' differences instead of their similarities in research. This shift in SLA research trends seems to have been conceptualized from 1980s and has continued to present.

In this regard, there appears to be consensus among ELT researchers and applied linguists that research on the language learners' variables done in the traditional manner

of considering only few variables and looking for just a linear relationship between these variables and L2 achievement will never provide comprehensive, informative, and valuable information about the nature and complexity of these relationships. Consequently, this kind of research would not, in effect, make an appropriate contribution to the field of SLA and particularly to TESL/TEFL in finding remedies for the ever-lasting problem of lack of optimal success among some L2 learners.

The research trend of causal modeling and the tendency of the researchers to consider a number of learners' variables simultaneously in one study indicate that this line of research is well under way to making a significant contribution to the field of ELT. Future research on L2 learners' differences should give serious attention to the process of model construction involving more L2 learners' variables from different variable domains.

The results of Rastegar's (2003) study clearly demonstrate that causal modeling procedures can serve some essential purposes such as variable identification, model construction, and framework design. Variable identification provides a more comprehensive understanding of L2 proficiency by identifying the best predictors of success in L2 learning and this will contribute to model construction. Model construction, in turn, contributes to framework design or framework modification. In fact, detecting predictors of success in FL learning may not be considered the ultimate aim of the research in this area, rather it is a bridge that fills the gap between variable identification and framework construction. All these steps and procedures are interrelated and seem essential for research on learners' variables and L2 success. This

important task can only be done by the use of the most appropriate statistical means, that is, causal modelling - path analysis.

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**Is Listening Comprehension Influenced by the Background Knowledge  
of the Learners?  
A Case Study of Iranian EFL learners**

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**Abstract**

Listening has long been the neglected skill in second language acquisition, research, teaching, and assessment. However, in recent years there has been an increased focus on L2 listening ability because of its perceived importance in language learning and acquisition. The present study explored the effect of background knowledge on listening comprehension. Two TOEFL preparation classes allocated to EFL students took part in the study. The experimental group received some treatment in the form of topic familiarity, and their background knowledge was activated. Then a 50-item TOEFL test of listening comprehension was administered to both experimental and control groups. A statistical analysis of the results provides some evidence in support of the effect of background knowledge on listening comprehension.

**Keywords:** Listening comprehension, background knowledge, L2 listeners, EFL learners.

## **Introduction**

Second language listening comprehension is a complex process and crucial in the development of second language competence; yet, the importance of listening in language learning has only been recognized relatively recently (Nunan, 1998; Celce-Murcia, 2001). Since the role of listening comprehension in language learning was either overlooked or undervalued, it merited little research and pedagogical attention in the past. But at present, some researchers have devoted some time to listening and believe it to be an important skill in teaching and learning. For instance, Nunan (1998) believes that:

... listening is the basic skill in language learning. Without listening skill, learners will never learn to communicate effectively. In fact over 50% of the time that students spend functioning in a foreign language will be devoted to listening.... (p. 1)

As listening is assuming greater importance in foreign language classrooms and in language acquisition (see, e.g., Nord, 1978; Byrnes, 1984; Long, 1989; Feyten, 1991; Dunkel, 1991), researchers have tried to do some detailed study of this skill. One idea that has been of focus is the role of the listener as an active processor and the type of knowledge that he/she brings to the context of listening. In other words, these have been attempts to investigate whether the background of the listener has any effect on the process of listening.

## **Background: Theoretical Perspective**

One aspect of language processing widely held as supporting and enhancing comprehension is that of mental schemata. Research in reading supports the notion that

activating prior knowledge or knowledge of the world and applying this knowledge to new input greatly facilitates processing and understanding (Christen & Murphy, 1991; Graves & Cook, 1980; Hayes & Tierney, 1982; Stevens, 1982). Listening, like reading, is an active process that entails construction of meaning beyond simple decoding. Activation of what is known about the world clearly assists processing the aural code.

Some researchers consider the role of schematic knowledge as one of the factors affecting comprehension. Brown and Yule (1983), for example, describe schemata as “organized background knowledge which leads us to expect or predict aspects in our interpretation of discourse” (p. 248). The listener’s stereotypical knowledge based on prior experiences predisposes him or her to construct expectations in terms of seven areas: speaker, listener, place, time, genre, topic, and co-text. Brown and Yule (1983) contend that the listener uses two basic principles to relate the new information to his or her previous experience: the principle of analogy, i.e. things will be as they were before and the principle of minimal change, i.e., things are as like as possible to how they were before.

In a discussion of ways in which listeners form inferences and use them to interpret spoken language, Rost (1990 as cited in Schmidt-Rinehart, 1994) suggests inferential processes at three levels (lexical or propositional, base or schematic, and interpersonal relevance) and proposes editing principles and procedures by which listeners construct meaning. He defines base meaning for a text as the cultural and experiential frame of reference that makes a text interpretable by a listener. Rost (2002 as cited in Vandergrift 2002) defines listening as a process of receiving what the speaker actually says,

constructing and representing meaning, negotiating meaning with the speaker and responding, and creating meaning, and creating meaning through involvement, imagination and empathy. He believes that listening is a complex, active process of interpretation in which listeners match what they hear with what they already know. These theories underscore background knowledge as a critical component of the listening process.

