

# Cross-Linguistic Influence in Third Language Acquisition: The Role of L2 Proficiency and L2 Exposure

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**Abstract:** The results of a study investigating the effect of L2 proficiency and L2 exposure on cross-linguistic influence from L1 English and L2 French on L3 German are reported in this paper. Rates of lexical inventions and language shifts were compared for three groups of L3 learners with different levels of L2 proficiency and amounts of exposure to L2. The results indicate that L2 has a greater influence on the L3 of learners who have had more exposure to their L2. The results also suggest that while L2 proficiency appears to have an impact on the frequency with which L2 intrudes during L3 communication, L2 exposure seems to influence learners' ability to use their knowledge of L2 in order to overcome lexical difficulties in L3. It is also suggested that, unless a threshold level of L2 proficiency is achieved, cross-linguistic influence from L2 on L3 is very marginal.

*Keywords:* cross-linguistic influence, third language acquisition, lexicon, first language, second language

## 1. Introduction

Although research on cross-linguistic influence (CLI) in foreign language acquisition used to focus primarily on the influence of a native language (L1) on the acquisition of a second language (L2), there is now a growing interest in the way previously learned non-native languages influence the acquisition of an additional language. Studies have demonstrated that both the learner's native and non-native languages can be sources of influence when acquiring a new language (Cenoz, 2001; Hammarberg, 2001; Möhle, 1989; Ringbom, 1987, 2001). Although a variety of factors have been identified which seem to determine the extent to which and the way in which the learner's native and non-native languages influence the acquisition of an additional language, there is still no clear understanding of the importance each factor has in the acquisition process. While some researchers have identified L2 proficiency and L2 exposure as playing a role in determining how a non-native language influences third language (L3) acquisition (Hammarberg, 2001; Ringbom, 1987; Williams & Hammarberg, 1998), it appears that no study has specifically assessed the role these two factors play. The present study is therefore intended to investigate how



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L2 proficiency and L2 exposure affect the way in which L1 and L2 influence the acquisition and production of words in an L3.

## **2. The Study**

The aim of the present study is to determine whether some differences can be observed in the way L1 English and L2 French influence the production of L3 German vocabulary when learners have achieved different levels of L2 proficiency and have been exposed to L2 to varying extents. The study is intended to find answers to the following questions: (1) Does L2 have a greater influence on the L3 lexicon of the learner who has achieved a higher level of L2 proficiency and who has had considerable exposure to it?; (2) Can CLI from L2 be observed in the L3 lexicon of the learner who has achieved a very low level of L2 proficiency and who has had little exposure to that language? It is hypothesized that the more proficient learners are in L2 and the more exposure they have had to it, the greater influence L2 will have on L3 vocabulary production. It is also hypothesised that L2 will have very little influence, if any, on the L3 vocabulary production of learners who have achieved a low level of L2 proficiency and have little exposure to it.

### **2.1 Participants**

Thirteen native-speakers of English aged between 19 and 25 years participated in the study. All participants had learned French as an L2 in school and were enrolled in a second or third year university level course in German at the time of the study. The participants were carefully selected to ensure that they had learned no language other than English, French and German.<sup>1</sup> They were divided into three groups based on their level of French proficiency and according to the amount of exposure they had had to this language: (1) LOW L2 proficiency/LOW L2 exposure (6 participants), (2) HIGH L2 proficiency/LOW L2 exposure (3 participants) and (3) HIGH L2 proficiency/HIGH L2 exposure (4 participants).<sup>2</sup> The

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<sup>1</sup> It should be noted that three of the participants had attempted to learn Latin as well.

<sup>2</sup> No participant fell into the category of LOW L2 proficiency/HIGH L2 exposure.

classification of the participants was based on the information obtained by a questionnaire and a French proficiency test.

The participants were first asked to fill out a questionnaire regarding their language learning history. The information gathered by the questionnaire helped to ensure that all participants had learned English, French and German only and in that order. It also provided details about the number of years and type of instruction they had received in French (e.g. French immersion, core French) and in German (e.g. university, language school). Note that the participants had received between 5 and 13 years of instruction in French. Finally, the questionnaire provided information regarding their exposure to their L2 and L3 outside the classroom environment as well as the number of years since their last contact with French. The participants who had been partly or entirely schooled in a French immersion programme or who had had extensive contact with French in a naturalistic environment (e.g. home-stay, work) were placed in the HIGH L2 exposure group.

