

Language selection in code-switching: An analysis of nouns from Romanian-English code-switching

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1. Introduction

Bilinguals have multiple linguistic representations for a concept, corresponding to each language (Bialystok, 2007). Thus, in the process of lexical selection, bilingual speakers have to choose between lexemes that share semantic representations across the two languages. Experiments have shown that there is between-language competition in the process of lexical selection, both from the first to the second language and vice-versa, even in late bilinguals who are dominant in their first language (Marian and Spivey, 2003). Because most concepts¹ are associated with synonymous, equally activated lexical nodes, bilinguals should encounter significant difficulties in lexical selection, yet it does not seem to be the case. Whether it is the case that bilinguals select just from the target lexicon, activate just the target lexicon, or suppress the lexicon that is not targeted, proficient bilinguals can speak clearly and effortlessly in one language and not the other (Finkbeiner, Gollan, and Caramazza, 2013).

Furthermore, fluent bilinguals can switch effectively from one language to another without any difficulties. The language that is best suited for a given context is activated and thus employed by the bilingual. Previous studies have focused on how language production draws from the representational system for the relevant language, if there is interference from the other system, or facilitation between the two languages of a bilingual (Marian and Spivey, 2003; Colome, 2001). It has been shown that both languages of a bilingual are simultaneously active, even if only one of the languages is being used, and that the non-targeted language can actually facilitate word processing in the target language (VanHell and DeGroot, 1998; Finkbeiner et al, 2004).

When a bilingual can use both of his/her languages in the same context, both languages are activated at a high level, and code-switching can occur (Grosjean, 2010). The purpose of the present study is to identify the factors that may lie behind the selection

¹ Depending on the bilingual's level of proficiency in the second language

of code-switched L2 nouns in L1 dominant bilinguals, in a context when both languages of the speakers are highly activated. In order to do so, I am analyzing a corpus of Romanian-English code-switching data from spontaneous conversations of five first generation Romanian immigrants in the US. Their ages range between 26 – 32, they have lived in the US for at least the past six years of their lives, their native language is Romanian (L1), and English is their second language (L2). There are two major questions I address: (1) do switched English (L2) nouns in the Romanian-English data occur because they contain a meaning not covered by their Romanian translation equivalent? (2) Do English nouns that have a direct Romanian translation equivalent still win in the lexical selection process?

A broad definition for language mixing or code-switching is the alternate use of two languages in a conversation (Weinreich, 1958). More exactly, code-switching (hereafter CS) can occur within a single discourse, a sentence, or even a constituent (Poplack, 1980). CS can appear at the boundary between two sentences—intersentential CS— or within the same clause and in some cases at word or morpheme boundaries— intrasentential CS (Muysken, 2000).

Code-switching has been studied from different perspectives (e.g. sociolinguistic, grammatical) and there are various suggestions for the reasons why code-switching occurs. For the purpose of the present study I will present some of the approaches that concern CS and language selection, or CS as a result of language activation. Code-switching is often described in terms of language activation in a bilingual. According to Grosjean (2010), when a bilingual who speaks Language a (La) and Language b (Lb) uses La in a given context, that language mode is activated and thus La is chosen as the target language. If the bilingual is interacting with another bilingual who shares the same languages both languages are activated and the speaker is in a bilingual mode. Language mixing, or code-switching, often occurs in such a context where both languages of a bilingual can be employed. In most cases one of the languages dominates and is considered the base language of the conversation, while the other language is embedded in this base (Myers-Scotton, 1993; Muysken, 2000).

Clyne (1980), for example, argues that can CS occur in anticipation or as a consequence of certain trigger words. He considers such trigger words to be “(...) common to two or more of the speaker's languages, either because of their ambiguous affiliation or because the speaker has incorporated elements of one system into the other.” (Clyne, 1980, p. 401). He analyzed a corpus of Dutch-English and German-English CS data from different generation immigrants in Australia, thus including bilinguals who learned one language before the other or both languages simultaneously. He noticed that there are certain points in the clause where bilinguals are more likely to switch (e.g. after a preposition, at the end of a sentence) and that code-switches were more likely to occur after processing a cognate than after processing a non-cognate

Broersma and De Bot (2006) question the hypothesis proposed by Clyne (1980) that words that are part of two languages (i.e. cognates) are likely to trigger code-switching from one language to another. They argue that at the time this hypothesis was introduced there was little knowledge on the mental processes of speech production. While they suggest that recent theories on speech production have not reached a consensus on a model of how the speaker processes the information, at least the models adapted for bilingual speakers (e.g. De Bot, 1992, 2004; Green, 1998; Clyne, 2003) agree that the intended language in which a message (or part of a message) is transmitted is selected early in the production process. Furthermore, Broersma and De Bot (2006) argue that the information

about language choice happens at the conceptual level and thus CS can be the result of triggering at the lemma² level. “When the lemma of a trigger word in language A is activated, the lemma will send activation to the connected word form, which is part of two language subsets.” (Broesma and De Bot, 2006, p. 4). If the already activated lemma in language B is selected, a code-switch takes place.

Another way to describe CS occurs in terms of lexical selection is found in Marian (2009). When speakers use a word in order to express a certain meaning, other semantically related words are also activated and lexical selection becomes necessary. When a parallel co-activated item in the non target language contains a meaning that is not included in the target language, code-switching or transfer may occur. Similar to monolingual speech, when other semantically related words are activated with a target word, the activation of a concept in bilinguals spreads its activation to the words in both lexicons, and they compete in lexical selection (Colome, 2001). The same should hold in a code-switching context, where both languages are highly activated, semantically related words from both languages compete in lexical selection, the outcome in this case can be from either language. This is different from a situation when a bilingual uses a word from the non-target language to fill a lexical gap, there would not be competition between translation equivalents in such a case.