### **Empirical Studies**

Few empirical studies have explored the potential relationship between prior knowledge and listening comprehension. Mueller (1980) investigated the effects on listening comprehension of locus of contextual visuals for different levels of aptitude of beginning college German students. The aptitude variable consisted of two levels (high and low) that was determined by the subjects' grades in the preceding German course. He found that the students who had the contextual visual before hearing the passage scored significantly higher on the recall measure than those in the visual-after and the no-visual groups.

In order to determine the influence of religion-specific background knowledge on the listening comprehension of ESL students of varying religion, Markham and Latham (1987) used passages describing prayer rituals of Islam and Christianity. The data indicated that religious background influences listening comprehension. The subjects in this study recalled more information and provided more elaborations and fewer distortions for the passage that related to their own religion.

Long (1990) conducted an exploratory study of background knowledge and L2 listening comprehension. Her third-quarter students of Spanish listened to two passages- one was deemed familiar, the other unfamiliar. Comprehension was assessed by a recall protocol in English and a recognition measure, a checklist comprised of statements that referred to the content of the passage and purposefully false statements that were plausible according to the context. On the checklist, students identified items that were mentioned in the passage. Although the English summaries revealed a higher proportion of correct idea units for the familiar topic, no significant differences were found between the familiar and unfamiliar passages for the recognition measure.

Bacon's (1992) research sheds light on the effect of background knowledge during listening process. She investigated strategies used in three phases identified by Anderson (1985): perceptual, parsing, and utilization. Her sample comprised students of Spanish enrolled in the first course beyond the degree foreign language requirement. After listening to two expository passages selected from a Voice of America broadcast, subjects reported their strategy use and comprehension in an interview situation. Regarding background knowledge, she found little use of advance organizers during the perceptual phase, but effective use of previous knowledge during the utilization phase. She reported that successful listeners tended to use their personal, world, and discourse knowledge while less successful listeners either built erroneous meaning from their prior knowledge or ignored it altogether.

Chiang and Dunkel (1992) investigated the effect of speech modification, prior knowledge, and listening proficiency on EFL listening comprehension. After listening

to a lecture, the Chinese EFL students' comprehension was measured by a multiple-choice test that contained both passage-dependent and passage-independent items. Regarding topic familiarity, the subjects scored higher on the familiar-topic lecture than on the unfamiliar-topic lecture.

Schmidt-Rinehart (1994) carried out a study with the main purpose of discovering the effects of topic familiarity on L2 listening comprehension. University students of Spanish at three different course levels listened to two familiar passages, one about a familiar topic and another about a novel topic. The passages represented authentic language in that the recordings were from spontaneous speech of a native speaker. Listening comprehension was assessed through a native language recall protocol procedure. Subjects scored considerably higher on the familiar topic than on the new one. She concludes that background knowledge in the form of topic familiarity emerges as a powerful factor in facilitating listening comprehension.

With a glance into the existing literature, it is felt that there is a shortage of studies with respect to background knowledge and listening comprehension in EFL contexts. It seems that the EFL field is in need of further studies investigating the issue of background knowledge and listening comprehension. Therefore, it is hoped that the results of this study cast some light on this issue and pave the way for a better teaching of listening.

## **The Study**

### **The Research Question**

The main concern of the study is: Is Listening Comprehension Influenced by the Background Knowledge of the Learners?

### **Subjects**

This study was conducted with two classes each containing 12 students studying in TOEFL preparation classes. The class which received the treatment was in Pouya Language Institute and the control group was in Shiraz University Language Center (SULC). They were chosen based on their availability.

In terms of homogeneity, the two classes had roughly spent 400 hours of instruction in English before coming to the TOEFL classes. During that period, they had studied New Interchange Books 1, 2, and 3 and later on Passages 1 and 2 which are supplementary to the New Interchange Books. They are considered as upper-intermediate to advanced levels. They also had a TOEFL placement examination before entering the TOEFL classes.

Since the placement examinations taken were different, the researcher used another TOEFL test (ETS, 2001) in a pilot study to determine their homogeneity. The test consisted of 140 multiple questions, i.e. 50 listening comprehension, 40 structure and written expressions and 50 reading comprehension. A t-test was run between the two tests to see if there was any significant difference between the two groups or not. There was no significant difference between the two groups ( $t\text{-value} = 0.184$ ,  $P > 0.05$ ,  $df = 22$ ). In order to check the listening ability of the two groups before the experiment

and see whether there was any difference in their level of performance, the grades of the students on the listening section of the test were subjected to another t-test. There was again no significant difference between the two groups (t-value = -0.06,  $P > 0.05$ , df 22).

### **Instrument**

A TOEFL test of language proficiency constructed by the Educational Testing Service (ETS, 2001) was used. The test given to the students consisted of 50 listening questions which aimed to measure their listening comprehension. The attempt was to choose a test that was not available to the students.

### **Procedures for Data Collection and Data Analysis**

Based on the topics covered in the listening material the students under study received instruction for two consecutive sessions by the researcher and the third session was devoted to the test. Students were asked to make themselves ready before coming to the class. They were asked to work on the topics by using different sources such as the Internet. The materials which were supposed to be taught included five topics: student housing, the Ice Age, old architecture, coffee drinkers, and photography. The first class session was divided into two forty-five minute halves and two of the topics, i.e. student housing and coffee drinkers, were discussed in each half. Since the other three topics seemed to be a little bit technical and it was felt that the students might not be able to discuss them for a longer period, the second session was divided into three thirty-minute parts and these three topics, i.e. the Ice Age, old architecture, and photography were discussed. Through the discussion, the information was elicited from the students. The

students were asked to put forward their opinions and findings and then the researcher tried to challenge them. At the end of each discussion, the researcher wrapped up the topic and provided them with adequate information on the basis of materials in the listening test.

