

Lexical and Syntactic Errors in Translation by Italian/English Bilinguals

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Translation is recognized as a specific linguistic ability in bilinguals. Yet, we know little about what factors influence translation ability, especially at the sentence level. In this study, adults were asked to translate sentences from English (L2) into Italian (L1). We hypothesized that (1) adults with later age of arrival in Canada would perform better in translating into their native language than adults with earlier age of arrival, and therefore earlier L2 acquisition and (2) adults with higher use of L1 would perform better than adults with low use. Participants ($N = 70$) formed 4 groups based on their age of arrival in Canada (AoA) and their reported use of Italian. The translated sentences were scored for syntactic and lexical correctness, and for the number of omitted words. There were significant AoA group effects: late arrival in Canada was associated with better performance. There were no effects for reported frequency of use of Italian. Both self-ratings and native Italian listener ratings of the translated sentences correlated highly with number of correct sentences. © 2002 Elsevier Science (USA)

INTRODUCTION

Translation from one language to another is a distinct linguistic skill in bilinguals (Grosjean, 1997; Paradis, Goldblum, & Abidi, 1982). Translation has been used extensively to study lexical processing in bilinguals. However, most studies use tasks involving only single words (for recent review see Kroll & De Groot, 1997). It is not clear whether performance on single word translation tasks correlates with other linguistic abilities because most studies of translation use only single words and do not extensively test other speech or language skills.

A series of studies by Flege and colleagues has examined performance on multiple tasks in a group of Italian/English bilingual adults, allowing us to compare performance across tasks. Flege, MacKay, and Piske (in press) found independent effects for both age of arrival (AoA) in Canada and amount of L1 (Italian) use on two speech measures: degree of foreign accent and duration of English sentences. However, on two language measures, effects of AoA but not L1 use were observed: self-rating of ability to translate sentences from English into Italian and ratings of semantic accuracy of the translations by 6 native listeners.

Two problems with this study were: (1) that the listeners only rated the semantic adequacy of the translations, not their lexical or syntactic adequacy; and (2) that both ratings were subjective: one done by the listeners before attempting the translation and one done by judges who listened to the English sentences, then the Italian translations. In both cases the ratings could have been influenced by the levels of bilingualism of the raters, or by other confounding factors.

The present study examines the sentence translation task using an objective scoring of the translated sentences and explores the relationship between these scores and other language abilities and self-ratings of bilingualism. The following 3 hypotheses were tested:

1. the early AoA groups will have lower scores on the translation task than the late arrivals;
2. the high use groups will have higher scores on the translation task than the low use groups;
3. since the translation self-ratings correlate with the listener ratings, we hypothesize that both will correlate with objective scores on the translation task.

METHOD

Subjects

Seventy-two native Italian speakers participated (see Flege, MacKay, & Piske, in press, for detailed descriptions of the subjects and the stimuli). They formed 4 groups ($N = 18$ each) based on use of Italian (Low: 1–15% or High: 25–85%) and age of arrival in Canada (Early: mean 7 years or Late: mean 20 years). Age of arrival and use of Italian were determined to be independent factors. The Low and High Use groups did not differ significantly in the number of years of education in Canada, or in length of residence ($p > .10$). For the present study, two subjects in the Early Arrival/Low Use group were eliminated: one because she did not attempt any of the sentences and one because he had a strong dialect.

Task

Subjects translated 30 sentences from English into Italian. Sentences were chosen to represent 3 levels of difficulty within each of 10 domains (e.g., sports, home, religion). From 25 of these sentences, 74 words with few possible correct translations (determined by 2 native speakers of Italian) were retained for the present study. There were 48 nouns, 21 verbs, and 5 adjectives.

Analysis

The dependent variables were:

1. the number of sentences in which all selected words were correct
2. number of lexical errors (all types combined): semantically related, circumlocutions, empty or very general words (e.g., someone/referee), false cognates (e.g., *silko* rather than *seta* for silk), and English words. Number of syntactic errors (all types combined): agreement for gender or number, changing the verb tense from the English stimulus sentence, and changing a noun from singular to plural or vice versa.
3. Omitted words: no attempt or “I don’t know” type responses.
4. Other errors, including phonologically similar words or nonwords (e.g., *carna/carne*).

The group means for each dependent variable were submitted to an Analysis of Variance, using Tukey’s Honestly Significant Difference for post-hoc testing of group differences. Correlations between the variables listed above on the one hand, and self-ratings, foreign accent, and speaking time (as described in Flege, MacKay, & Piske, in press) were also calculated.

RESULTS

The scores for the 4 groups are shown in Table 1.

