

L1 influence and EFL vocabulary: do children rely more on L1 than Adult learners?

M. Luz Celaya y M. Rosa Torras
Universidad de Barcelona

An issue that has always been the focus of attention in SLA studies is the role of the L1 in the acquisition of the L2. A study is presented here on the role of the L1 in EFL open class words that seeks to analyse the relationship between age and the influence of the L1 in a formal language learning context. The subjects in our study belong to three age groups (Group A: 10 years old; groups B: 12 years old; group C: +18 years old), all of them with the same number of hours of instruction (200 hours). Results from the test (a written composition) show both quantitative and qualitative differences in L1 influence between both age groups. Our findings suggest that age may influence both the amount and the way in which learners draw on the L1 in EFL written vocabulary.

Introduction: L1 influence

Both in situations of language contact and in language learning contexts, an issue that has always been the focus of attention is the role of the first language (L1) in the acquisition of the second language (L2). In the 1960s, under behaviourist premises of language learning, the first language was even taken as the starting point of second language acquisition as well as an obstacle. It was thought that the old habits, that is, the first language interfered with the new habits of the second language, thus giving way to cases of both positive transfer, if the two languages were similar, or negative transfer or interference, when the languages were not similar (Lado 1957). To predict the problematic areas, teachers used Contrastive Analysis (CA) as the most efficient teaching method.

CA, however, left many errors unexplained. In the 1970s Error Analysis (EA) proved that there existed a number of errors that were not caused by the first language. In the so called “morpheme studies”, Dulay, Burt and Krashen (1982) found that many errors produced by second language learners were developmental, that is, those errors

also found in a given L2 when acquired as L1. This idea even led to the complete rejection of the L1 as an intervening factor in SLA.

However, the Michigan Conference on Language Transfer, held in 1981, showed a renewed interest in transfer. “The New Transfer”, as it was then called, disentangled the notion of transfer from behaviourist ideas. Transfer was redefined and a new name was proposed: “cross-linguistic influence” (CLI). We move from, almost exclusively, the analysis of L1 influence in the learners’ production to new approaches that take into account aspects such as the linguistic context, the learner himself or the learner’s feelings about the languages (see Odlin 1989) and to perspectives that account for the role of UG and L1 in the acquisition of an L2 (for recent reviews, see Epstein, Flynn and Martohardjono 1996; Hawkins 2001), with the FT / FA (Schwartz and Sprouse 1996) and the Modular View of Transfer (Montrul 2000) as the most recent proposals that explain SLA in terms of the interaction between UG and L1.

L1 influence and the acquisition of vocabulary

The study of the acquisition of second language vocabulary and lexical development has received increasing attention from researchers since Gass (1987). New theoretical perspectives have recently influenced this field, as is shown in Wesche and Paribakht (1999). Interesting topics under investigation nowadays are the measurement of lexical creativity (Lessard and Levison 2001), the acquisition of types of word knowledge (Schmitt 1998), the redefinition of the concept of word (Bogaards 2001) and lexical transfer (Helms-Park 2001).

Our interest in lexical transfer stems from the findings in several SLA studies which show that vocabulary is the area that presents a clearer influence from the L1 as well as from our own experience as teachers and learners of L2. Ringbom (1987), for instance, finds an overwhelming predominance of L1 influence on lexis. In his analysis

of lexical influence in production he distinguishes between transfer and borrowing as the two end-points in a continuum. His data show the larger number of errors in borrowing, that is, as complete language shifts.

Ringbom's findings are in the same line as Bouvy (2000). Bouvy studies L2 / L3 interference (English / Dutch or German) in the examination papers of over 900 university students with L1 French, who were distributed into 4 different groups according to their level of proficiency in the foreign language. On the one hand, the researcher states that lexical errors represent 92% of the error corpus. In her data "direct borrowing" and "spelling interference" each includes over 25% of the errors analysed. These results lead Bouvy to conclude that transfer is a performance process which appears when there is a gap between the learners' linguistic competence and their communicative needs.

L1 influence is closely related to the learner's linguistic awareness. Kellerman (1983, 1987, 2000) claims that the learner's perception about the distance between the languages (*psychotypology*) as well as his intuitions are as relevant as formal properties of the languages to explain CLI. These perceptions may change over time, as age and proficiency increase, and also depending on the L2 involved.

L1 influence has also been found to be related to the level of proficiency in the L2, with less advanced learners relying more on the L1 (see Fernández-Dobato 2001) and with the level of proficiency influencing the type of L1 influence, as in Ringbom (1983) who claims that lexical transfer requires a higher degree of fluency than borrowing. However, as stated in Helms-Park (2001), little research has been conducted on the route of L2 lexical acquisition by low proficiency learners, which is the reason why we chose a low level for our study.