The control group test was held simultaneously. The two tests were performed by using a tape recorder and a tape inside the classroom and the time limit was the standard time considered by the testing organization, i.e. 35 minutes. The tape was played only once.

After collecting the data and scoring the tests, statistical analyses were performed using SPSS for Windows, version 10.0. First, by using the descriptive statistics, the mean, standard deviation, range, skewness, and kurtosis for both groups were calculated in order to examine the central tendencies and variability of the scores. Then, a t-test was run to see if there was any significant difference between the experimental and control groups.

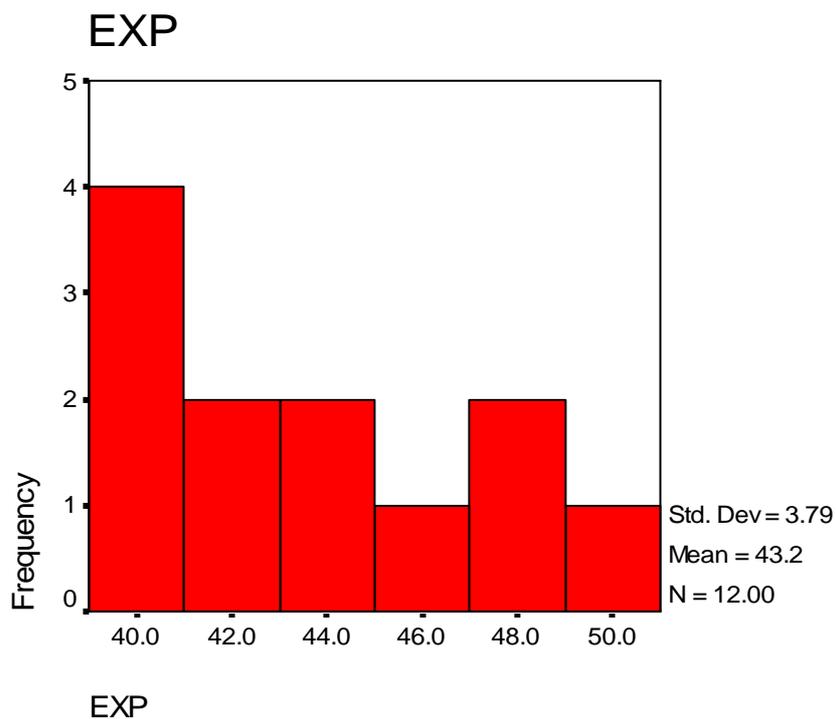
### **Results and Discussions**

Descriptive statistics for the results of the application of the test to the experimental group (EG) and control group (CG) are presented in table 1.

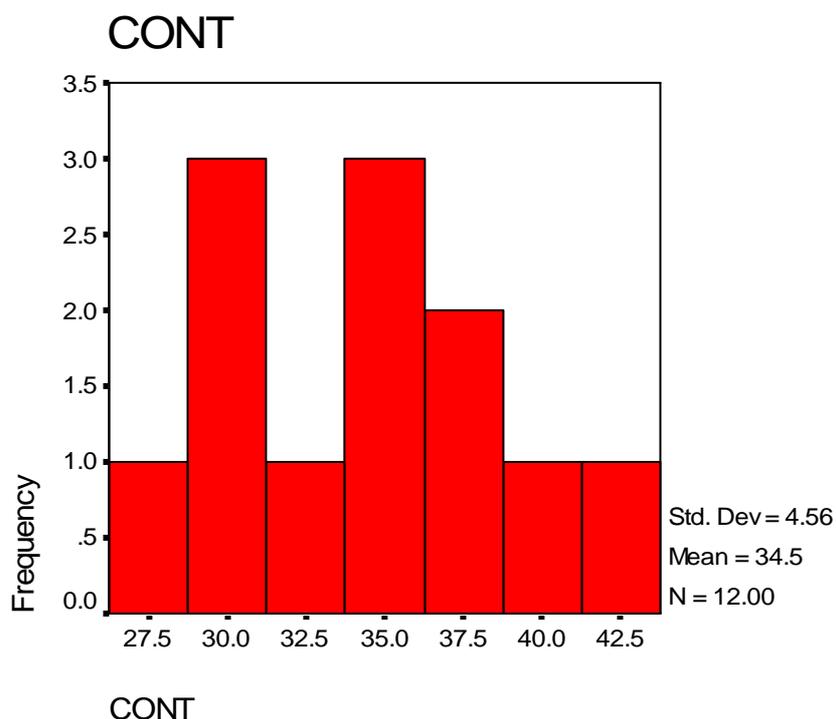
**Table 1: Descriptive statistics for the results of the test**

		<b>EXP</b>	<b>CONT</b>
<i>N</i>	<i>Valid</i>	12	12
	<i>Missing</i>	0	0
<i>Mean</i>		43.16	34.5
<i>Std. Deviation</i>		3.78	4.56
<i>Range</i>		11	15
<i>Skewness</i>		0.666	0.403
<i>Kurtosis</i>		-0.88	-0.67

Figures 1 and 2 show the frequency of the scores of EG and CG and their distributions.