Few subjects were able to correctly translate the sentences. Of the 25 sentences, the maximum score achieved was 12/25, and the group means are all below 6/25 correct. Omitting words was the most frequent error type, followed by lexical selection errors. Although one might have expected the Early Arrival groups to use more English words and to insert more false cognates to fill in gaps in their Italian vocabulary, this did not occur. For all groups, the mean number of cognates + English words was approximately 2.

Within this pattern of poor performance, there were significant between-group differences for two variables. For both Low Use groups, AoA significantly affected the

TABLE 1
Lexical and Syntactic Performance by Group

		Early low	Early high	Late low	Late high
Correct sentences	Mean	3.40	4.5	6.1**	5.4
	SD	2.13	2.6	2.1	2.7
	Range	1-8	1-11	3-11	2-12
Omitted words	Mean	24.06	21.72	10.17** +	12.39** +
	SD	12.64	11.80	6.74	10.39
	Range	6-50	7-40	1-27	1-39
Lexical errors ($p = .062$)	Mean	11.19	12.33	13.56	14.78
	SD	4.74	3.48	4.82	3.21
	Range	6-22	6-18	6-22	8-20
Syntactic errors	Mean	3.00	3.23	3.56	4.06
	SD	1.63	2.27	2.15	2.18
	Range	1-6	1-9	1-10	0-8
Other errors	Mean	1.44	1.44	1.00	1.50
	SD	1.26	1.10	1.50	1.30
	Range	0-4	0-3	0-6	0-4
Cognates and English	Mean	1.81	1.89	2.17	2.00
	SD	1.68	1.78	1.58	2.19
	Range	0-6	0-6	0-6	0-8

Note. Asterisks indicate significant differences between the Early-low group and the one marked using Tukey's Honestly Significant Difference: * $p < .05$, ** $p \leq .01$, *** $p \leq .002$; (+) indicates significant difference between the Early High group and the one marked: + $p < .05$, ++ $p < .01$. Because cognates have been studied in the bilingualism literature, they are listed in this table separately, but they are also included in the broader Lexical Errors category.

number of correct sentences and the number of omitted words (these two dependent variables were highly correlated with each other: $-.605$, $p < .001$). The Early-Low group differed from the two Late Arrival groups in the number of omitted words, as did the Early-High group (see Table 2).

The correlations highlight the importance of omitted words, with strong, negative correlations between Omitted Words and both Correct Sentences and Lexical Errors. Correct Sentences and Omitted Words both strongly correlated with the self-ratings

TABLE 2
Correlations between Dependent Variables ($N = 70$)

	Syntactic errors	Correct sentences	Omitted words	Lexical errors
Correct sentences	—	-.605***	-.167	-.256
Omitted words			-.439***	-.094
Lexical errors				.153
Syntactic errors				
Other errors	-.099	-.172	.266	.193
Foreign accent in English ^a	-.243 ($p = .043$)	-.373	-.193	-.216
Duration of Italian sentences ^a	-.361**	.299*	.070	.114
ISP self-rate speak Italian ^a	.481***	-.475***	.150	.146
ESP self-rate speak English ^a	-.151	.261	-.206	-.095
Self-rating translate hardx ^a	.399***	-.804***	.506***	.128
Listener ratings of translation ^a	.680***	-.868***	.227	-.031

Note. *** $p < .001$; ** $p \leq .01$; * $p < .02$, two tailed tests.

^a Data from Flege, MacKay, & Piske, in press.

of translation ability and the listeners' semantic judgements but did not correlate with foreign accent.

DISCUSSION

AoA had a significant effect on performance, with early arrivals performing below late arrivals, confirming Hypothesis 1, and extending previous findings that AoA affects both speech and language abilities. Contrary to Hypothesis 2, language use did not affect scores. This finding confirms the result obtained using subjective ratings in Flege, MacKay, and Piske (in press). However, note that the "higher use" group began at only 25% L1 use. It may be that the large range of L1 use in this group masked a "use" effect.

The objective scoring correlated highly with listener ratings and also with self-ratings done before the task. Lexical errors and omitted words correlate with self-ratings suggesting that vocabulary may be a key factor on which participants base their self-rating of speaking ability.

The poor performance on the translation task by all groups could indicate significant attrition of Italian or its imperfect acquisition or limited English skills. The low scores may also reflect the fact that normal bilinguals do not translate sentences. They use each language where appropriate, but translation is a specific skill, separate from knowledge of each language (Grosjean, 1997). Further work is needed to isolate the impact of each of these factors.

The literature on L1 attrition has identified native language use and age of second language acquisition as two factors, among many, which can influence changing L1 abilities, but there are conflicting results as to their importance (e.g. Bahrck et al., 1994; Kohnert, Hernandez, & Bates, 1998; Weltens & Grendel, 1993). The present study, especially when considered with the other studies of these same adults, highlights the fact that different types of linguistic abilities may be differently affected by L1 use and age of acquisition.

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