Age differences

Although research on the issue of age has been massive (see Birdsong 1999; Singleton and Lengyel 1995, for recent overviews), the topic is still controversial. Alternative explanations to the existence of a critical period have been provided in the form of sensitive periods, in the different effects in different linguistic domains or even denied by some researchers. We shall focus here on two proposals that defend an indirect relationship between age and acquisition, since it is claimed that differences are not exclusively maturational; they are due to the different learning styles which are intrinsic to age. Bialystok (1997) claims that adults tend to extend the existing categories to build the linguistic representation for an L2 whereas children tend to create new categories. The two different processes would result in the use of first language rules by adults but not by children.

DeKeyser (2000), in line with Bley-Vroman's Fundamental Difference Hypothesis (Bley-Vroman 1988), also claims that different ages present different learning styles. He argues that adults have lost the ability to learn a language without reflecting on its structure (explicit learning) and so in his study only those adult learners with a high level of verbal analytical ability reached near-native competence whereas this ability was not a significant predictor for younger learners.

In previous analyses of the data provided by the participants in this study (see, for instance, Celaya, Torras and Pérez-Vidal 2001; Pérez-Vidal, Celaya and Torras 2000), age has also been found to have an influence on the written production of the learners.

Hypotheses

Our experience shows that adult learners have more linguistic awareness and are more mature and so they are less eager to use the L1, since they can differentiate between both linguistic systems very clearly. Children, on the contrary, are usually

more eager to communicate at any cost so they rely more on the L1. However, some findings in studies seemed to contradict our intuitions. Therefore, we formulated the following two research questions:

. Will there be any differences in the number of open class items which present L1 influence depending on the age group (children, pre-adolescents and adults)?

. Will the types of lexical transfer differ in the three age groups?

We hypothesized that

1. Hours of instruction being equal, age will influence lexical transfer, with younger learners drawing more frequently on the L1 than adults.

2. Adults will draw on the L1 in a different way to children and pre-adolescents due to different learning styles and different degrees of language awareness.

Method

The sample

A total of 194 participants were chosen at random from the larger sample in the Age Factor Project, currently in progress at the English Department (University of Barcelona).¹ The participants were ascribed to 3 different age groups: Group A or children (10-11 years old), with 78 subjects; Group B, or pre-adolescents (12-13 years old), with 82 subjects; Group C, or adults (+18 years old), with 34 subjects.

All the subjects have had the same period of instruction (200 hours). For this reason, the subjects included in the study have not followed any extra English classes after school hours, have never been to an English-speaking country and have no regular contact with the language, except for the obvious presence of English in our society.

Instruments

The data come from a written composition on the topic “Introduce yourself”; the participants were allowed a maximum of 10 minutes. According to Wolfe-Quintero,

Inagaki and Kim (1998), if topic and time are controlled for, the products are comparable.

Procedure

The compositions were written by the participants in their own classrooms with the presence of the researchers. The learners could not use any dictionaries or grammar books and could not ask the researchers or their classmates for help. They were given instructions in English and in Catalan to make both procedure and topic clear.

Analysis

As a preliminary step, we first identified and counted up the number of errors found in the total number of open class word tokens (nouns, adjectives, verbs and adverbs). A word is coded as unacceptable if it contains a malformation, if it is not an English word or if it violates native-like use in the context where it appears. Next, and according to the linguistic resources learners turn to when they lack a particular word in English, we have classified the vocabulary errors into two categories: interlingual and intralingual errors.

a) Interlingual errors: the learners use words which do not exist in English and which are based on their L1 vocabulary knowledge (Spanish/Catalan), e.g. *Simpático* for *nice*, *scondite* for *hide-and-peek*)

b) Intralingual errors: the learners use words that exist in English, but they do not represent the meaning they wish to express or either its meaning approximates the intended word e.g. *life* for *like*; *fat* for *big*.

After identifying and classifying the errors, we have focussed on interlingual errors and analysed them following and adapting James's classification (1998) in order to discover the type of L1 influence, as follows:

a) Misspellings: these are the type of errors committed by learners when they are operating the graphological system when writing words in English. As a result of the problems they have with the English encoding system, they violate the conventions for representing phonemes by means of graphemes, e.g. *braun*.

b) Borrowing: learners insert L1 words without any attempt to tailor them to the target language, e.g.