**Figure 1. The frequency of the scores of the EG.**



**Figure 2. The frequency of the scores of the CG.**

The mean of the EG is 43.16, and that of CG is 34.5. The standard deviation for the EG is 3.78, and that of the CG is 4.56. The range of the scores of the EG is 11, whereas that of the CG is 15. Both the range and the standard deviation indicate that there is more variation among the subjects' scores of the CG as compared with the EG. Considering the obtained data, one can claim that the subjects in the EG group performed more homogeneously than those of the CG. Therefore, it can be concluded that this homogeneity is due to the treatment given to the EG.

The distribution of the scores of both EG and CG is positively skewed, though the former is more positively skewed (0.666 and 0.403, respectively). This shows that the scores of the EG group have been closer to each other than those of the CG. In addition,

the distribution of the scores obtained from the application of the test to both groups is flat (EG= -0.88 and CG= -0.67). This, too, indicates the fact that there is a rather higher variation among the subjects' scores of the CG.

In all, putting all descriptive statistics together, it can be assumed that the performance of the EG has improved due to the treatment, and subjects in this group performed more homogeneously than those in CG.

Table 2 represents the t-test and the difference between the means of the two groups (EG and CG).

**Table 2: Independent samples t-test.**

**The t-test and the difference between the means of the two groups**

<b>t</b>	<b>df</b>	<b>Sig. (2-tailed)</b>	<b>Mean Difference</b>	<b>Std. Error of Difference</b>
5.06	22	.000	8.66	1.71

As the table indicates, the difference between the means of the scores of the two groups is statistically significant ( $P < 0.05$ , t-value = 5.06). This shows that the subjects in EG performed better in the test and this better performance seems to be the result of the treatment (familiarizing them with the materials and activating their background knowledge) given to them.

The result of the study supports those of Markham and Latham (1987), Chiang and Dunkel (1992), and Schmidt-Rinehart (1994), since they all claimed that background knowledge and topic familiarity would improve students' performance in listening comprehension.

The results of the study, on the other hand, contradict that of Long (1990) in that she observed no significant difference between the familiar and unfamiliar passages for the recognition measure, though the English summaries revealed a higher proportion of correct units for the familiar topic. At the same time, the results of the study contradict the perceptual phase of Bacon's (1992) study in which she found little use of advance organizers during this phase.

### **Conclusions**

In sum, the findings of the study show that the experimental group had a better performance as compared with the control group in their listening comprehension, and this better performance in the listening test seems to be the result of the background of the subjects in the EG.

Although one study cannot dictate instructional practice, it can provide directions. Findings regarding the supportive role of background knowledge are consistent with the findings of the majority of L2 listening studies. It seems, therefore, that educators who advocate the use of advance organizers and other types of pre-listening exercises that activate appropriate background knowledge are making suggestions that are congruent with the research results. It is important for teachers to recognize that students' existing

knowledge contributes significantly to their comprehension and that listening is not a passive activity. Taking time to assess the conceptual base the listeners bring to the text will enable teachers to go beyond dealing with the linguistic information in order to help students understand and make their learning more meaningful. The result of this study and others indicate that helping students make connections to their previous knowledge in order to build a mental framework with which to link the new information might facilitate comprehension.

Students' comments after the listening exercise may also provide insight for educators. Many students have indicated that they experience difficulty making the transition from understanding classroom talk to understanding natural language. Their comments suggest that more exposure to authentic speech as well as activating their prior knowledge might be helpful. In order to prepare students for communication as it exists in the real world, it is necessary for teachers to expose them to natural, native-like speech. In planning lessons, teachers should incorporate authentic listening materials from a variety of registers as well as realistic listening tasks.

The results of this study, nonetheless, suffer from a few shortcomings. First, in this study the effect of background knowledge in the form of topic familiarity was investigated with the students of upper-intermediate to advanced levels. Some questions are left unanswered. Do more or less proficient listeners than this group use schema-based processing to the same degree? At some level of listening proficiency, does linguistic knowledge override the effects of background knowledge? Second, this study was conducted with just one type of instrument, i.e. a piece of listening taken

from TOEFL examination, and the aim was authentic speech. Future studies can use other instruments like video tapes and see the effects of different types of speech - the one which stimulates a radio announcement, a television interview, etc. Finally, this study was conducted with a small number of students and the sample was limited. Studies can be done with a larger population and see the results.

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## **Chinese Learners and English Plural Forms**

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### **Abstract**

Many Chinese students experience difficulty with the use of plural forms in English. The authors of this article explore this phenomenon by examining features of Chinese and English that may affect plural formation, highlighting specific areas of challenge for Chinese learners, and presenting an array of recommended instructional resources.

**Key words:** Chinese learners, plural forms, EFL, ESL, instructional practices

## **Introduction**

Learning, including learning a second or foreign language, is influenced by students' prior knowledge (Brown, 2000). In the case of Chinese students learning English, prior knowledge of Chinese language patterns may notably affect their acquisition of English (Brown, 2000; Lightbown & Spada, 1999; Odlin, 2003). Language transfer, or the incorporation of patterns from the native language into the target language, is a common source of errors among learners of a second or foreign language (Brown, 2000; Lightbown & Spada, 1999). While by no means the only source of learner errors, language transfer often plays a significant role (Lightbown & Spada, 1999).