Since studies have shown that L3 proficiency has an effect on CLI (Ringbom, 1987; Williams & Hammarberg, 1998), the participants were asked to write a German (L3) proficiency test. This ensured that all of the informants had achieved relatively similar levels of proficiency in their L3.<sup>3</sup> The participants were also asked to write a French proficiency test. The classification of informants according to their level of French (L2) proficiency was based on their performance on this test. While informants who scored between 4.5 and 14.5 out of 25 on the French test were placed in the HIGH L2 proficiency group, those who scored 0 or 1 were placed in the LOW L2 proficiency group.<sup>4</sup>

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<sup>3</sup> Although minor differences in L3 proficiency levels were found, the average scores on the test were very similar once the informants were divided into their respective groups based on L2 proficiency and exposure (i.e. low/low: 27/60; high/low: 29/60; high/high: 25/60).

<sup>4</sup> A score of 16/25 or higher indicates that a learner is at an advanced level of French proficiency. Although the terms HIGH and LOW are used to distinguish between the two types of learners, the level of proficiency of the informants in the HIGH L2 proficiency group should be considered intermediate and not advanced. Also, since the difficulty level of the test is high, the L2 proficiency of the informants who scored 0/25 should not be interpreted as nil, but rather as an indication that the informant's knowledge of French is too minimal to score any point.

The last component of the study consisted of the collection of oral samples in German from each informant. In order to do so, 25 sets of cartoons forming a sequence of events were presented to the informants. The participants were instructed in English to describe in German each story depicted by the sets of cartoons in as much detail as possible while being tape-recorded. The interviews were all conducted by the same French-English bilingual who introduced herself as having learned German as an L3. It is important to mention that English was the language employed for all interactions between the informants and the interviewer throughout the interviewing process, except during the picture description task when German was mainly spoken.

## 2.2 Theoretical Background

The analysis focused on two types of CLI: *lexical inventions* and *language shifts*. The term *lexical invention*, defined by Dewaele (1998) as words “which are morpho-phonologically adapted to the TL but which are never used by native speakers” (Dewaele, 1998:471), is used to refer to the first type of CLI. Ringbom’s (1987) framework of “overt cross-linguistic lexical influence in production”, which includes such categories as loan translation, semantic extension, cognate, hybrid, blend and relexification,<sup>5</sup> was employed in order to categorize the various types of *lexical inventions* observed in the data. An additional category, that of “word coinage,” was also included in the analysis, in order to complement Ringbom’s (1987) model. In order to analyse the various types of *language shifts* found in the present data, the categories employed by Williams & Hammarberg (1998) were used as a framework. Williams & Hammarberg (1998) identified a variety of *language shifts* which, as opposed to *lexical inventions*, are not attempts to communicate in the TL. Those categories are *edit*, *meta*, *insert* and “*Without Identified Pragmatic Purpose*” (WIPP). The difference between the first three categories and the last one is that, whereas *edits*, *metas* and *inserts* appear to have a pragmatic purpose (e.g. ask a question, make a

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<sup>5</sup> This model also includes the category “complete language shift”. However, since a shift is not considered a *lexical invention* based on the definition provided above and since language shifts are also investigated in detail in this study, this category is not dealt with here.

comment, introduce a self-repair), *WIPPs* do not seem to have any pragmatic purpose and appear to be slips of the tongue.

### 2.3 Data Analysis

The various instances of *lexical inventions* and *language shifts* were categorised with respect to the origin of the influence. *Language shifts* were either in L1 English (e.g. ein Mann arbeitet in ein “sawmill”) or L2 French (e.g. die Person “qui” trägt). *Lexical inventions* could be the result of influence from either L1 English (e.g. jumpen) or L2 French (e.g. Montagne).<sup>6</sup> The language to which *lexical inventions* were attributed could not always be straightforwardly identified. In some cases, it was impossible to determine whether a *lexical invention* was the result of influence from L1 English or L2 French (e.g. Kostum; these were excluded from the analysis). In other cases, it was impossible to determine whether the influence came from L1 or from the TL itself (e.g. Postmann; these were labelled L1+L3 and counted as L1 tokens). Once the various instances of *lexical inventions* and *language shifts* were categorized as a function of their language source and the type of influence they involve, one-way ANOVA were performed to verify whether the various differences found between the three groups were statistically significant.