The school is *bonica*
I got *pelo* brown
I would like work in a good “*bufet*”

c) Coinage: learners adapt L1 words to the English structure, so that they sound or look like English, e.g.

My *adreç* (from Catalan “*adreça*”)
I am good *deportis*

d) Calque: the L2 word is the result of literal translation from the L1, e.g.

My brother *do párvulos*
I *make* piscina

The best of my life I *passed* it there

Results and discussion

As table 1 shows, the subjects in this study, who are in their early stages of acquisition, rely to a great extent on their L1 resources to overcome problems with vocabulary. As Poulisse and Bongaerts (1994) and Helms-Park (2001) state, since L2 words are new to beginning learners, L1 lexical items are activated before the corresponding L2 items.

Table 1. Interlingual and intralingual vocabulary errors in children, pre-adolescents and adults

Group	Subjects	Open class words / % Vocabulary errors	% Interlingual errors	% Intralingual errors
A 10-11 year olds	78	551 / 19	87.2	12.7
B 12-13 year olds	82	882 / 12.5	81.4	18.5
C Adults	34	1803 / 7.6	90.5	9.4

These figures also show that age seems to influence the number of errors in open class words, since children present a higher percentage (19%) than the other two groups (12.5% and 7.6%). However, contrary to hypothesis 1, interlingual errors give a higher percentage in group C (adults) than in both groups A and B (children and pre-adolescents).

Following hypothesis 2, there seems to be an influence from age not only in the number of tokens that present L1 influence but also in the type of transfer that the three age groups present. Further analysis of the data reveals that learners rely on several interlingual strategies, and that the three age groups apply them differently, as appears in Table 2.

Table 2. Types of L1 influence in EFL open class words

Group	Interlingual errors	% Misspellings	% Borrowing	% Coinage	% Calque
A 10-11 year olds	96	80	12.5	5.2	2
B 12-13 year olds	92	54	26	16.3	3.2
C Adults	125	57.6	5.6	16	20.8

A misspelling is the error category with the highest percentage of errors in the three groups (see Bouvy 2000 above). It is worth pointing out that a qualitative analysis

also reveals differences between the groups. Many instances of misspelling interlingual errors in groups A and B, although with a higher number in group A, present L1 influence due to the transfer of L1 coding rules, which is not the case in group C. This type of error can be explained by the fact that learners have acquired the oral English word but not its written form and so, in order to write the word, learners use their available knowledge, that is the L1 (Spanish/Catalan) phonographic coding rules, as in *braun* for “brown” or *neim* for “name”. Group C, on the contrary, present more instances of graphemes that would code a phoneme in their L1, as in the omission of one in a pair of double consonants (*diferent*) or a final vowel (*cours*). This second type of misspelling error implies a weaker influence of the L1.

It can be assumed that in the first stages of acquisition the task of learning words and their meanings involve the additional burden of learning the encoding and decoding systems in speaking and writing. Besides having a reduced lexicon, low proficiency learners may have acquired new words only partially, for example, without mastering the phonographic rules. That would explain the great amount of interference misspelling errors in the three groups due to the application of the L1 phonographic rules. The low level of proficiency, then, explains the presence of this type of mistakes. Age, on the other hand, would explain the qualitative difference of interference spelling errors in the three groups.

Our results seem to indicate that, as in the previous case, borrowings decrease with age. The higher percentage in group B (26%) than in group A (12.5%) is contradictory at first sight. A qualitative analysis of the data reveals that group A uses their L1 knowledge in such a way that goes beyond the word unit. For example, learners can insert whole sentence units in either Catalan or Spanish in their written texts, as in *I am thirteen. Tinc els ulls marrons i el cabell castany*, or provide only one or two

English words within a L1 sentence, e.g. *De mayor seré* Physical Education teacher *en una* school. Since such units have been rejected in our analysis, and, excluded, therefore, from the quantitative results, group A presents less borrowing than group B at the word level but more instances of intrasentential code-switching. Otherwise, the percentage would have been much higher.

A possible explanation of the massive use of borrowing and extensive code-switching in the younger groups can be found in the classroom context of our subjects where learners are forced to speak and write from the beginning, not being allowed to be silent, as many language learners in natural contexts would be, especially children. Besides, children learning foreign languages in a classroom can fulfil their communicative needs using their L1, as their teacher and classmates share the same L1. If we consider that for the younger subjects of this study, this may have been the first time they have been asked to produce a written text using the target language, we can assume they have maximized their L2 linguistic resources and turned to borrowing in order to be able to fulfil the task, instead of being silent or producing a blank paper that in a classroom may be interpreted as ignorance.