As reported by Jia (2003), one area where language transfer is particularly prevalent among Chinese learners is the formation of English plurals. Moreover, in a study analyzing English errors of Chinese learners, Mohamed, Lian, and Eliza (2004) pinpoint the misuse of singular and plural forms as one of the errors. This phenomenon may spring from different morphological and syntactic features between Chinese and English. Grammatically, Chinese is not as complex as English in that it possesses little of what is traditionally known in European languages as inflectional morphology (Norman, 1988). Instead, as Norman further indicates, word order, particles, and prepositions carry most of the grammatical roles in Chinese. In contrast, English is an inflectional language, in which prefixes or suffixes play a significant grammatical role (Fromkin & Rodman, 1998).

This article explores the challenges that Chinese students encounter in the formation of English plurals. To this end, the authors (a) examine linguistic features of Chinese

and English that may affect plural formation in English, (b) highlight specific areas of challenge for Chinese learners, and (c) present an array of recommended instructional practices.

### **Aspects of the Chinese Language that Affect the Formation of Plurals in English**

To better understand the challenges Chinese students encounter when forming English plurals, some background pertaining to the writing system and structure of both languages is essential.

*Writing system.* According to Chen (1999), the earliest reliable records of Chinese date back more than 3000 years ago in the form of oracle bone script. From the very beginning, Chinese writing shows its pictographic origin (Norman, 1988). In other words, written Chinese is ideographic, consisting of an individual character or ideogram for every syllable, with each character representing an object or idea rather than a sound. English, on the other hand, is phonographic, with written symbols representing discrete sounds.

It is important to note that the Chinese language, although ideographic, does have a means of representing its sound system in written form. However, this system, Pinyin, is used only as a means of indicating pronunciation. In the Chinese school curriculum, Pinyin is usually taught in the last stage of kindergarten or the first stage of elementary school. After children acquire knowledge of the Chinese sound system, they quickly move on to learning characters, which constitute the Chinese writing system.

*Morphological and syntactic structure.* English and Chinese belong to different language families. English is classified as an Indo-European language, whereas Chinese is of the Sino-Tibetan family (Fromkin & Rodman, 1998). A distinctive characteristic of Sino-Tibetan languages is monosyllabism, which means that each morpheme is represented by a syllable (Ho, 1997). However, in modern Chinese, according to Chao (1968), words have become dissyllabic or polysyllabic. Specifically, separate words are often joined together to make new meanings. Frequently, when words are linked, the resultant word is idiomatic, having a different meaning than its individual elements. For example, the word, *dian bing xiang* (电冰箱, which means refrigerator, is composed of three words *dian* (电) electricity, *bing* (冰) ice, and *xiang* (箱) box.

Additionally, Chinese grammar is less morphologically complex than English grammar (Li & Thompson, 1981). Chinese characters are invariable in structure and allow no internal changes (Ho, 1997). Thus, grammatical functions and word meaning cannot be indicated through inflectional or derivational changes as in English. Instead, Chinese uses word order or functional words to realize grammatical roles. For example, the character *le* (了) is used to indicate that an action has been completed (similar to the perfect tense or past tense in English), as illustrated in the following sentences: *Zuo tian wo qu le Zhongshan Gong Yuan.* (昨天我去了中山公园). *I went to Zhongshan Park yesterday.* Similarly, the character *zhe* (着) indicates a continual action or state. This is seen in the following sentence: *Ta men zheng tan zhe hua ne* (他们正谈着呢). *They are having a talk just now.*

In sum, two aspects of the Chinese language that are pertinent to the formation of English plurals are the ideographic writing system and the morphological and syntactic structure of the language. These aspects are markedly different from those of English. Understandably, when Chinese students grapple with the incongruence in these two linguistic systems, problems can arise. Specifically, the use of plural forms presents challenges to many Chinese students learning English.

### **Plural Forms in Chinese and English**

*Chinese plural forms.* As previously noted, the Chinese language does not use inflections to realize grammatical functions. Rather, Chinese is highly contextual. For this reason, the formation of plurals involves a certain degree of ambiguity. To illustrate, the sentence, *shu xia you tu zi* (树下有兔子), can be translated as (a) *There is a rabbit under the tree*, (b) *There are rabbits under the tree*, or (c) *There are rabbits under the trees*. The meaning must be derived from the greater context, or the clues in the overall discourse.

While this reliance on context may appear to the non-speaker of Chinese to be imprecise, there are many instances where the context precisely indicates the plural form. An example is as follows: *Yi xie xue sheng zai jiao shi li, lao shi zheng gei xue sheng jiang yi ge gu shi.* (一些学生在教室里, 老师正给学生讲一个故事). Literally these two sentences are translated, *\*There are some student in the classroom. Teacher is telling a story to student.* In the first sentence, the determiner, *some*, is used to indicate that there is more than one student. However, in the second sentence, there is no determiner. It is expected that the reader will naturally understand the plural meaning of

the word *student* because of the context already established within the previous sentence. Thus, context is a primary means of addressing the plural form in Chinese.

However, plurals can be formed in two other ways. First, the use of a numeral or a determiner in front of a noun denotes the plural meaning. Examples include the following: *wu zhang zhuo zi* (五张桌子 \*five desk) and *na xie xue sheng* (那些学生 \*those student). Second, the addition of the morpheme *-men* to certain types of words can also indicate the formation of a plural. This is illustrated in the following words: *lao shi men* (老师们 teachers), *ren men* (人们 people), *hai zi men* (孩子们 children), *wo men* (我们 we or us). As seen in the aforementioned examples, the morpheme *-men* (们) is used primarily in conjunction with nouns pertaining to people. One restriction regarding the use of this morpheme is as follows: If there is a numeral that indicates a plural form before the noun, *-men* (们) cannot be used; for example, *san ge lao shi men* \*三个老师们 three teacher + plural marker *-men*) is not correct. Thus, this means of forming plurals is somewhat limited. It should be noted that in this regard it is not equivalent to the English plural morpheme *-s* or *-es*.