### 2.4 Results

The analysis revealed that English, the participants’ L1, is by far the main source of influence on the German (L3) for all three groups. Moreover, the CLI found in the German of the informants in the HIGH L2 proficiency/LOW L2 exposure group has characteristics of the CLI found in the German of the informants in the HIGH L2 proficiency/HIGH L2 exposure and the LOW L2 proficiency/LOW L2 exposure groups. Table 1 shows that the influence English (L1) has on the German of learners who have achieved a higher level of French proficiency is similar, regardless of the amount of exposure they have had to French. While the overall rates of English influence are similar for the HIGH L2 proficiency/HIGH L2 exposure and the HIGH L2 proficiency/LOW L2 exposure groups, the overall rate of English influence found in the German of the LOW L2 proficiency/LOW L2

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<sup>6</sup> Overgeneralizations attributed to influence from the TL itself were also found in the data.

exposure informants is almost twice as high. Although the difference is not significant ( $p > .05$ ), a one-way ANOVA indicates that there is a trend, suggesting that L1 influence has a tendency to decrease as L2 proficiency increases.

Table 1 – Rates of Cross-Linguistic Influence from L1 English

	HIGH L2 Proficiency				LOW L2 Proficiency		F-value
	HIGH L2 Exposure		LOW L2 Exposure		LOW L2 Exposure		
	N	/1,000 words	N	/1,000 words	N	/1,000 words	
Lex. Inv.	100	<b>11.68</b>	27	<b>5.9</b>	97	<b>9.06</b>	0.956
Lg. Shifts	192	<b>22.42</b>	121	<b>26.3</b>	482	<b>45.03</b>	0.935
Total	292	<b>34.1</b>	148	<b>32.2</b>	579	<b>54.09</b>	1.184
F-value Inv. vs. Shifts	0.994		8.228*		3.114*		

\*  $p < .05$

Turning to French (L2) influence, however, Table 2 shows that both groups of learners who have had little exposure to French are similar to each other, regardless of their level of proficiency in that language. The overall rate of French influence found in the German of the HIGH L2 proficiency/HIGH L2 exposure informants is significantly higher than the rates found in the German of both the HIGH L2 proficiency/LOW L2 exposure ( $p = .033$ ) and the LOW L2 proficiency/LOW L2 exposure ( $p = .003$ ) informants. However, no significant difference was found between the two LOW L2 exposure groups ( $p = .424$ ).

A similar phenomenon is also observed for French (L2) *language shifts*. French *language shifts* are found significantly more often in the German of the HIGH L2 proficiency/HIGH L2 exposure learners than in the German of learners in both LOW L2 exposure groups (HIGH/HIGH vs. HIGH/LOW:  $p = .035$ ; HIGH/HIGH vs. LOW/LOW:  $p = .002$ ). Nevertheless, no difference is observed between the two LOW L2 exposure groups with regard to French *language shifts* ( $p = .249$ ). A similar pattern is observed for *lexical inventions* resulting from French influence. Whereas the rate of French *lexical inventions* is significantly higher in the

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German of the HIGH L2 proficiency/HIGH L2 exposure learners than in the German of the learners in both LOW L2 exposure groups (HIGH/ HIGH vs. HIGH/LOW:  $p = .040$ ; HIGH/HIGH vs. LOW/LOW:  $p = .028$ ), no significant difference was found between the two LOW L2 exposure groups ( $p = .851$ ).

Table 2 – Rates of Cross-Linguistic Influence from L2 French

	HIGH L2 Proficiency		LOW L2 Proficiency		F-value
	HIGH L2 Exposure	LOW L2 Exposure	LOW L2 Exposure		
	N /1,000 words	N /1,000 words	N /1,000 words		
Lex. Inv.	7 <b>0.82</b>	0 <b>0.00</b>	1 <b>0.09</b>		4.061
Lg. Shifts	28 <b>3.27</b>	5 <b>1.09</b>	0 <b>0.00</b>		9.007**
Total	35 <b>4.09</b>	5 <b>1.09</b>	1 <b>0.09</b>		7.546**
F-value Inv. vs. Shifts	3.528*		3.221		1.000

\*\*  $p < .01$ ; \*  $p < .05$

The CLI from English (L1) and French (L2) found in the German (L3) of the participants does not only differ quantitatively, but it also differs qualitatively. Looking at the types of French influence found in their German is also revealing as to the impact L2 proficiency and L2 exposure have on the production of L3 words.