Group C, with a very low percentage of borrowing, draw on the L1 directly especially when giving certain names, e.g. "*Gestión y administración pública*", which they have never used in English before because they belong to their everyday sociocultural context. The fact that they use fewer intact words from the L1 than the other two groups and the fact that, when they do, these words usually appear between inverted commas may suggest a clear language differentiation that increases with age and also the need to show this awareness.

As for the errors classified as "coinage", group A is the one with the lower percentage in this category (5.2%) whereas groups B and C present almost the same

percentages (16.3% and 16%, respectively). These results suggest a positive relationship between age and the ability to create words that resemble the L2. The fact that children present a much lower percentage of errors in this category may imply that, as age increases (groups B and C), learners have greater language awareness and this fact allows them to “analyse” both linguistic codes and mix them without having to draw directly on the L1 word (as in the case of borrowings). As commented above (Kellerman 1983, 1987, 2000), the learner’s psychotypology may be affected by age.

This tendency is even clearer in the area of calques. Adults present a much higher percentage than children and pre-adolescents (20.8% vs. 2% and 3.2%, respectively), thus suggesting again that they have tried to create words in the L2 more often than Groups A and B because of a higher ability with the L2 system.

Concluding remarks

We have seen differences both in the number and the types of lexical transfer due to age in the data analysed here. Children (group A) rely more on the L1 than pre-adolescents and adults, -except in the case of borrowing (group A, 12.5% vs. group B, 26%, which has been already commented on above-, when the influence of the L1 is most direct, that is, in misspellings. In the other category of our taxonomy, coinage, groups B and C obtain higher percentages of errors, suggesting thus that adults rely on the L1 in a different way, a way which involves the L1 and the L2 systems.

Answers to our two research questions interact in our study in the sense that the answer to the second research question (type of transfer at different ages) in part corroborates and in part denies our first hypothesis. The differences between children and adults lie in the type of transfer; at first sight, children seem to draw more on the L1 (as the title suggests) but this difference appears only when the type of transfer is more

direct. Adults and pre-adolescents have been found to draw on the L1 more than children in coinages, that is, in that process which combines L1 and L2 knowledge.

Nevertheless, these findings must be taken with caution, since there is another issue which may have an intervening role in any study on the age factor. Taking into account that our subjects are classroom learners and even if time of exposure has been kept equal in the three age groups, we must be aware of the fact that this amount of time may give way to different levels of proficiency. Due to different cognitive abilities at different ages (see Robinson 2001) and to different instructional practices depending on the age of the learners (the adult learners in our study used dictionaries and wrote more compositions in class than the learners in the other two groups), it may be the case that L1 influence in EFL written vocabulary may be affected not only by age alone but also by different methodologies. Besides, and even if none of the three groups had received massive amounts of input, necessary for implicit acquisition processes to take place (DeKeyser 2000), another important difference appears if one takes into account the educational context, since children and pre-adolescents are immersed in a bilingual school context that allows the use of both languages (Catalan and Spanish) whereas not all the adult participants followed this practice at their school days, and even if they did, they are no longer at school. This difference may give way to different notions about language use in class.

Finally, an issue which would probably reveal interesting differences would be the comparison of both oral and written data and even between different written tasks, two lines of research that we are planning to take in the near future.

Notes

¹ The authors acknowledge the support of the Ministerio de Educación y Ciencia through projects PB94-0944 and PB97-0901.