*English plural forms.* As with the Chinese language, English addresses plural forms in a number of ways. English is a language in which inflectional morphemes are used to show grammatical relationships (Klammer, Schulz, & Volpe, 2004). Klammer, Schulz, and Volpe list eight inflectional morphemes, one of which is the plural morpheme. However, because of the arbitrary nature of the English language, plural formation involves more than just adding a plural morpheme. Specifically, English plurals can be formed through (a) the addition of the morpheme *-s* or *-es*, (b) the changing of one or

more internal vowels, (c) the use of the same form for singular and plural, and (d) the application of the rules of foreign plural nouns to English words (see Table 1).

Most plural nouns in English are formed by adding the morpheme *-s* or *-es* (Azar, 1999). Therefore, the use of *-s* and *-es* is pervasive and somewhat rule-governed. It is widely known that *-es* is used for words ending in *ch*, *sh*, *ss*, *x*, or *z*; however, exceptions exist. Table 1 provides a summary of some common rules for plural formation involving *-s* and *-es*.

**Table 1**

*Common Rules for English Plural Forms Involving -s and -es*

Common Rules of Plural Formation	Examples	Some Exceptions to the Rules
When a noun ends in a consonant + <i>y</i> , change the <i>y</i> to <i>i</i> and add <i>-es</i> .	factory – factories baby – babies	
When <i>y</i> is preceded by a vowel, add only <i>-s</i>	guy – guys boy – boys	
When a noun ends in a consonant + <i>o</i> , add <i>-es</i> .	potato – potatoes tomato – tomatoes	memos, kilos, pianos, photos, solos Note: For some English words, the plural form can be either <i>-s</i> , or <i>-es</i> : zero – zeros/zeroses, volcano – volcanos/volcanoes
When a noun ends in a vowel + <i>o</i> , add <i>-s</i> .	zoo – zoos, bamboo – bamboos, radio – radios	
When a noun ends in <i>f</i> , or <i>fe</i> , change the <i>f</i> or <i>fe</i> to <i>v</i> , and add <i>-s</i> .	wife – wives, shelf-shelves, knife – knives	beliefs, roofs, chiefs, roofs

When a noun ends in <i>ch, sh, ss, x,</i> or <i>z,</i> add <i>-es.</i>	lunch – lunches wish – wishes box – boxes	stomachs
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Adapted from Bo (1998)

Another means of forming plurals involves changing one or more internal vowels. Some examples include *man-men, mouse-mice,* and *goose-geese.* Interestingly, some plurals involve no change at all. In other words, for some lexical items, the singular and plural forms are exactly the same. This is illustrated in the words *deer, sheep,* and *fish.* Finally, because English incorporates words from other languages, some English plurals are formed according to the rules of these languages, as in the case of *criterion–criteria, basis–bases,* and *stimulus–stimuli.*

As depicted in Table 2, Chinese and English are distinctly different in regard to the formation of plural nouns.

**Table 2**

*The Formation of Plurals in Chinese and English*

Chinese	English
The use of a numeral before a noun	The addition of the morpheme <i>-s</i> or <i>-es</i>
The use of a determiner before a noun	The changing of one or more internal vowel(s)
The use of a suffix <i>-men</i> after a person-related noun	The use of the same form for singular and plural
The contextual indication of a plural meaning	The application of the rules of foreign plurals to English words

Understanding these fundamental differences between the two language systems is essential to Chinese students learning to form English plurals. Yet, this alone is not enough. In order to master the nuances of plural formation, Chinese students must also have a thorough understanding of the concept of count and non-count nouns. The matter of count and non-count nouns will be explored further in the next section of this article as the authors address areas of challenge related to English plural forms.

### **Areas of Challenge**

*Omission of the morpheme -s/-es.* Initially, Chinese learners of English may omit the morpheme *-s/-es*. To illustrate, phrases such as \* *three student*, \* *five desk*, and \**ten apple* commonly occur in the beginning and intermediate stages of learning English. As previously noted, students may make these types of errors because they are applying rules from their native language to the formation of plurals in English. In this case, ESL/EFL teachers should emphasize the need to add *-s* or *-es* to the end of nouns referring to more than one thing (i.e., count nouns). Once students master this concept, they will be able to accurately form many English plurals.

*Over-generalization of rules.* English rules tend to be fraught with exceptions, and this is certainly the case with plural forms. As students progress, they encounter the arbitrary nature of English inflections. A problem that emerges at this stage is over-generalization of rules. To illustrate, students may use *gooses* instead of *geese*, or *deers* in place of *deer*. Most English teachers recognize the omission of the morpheme *-s/-es* and the over-generalization of rules as areas of difficulty faced by many beginning and intermediate students in regard to the use of plural forms. However, they may not

anticipate that advanced learners may also make systematic errors. The source of these errors, in many cases, can be traced back to the matter of count and non-count nouns.