Table 3 – Types of Cross-Linguistic Influence from L2 French

	HIGH L2 Proficiency		LOW L2 Proficiency
	HIGH L2 Exposure	LOW L2 Exposure	LOW L2 Exposure
Lexical Inventions	√		(√)
Language Shifts	√		
WIPP	√	√	

As can be seen in Table 3, while English learners of German who have both a high level of French proficiency and considerable exposure to French are able to

use their knowledge of French to create words they do not know in German (*lexical inventions*) and to make comments or ask questions (*language shifts*), the only trace of French influence found in the German of the informants who have achieved a high level of French proficiency but who have had little exposure to it is found in slips of the tongue (*WIPP*). Considering that only one instance of French influence was found in the German of learners who have both a low level of French proficiency and have had little exposure to it, it is reasonable to argue that the influence French has on their L3 is almost nonexistent.

## **2.5 Discussion**

The fact that English is the main source of CLI for all three groups can be explained by various factors. First, the level of French proficiency of the participants may have been too low for this language to become an important source of CLI in German. Also, Hammarberg (2001) noticed that while L1 influence persists over a longer period of time, L2 influence tends to fade away twice as rapidly. Since the participants had already been learning their L3 for three semesters or more at the moment of the study, it is not impossible that the influence L2 had on their L3 had already faded away. Another possibility is that the experimental conditions may have affected the level of activation of their L1 and L2. Grosjean (1998) suggests that factors such as the setting and the interlocutors have a major impact on the degree to which the various languages known to the learner are activated. The fact that the interviews took place in an English-speaking environment and that English was used for all communication between the interviewer and the participants may have influenced the results. Finally, the perceived typological distance between the three languages may also have been a factor. The fact that the learners may perceive English as being more similar to German than French may have played a role in encouraging the use of English as a resource language and in lowering the level of activation of French during communication in German (Kellerman, 1983).

The results suggest that L2 proficiency and L2 exposure do not have the same impact on all types of influence. Slips of the tongue in French were only found in the German of learners who had achieved a higher level of French proficiency,

suggesting that L2 proficiency mainly affects the degree to which L2 is activated during L3 communication. Moreover, since French *lexical inventions* and *language shifts* with a pragmatic purpose were only found in the German of learners who have had considerable exposure to French, it can be hypothesised that L2 exposure has a major impact on the way L3 learners can take advantage of their knowledge of L2 in order to create lexical inventions and code-switch. This supports Ringbom's (1987) claim that, unless the learner has achieved a high level of L2 automatization, the influence L2 has on L3 is negative. This also suggests that a high level of L2 proficiency may not be enough for L2 to become automatized and that L2 exposure may be essential.

The influence L2 has on L3 when the learner has achieved a very low level of L2 proficiency appears to be very marginal. As the results show, only one instance of French influence was found in all of the data from the participants in the LOW L2 proficiency group. This is surprising considering that the individuals in this group have all received between four and ten years of instruction in French as an L2. It can therefore be suggested that having received instruction in an L2 or having some knowledge of it is not enough for the latter to influence the acquisition of an L3. Unless learners have reached a threshold level of L2 proficiency, that language is very unlikely to influence the acquisition of an L3. This could be true particularly in cases where L1 is perceived as being more similar to L3 than L2 is.

### **3. Conclusions**

Although these results shed some light on the role of L2 proficiency and L2 exposure in L3 acquisition, it is important to mention that this study only provides an indication of how L2 influences the L3 lexicon when the learner has achieved a low to intermediate level of L2 proficiency. It would therefore be interesting to see how L3 learners who have achieved very high or native-like proficiency in L2 would behave on a similar task. Moreover, it is very unlikely that these results apply to all language acquisition contexts. As a result, it would be interesting to investigate different combinations of languages.

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