References

- Bialystok, E. "The structure of age: in search of barriers to second second language acquisition". *Second Language Research* 13/2 (1997): 116-137.
- Birdsong, D., ed.. *Second Language Acquisition and the Critical Period Hypothesis*. Mahwah, NJ: Erlbaum, 1999.
- Bley-Vroman, R. "The fundamental character of foreign language learning". In W. Rutherford and M. Sharwood-Smith, eds. *Grammar and Second Language Teaching: A Book of Readings*. Rowley, MA: Newbury House, 1998. 19-30.
- Bogaards, P. "Lexical units and the learning of foreign language vocabulary". *Studies in Second Language Acquisition* 23/3 (2001): 321-343.
- Bouvy, C. "Towards the construction of a theory of cross-linguistic transfer". In J. Cenoz and U. Jessner, eds. *English in Europe. The Acquisition of a Third Language*. Clevedon: Multilingual Matters, 2002. 143-156.
- Celaya, M.L., M. R. Torras and C. Pérez-Vidal. "Short and mid-term effects of an earlier start: an analysis of EFL written production". In S. Foster-Cohen and A. Nizgorodcew, eds. *EUROSLA Yearbook*. Amsterdam, Philadelphia: John Benjamins, 2001. 195-209.
- DeKeyser, R.M. "The robustness of critical period effects in second language acquisition". *Studies in Second Language Acquisition* 22/4 (2000): 499-533.
- Dulay, H., M. Burt and S. Krashen. *Language Two*. New York: Oxford University Press, 1982.
- Epstein, S., S. Flynn and G. Martohardjono. "Second language acquisition: Theoretical and experimental issues in contemporary research". *Behavioral and Brain Sciences* 19 (1996): 677-714.
- Fernández-Dobato, A. "Communication strategies in the IL of Galician students of English: the influence of learner- and task-related factors". *Atlantis* 23/1 (2001): 41-62.
- Gass, S., ed. "The use and acquisition of the second language lexicon". Special issue of *Studies in Second Language Acquisition* 9/2, 1987.
- Hawkins, R. "The theoretical significance of Universal Grammar in second language acquisition". *Second Language Research* 17/4 (2001): 345-367.
- Helms-Park, R. "Evidence of lexical transfer in learner syntax. The acquisition of English causatives by speakers of Hindi-Urdu and Vietnamese". *Studies in Second Language Acquisition* 23/1 (2001): 71-102.
- James, C. *Errors in Language Learning and Use*. London & New York: Longman, 1998.
- Kellerman, E. "Now you see it, now you don't". In S. Gass and L. Selinker, eds. *Language Transfer in Language Learning*. Rowley, Mass.: Newbury House, 1983. 112-134.
- _____. *Aspects of Transferability in Second Language Acquisition*. Ph.D. dissertation. Nijmegen: Katholieke Universiteit, 1987.
- _____. "Lo que la fruta puede decirnos acerca de la transferencia léxico semántica: una dimensión no estructural de las percepciones que tiene el aprendiz sobre las relaciones lingüísticas". In C. Muñoz, ed. *Segundas lenguas. Adquisición en el aula*. Barcelona: Ariel, 2000: 21-37.
- Lado, R. *Linguistics across Cultures*. Ann Arbor: The University of Michigan Press, 1957. 10th printing, 1971.
- Lessard, G. and M. Levison. "Lexical creativity in L2 French". *International Review of Applied Linguistics* 39 (2001): 245-257.

- Montrul, S. "Transitivity alternations in L2 acquisition. Toward a modular view of transfer". *Studies in Second Language Acquisition* 22/2 (2000): 229-273.
- Odlin, T. *Language Transfer*. Cambridge: Cambridge University Press, 1989.
- Pérez-Vidal, C., M. R. Torras and M. L. Celaya. "Written performance by EFL Catalan / Spanish bilinguals". *Spanish Applied Linguistics* 4/2 (2000): 267-290.
- Poullisse, N. and T. Bongaerts. "First language use in second language production". *Applied Linguistics* 15/1 (1994): 36-57.
- Ringbom, H. "Borrowing and lexical transfer". *Applied Linguistics* 4/3 (1983): 207-212.
- Ringbom, H. *The Role of the First Language in Foreign Language Learning*. Clevedon: Multilingual Matters, 1987.
- Robinson, P. "Individual differences, cognitive abilities, aptitude complexes and learning conditions in second language acquisition". *Second Language Research* 14/4 (2001): 368-392.
- Schmitt, N. 1998. "Tracking the incremental acquisition of second language vocabulary". *Language Learning* 48/2 (1998): 281-317.
- Schwartz, B.D. and R.A. Sprouse. "L2 cognitive states and the Full Transfer/Full Access Model". *Second Language Research* 12/1 (1996): 40-72.
- Singleton, D. and Z. Lengyel, eds. *The Age Factor in Second Language Acquisition*. Clevedon, UK: Multilingual Matters, 1995.
- Torras, M.R. *Assoliment d'objectius didàctics en l'ensenyament de la llengua anglesa al final de l'EGB: Anàlisi de la interllengua dels escolars*. Unpublished Ph.D. dissertation, Universitat de Barcelona, 1992.
- Wesche, M. and T. S. Paribakht. "Introduction to Incidental L2 vocabulary acquisition: theory, current research, and instructional implications". *Studies in Second Language Acquisition* 21/2 (1999): 175-180.
- Wolfe-Quintero, K., S. Inagaki and H. Kim. *Second Language Development in Writing: Measures of Fluency, Accuracy, and Complexity*. Hawaii: University of Hawaii at Manoa, 1998.