*Count and non-count nouns.* Simply put, count nouns are those that can be enumerated or counted. Examples include *desk, tree, and chair*. On the other hand, non-count nouns are mass nouns, which do not normally occur in the plural form. They often refer to abstractions and carry a collective meaning. Examples include *love, honesty, luggage, and water*. In a broad sense, the terms count and non-count nouns are conceptualized in the same way in English and Chinese. However, differences exist in how individual lexical items are categorized. For example, some items classified as count nouns in Chinese are classified as non-count nouns in English. Specific examples include *furniture, baggage, luggage, mail, bread, and chalk*. Because of this discrepancy, Chinese students may tend to make the following types of errors.

\*There are a lot of good furnitures in his house.

\*I got two mails today.

\*I had two breads today.

\*There are three chalks on the desk.

Further, in Chinese, most nouns that are considered count nouns are preceded by a classifier, and most nouns viewed as non-count nouns are preceded by a measure word. This is illustrated below.

A: *san zhang yizi* (三张椅子 three + classifier + chair)

English: three *chairs*

*wu ge xuesheng* (五个学生 five + classifier + student)

English: five *students*

B: *liang bei kafei* (两杯咖啡 two + measure word + coffee)

English: two cups of *coffee*

san wan shui (三碗水 three + measure word + water)

English: three bowls of *water*

Thus, in general, classifiers signal count nouns and measure words signal non-count nouns. No such consistently clear distinction is present in English. This can be a source of confusion for Chinese learners. In the case of advanced learners, a problem arises with words that are not visible or tangible, and do not require a classifier or a measure word. These words are usually abstract, and they are considered non-count nouns in the Chinese language. Some examples include *desire, feeling, smell, cost, sound, attitude, congratulation, blessing, laugh, thought, difficulty, gain, and strength*. The problem is that in English, these words may be used as either count or non-count nouns, depending on the context. Understandably, this blurred distinction can be confusing for Chinese learners of English. The following sentences taken from one advanced learner's writing depict this confusion regarding classification of count and non-count nouns.

\*Congratulation on your graduation.

\*There is some strange sound in the sky.

\*I have mixed feeling about going home.

To further explore this phenomenon, consider the English sentence, "*I have mixed feelings about going home.*" In this construction, there is no classifier to indicate that the word *feeling* is a count noun. Thus, Chinese students may tend to drop the plural

morpheme *-s*, particularly if they view *feeling* as an abstract concept, which their prior knowledge of Chinese would lead them to do. In short, even for advanced learners, pre-conceptualizations concerning the classification of count and non-count nouns in Chinese may markedly affect their acquisition of plural forms in English. Table 3 highlights some examples of the distinct differences between Chinese and English in terms of count and non-count nouns.

**Table 3**

*Count and Non-count Nouns: Examples of Distinct Differences*

Type of Noun	English Classification	Source of Difficulty for Chinese Learners
Nouns that have a collective meaning such as <i>furniture, mail, and jewelry</i>	These nouns are classified as non-count. Under each category, the individual piece is usually a count noun, such as <i>bed, letter, and ring</i> .	There is no distinction between the collective meaning and individual parts in Chinese. The words <i>furniture, mail, and jewelry</i> could be perceived as count nouns.
Nouns that are not visible or tangible (abstract nouns)	These may be classified as either count or non-count, depending on the context. Examples include <i>difficulty, talk, light, and sound</i> .	These words are perceived to be non-count nouns in Chinese.

It is noteworthy that there is a distinction between spoken English and written English in terms of the use of plural forms. Carter (2004) characterizes spoken English as spontaneous and immediate, noting that it allows only limited planning and thinking time. He concludes that written discourses tend to be more structured and organized,

whereas talk can appear rather loose and fragmented. For this reason, generally speaking, Chinese students show more accurate use of plural forms in writing than in speaking.

### **Recommended Instructional Practices**

As noted throughout this article, many Chinese learners encounter challenges in regard to the formation of English plurals. Knowing this, teachers can anticipate difficulties and support students' learning of English plural forms through various instructional practices. The following instructional recommendations are a compilation of (a) the results of a survey of instructional practices of experienced ESL/EFL teachers who work closely with Chinese students; (b) literature on second language acquisition, learner autonomy, and teaching methodology for English language learners; and (c) the personal and professional experience of one of the authors as an English language learner and scholar.

1. *Teach key differences in forming plurals between Chinese and English.*

To assist Chinese students with the task of mastering English plurals, teachers can acquaint them with information regarding major differences between the way plurals are formed in the two languages. In doing this, teachers should begin with what students know about their native language and then address the differences in plural formation in English. This "known to unknown" instructional sequence (Carnine, Silbert, Kame'enui, & Tarver, 2004) has both an affective and cognitive impact. It not only engages students' interest and builds their confidence, but also initiates the construction of new linguistic schemata for the formation of plurals in English. A visual as seen in Table 3

can be used to support the teaching and learning of the differences in plural formation between Chinese and English.

2. *Teach English rules for plural formation.*

Although English rules for forming plurals are replete with exceptions, many hold true for a high percentage of words. Direct teaching of rules (Zhang, 2003) should be accompanied by student practice in meaningful contexts using all of the language modes. This includes conversations in small groups, reading extensively in English with a focus on plural forms, and writing using plural forms. Another recommendation for teaching plural rules is to categorize words according to the different rules. Materials from Azar (1999) and Quirk, Greenbaum, Leech, and Svartvik (1985) provide rich resources for teaching the categorizing strategy. Finally, the use of a graphic organizer of commonly-known English plural rules can enhance learning and retention (see Table 1).

3. *Teach the commonalities and the distinct differences between Chinese and English regarding count and non-count nouns.*

Because the matter of count and non-count nouns is particularly difficult for many Chinese students, more teaching and practice time should be allotted to this aspect of plural formation. Teachers can begin by introducing count and non-count nouns when they present vocabulary. Additionally, teachers are encouraged to use the strategies described in the previously-presented recommendations (#1 and 2 above) for the teaching of count and non-count nouns as well. These strategies include (a) the “known

to unknown” instructional sequence, (b) the categorizing strategy, (c) practice employing all the language modes, and (d) a graphic organizer (see Table 3).

4. *Teach students language learning strategies with an emphasis on learning vocabulary.*

Language learning strategy instruction has been a major area of focus among first and second language educators since the 1970s. Language learning strategies are defined as “specific actions taken by the learner to make learning faster, more enjoyable, more self-directed, more effective, and more transferable to new situations” (Oxford, 1990, p. 8). In a review of the literature regarding Chinese students’ use of language learning strategies, Zhang (2003) reports that good language learners use more and better strategies for learning vocabulary. These strategies include doing vocabulary exercises, making associations, guessing, using context clues, classifying, memorizing, and consulting a dictionary. A key recommendation provided by Zhang is that teachers consciously guide students in the use of a variety of different strategies for learning vocabulary.

5. Teach students to use a variety of resources when encountering unknown or confusing plural forms. Because an important focus of all instruction is to develop independent learners, the introduction of resources that support learner autonomy is essential (Dickinson, 1992; Little, 1991; Little, 1996; Oxford, 1990; Wenden, 1991). For those instances when students encounter unknown or confusing English plural forms, the following three instructional resources are recommended: (a) the self-questioning strategy, (b) the dictionary, and (c) informational technology. To begin,

teachers can directly teach the use of the self-questioning strategy. This is an overarching strategy in that it encompasses all three of the aforementioned resources. Specifically, this strategy provides students with a systematic problem-solving process to use when encountering unknown or confusing plurals. The self-questioning strategy includes the following three steps.

- *What do I already know about plural forms?* Does this word match a rule, or fit into a category that I already know?
- *How can I find out more about this plural form?* What is the most efficient way to learn about this word? Should I use a dictionary or informational technology?
- *What is my strategy for remembering this plural form?* How will I remember what I have learned about this word? What is my personal strategy?

A second instructional resource for learning about English plural forms is the dictionary. Teachers should focus on teaching students how to be strategic in their use of this resource. One example of strategic use is employing the dictionary when seeking initial understanding of plural forms in English. Specifically, Chinese students can use an English-Chinese dictionary to identify count and non-count nouns. Usually, the letter *c* is placed after a count noun, and the letter *u* is placed after a non-count noun. As students progress in language learning, they should be encouraged to move beyond dependence on the dictionary to developing their own strategies for classifying and retaining the information as well as utilizing informational technology.

Informational technology is a third instructional resource. This resource provides an abundant array of information for students. Any grammatical topic is readily available

on the internet. For example, typing *English plural forms* on the Google search engine yields numerous grammatical guides on this topic. Learners can also take advantage of word processing tools on a computer. Specifically, attending to writing on a computer screen supports learning about correct English plural forms. This is particularly true for beginning and intermediate learners who are learning the rules for English plural forms and may overgeneralize the rules that they have learned. For example, if one writes, “*There are three bird in the tree,*” the incorrect plural form is identified by a wavy green line under the word *bird*. If one writes, “*I bought five potatos today,*” a wavy red line automatically signals the incorrect use of plural formation. In this case, one can choose the right word by putting the cursor on the incorrect word and right clicking. Finally, using the spelling and grammar check at the end of any writing assignment is another means of addressing and correcting problems with plural forms.

5. *Teach students to develop their own resources.*

In the process of learning English, most students receive oral and/or written feedback from their teachers, friends, and native English speakers. Efficient English learners try not to make the same mistake twice. Teachers can encourage students to self-monitor their use of plural forms and record, correct, and categorize their own errors. By doing this, students create their own tailor-made resources. In order to monitor their progress, students should type all the sentences with the errors and categorize the errors in a word document. Students can highlight the corrected area(s), and then at the end of the sentence, put a comment or two in parentheses regarding the error(s). To illustrate, the following entry would be placed under the category of adding *-s* or *-es* to English nouns.

*I am also well trained to find scholarly resources by using library databases and other Internet tools.*

(I need to add *s*. There is more than one database).

Note that the student typed the sentence under the correct category, marked the plural form, and made a comment at the end of the sentence. Students should revisit the document regularly, review their errors, and check the efficacy of their strategies for correction and retention. This method can be used not only for plural forms, but also for other common errors in learning English.

### **Conclusions**

Prior knowledge of Chinese language patterns may notably influence Chinese learners' acquisition of English. Language transfer, or the incorporation of forms from the native language into the target language, is one major source of errors among learners of a second or foreign language. One area where language transfer is particularly prevalent among Chinese learners is the formation of English plurals. This article provides an overview of the linguistic features of Chinese and English that may affect formation of English plural forms and pinpoints three major sources of difficulty for many Chinese students. To address these highlighted areas, the authors have recommended a number of instructional practices. The primary focus of these practices is to develop independent language learners. Specifically, teachers can use the foundational information and the five instructional practices presented in this article to equip Chinese learners to be strategic and resourceful as they address the challenges of English plural forms.

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