It has been suggested before that concrete nouns have a more direct translation equivalent across languages than abstract nouns do, and are thus more integrated in the bilingual lexicon (Van Hell and De Groot, 1998). Furthermore, studies with bilinguals have shown that reaction times for concrete nouns and cognates³ are faster than for abstract nouns in translation or word association tasks (Marian and Spivey, 2003; Finkbeiner et al, 2004). By extracting English code-switched nouns that occur as part of Romanian dominating clauses and comparing them to their L1 translation equivalent, I deliver an overview of all the types of code-switched nouns that occur in this set of data. Results of the analysis show that both concrete nouns and abstract nouns are switched in similar proportions. Even more, we encounter both concrete and abstract English nouns that have a direct translation equivalent in Romanian, and English nouns that do not cover the same meaning as their Romanian counterpart. The occurrence of such a wide range of L2 switched nouns indicates that there is strong competition from L2 to L1 in a code-switching context, even though the bilinguals are L1 dominant.

2. Lexical activation and linguistic representation in bilinguals

Studies have shown that both languages of a bilingual can be active even in a monolingual context, and the representational systems are simultaneously active even when only one of the languages is being used (VanHell and DeGroot, 1998, Marian & Spivey, 2003, Colome, 2001). To understand how lexemes are selected during CS in L1 dominant bilinguals, such as the participants providing the CS examples for this study, we need to consider some of the studies focusing on lexical activation and lexical processing in such bilinguals.

Finkbeiner et al (2004) argue that an asymmetry between the languages of an L1 dominant bilingual can be seen in lexical decision task, where L1 masked primes seem to facilitate decision times for L2 target words (L2- L1 condition), but the opposite does not

² A lemma is a mental, conceptual representation of a word

³ Nouns that overlap in form and meaning between two languages

seem to hold (L1- L2 condition). However, when it comes to semantic categorization tasks, where participants are primed with translation equivalents from either language there seems to be no asymmetry between the L1- L2 condition and L2- L1 condition. In order to show this, Finkbeiner et al (2004) conducted a word identification experiment, where Japanese-English bilinguals had to identify if a target was a word or a non-word. The goal of this experiment was to see if bilinguals processed the English words similarly to native speakers, based on concreteness and frequency. Participants were presented with a list of concrete and abstract words with varying degrees of frequency, in combination with a list of generated non-words. Each target word was preceded by a masked prime word. There were two conditions in this experiment. First, participants performed the task for Japanese words while being primed with an English translation equivalent and a control prime (the L2 –L1 condition). Second, they performed the task for English words while being primed with a repetition of the target presented in lower case letters, and a control prime (the L2-L2 condition). The control prime in both cases was unrelated to the target word but it was matched with the target on length, frequency, and concreteness level.

The results of this experiment show that participants responded significantly faster when they were primed with a translation equivalent versus a control prime in the L2-L1 condition. The L2 control prime did not interfere with the target word, but actually facilitated target processing in this case. In the L2 - L2 condition concrete nouns were processed faster than abstract nouns, and high frequency words of each category were processed faster than low frequency words.

Marian and Spivey (2003) conducted two eye-tracking experiments with Russian-English bilinguals. They tested between-language, within-language, and simultaneous competition from both languages in bilingual spoken language processing. The goal of the first experiment was to control for language mode, therefore participants were not aware that they were part of a bilingual study, in order to avoid conscious activation of both languages. Participants were presented with a simultaneous display of three types of objects: target objects, competitor objects, and filler objects. The name of competitor objects overlapped phonologically with the name of the target object, either in English, Russian, or both. The name of the filler objects did not overlap in either language. Participants were asked to look at the target object. The eye-tracker measured the time they spent looking at competitor or filler objects. In the no-competition control condition, one of the objects was the target object and three other objects were control filler objects. In the between-language competition condition, one object was the target object, one object was a competitor whose name in Russian overlapped with the name of the target object, and two objects were fillers. In the within-language competitor condition, one object was the target object, one object was a competitor whose English name overlapped with the target object, and two were filler objects. Finally, in the simultaneous competition condition, one of the displayed objects was the target object, one was a between-language competitor, one was a within-language competitor, and one was a filler object. In each condition participants looked at competitor objects before fixating on the target object. Results show that bilinguals may experience competing activation from phonologically overlapping items, within the same language and between languages, from their first to their second language. Even under such controlled conditions, both languages of the participants were activated. A second eye-tracking experiment, replicated after the first experiment, was conducted with different Russian-English bilingual participants. They were controlled for a monolingual first language mode (Russian) this time. Results of this experiment revealed that there was a stronger within language competition, than a between

language competition from L2 to L1, leading to the conclusion that the second language did not compete significantly with the first language.

Van Hell and De Groot (1998) also analyzed the processing of concrete and abstract nouns in bilinguals in within- and between-language conditions. They conducted a word association experiment with Dutch dominant English-Dutch bilinguals, examining the conceptual representation of words with different characteristics in bilingual memory. Participants were divided into four groups each participating in a word association task, two within-language and two between-language tasks. They were presented with a stimulus in one language and were instructed to respond either in the other language or in the same language, depending of the group they were in (English– Dutch, Dutch– English, English– English, Dutch– Dutch). The stimuli consisted of a list of Dutch nouns, verbs and adjectives with different degrees of concreteness, and cognate status and their English translation. Only nouns and verbs were targeted, adjectives served as fillers. All participants took part in a second session, where the language of the stimuli was the same as the first time, but their responses had to be in the other language. To measure the consistency of associative responses, participants who were selected for the within-language conditions came back for a third session, and performed the tasks from the first session again. Reaction times were measured during all sessions. Overall, there were more equivalent responses for concrete nouns and verbs than for abstract nouns and verbs. Furthermore, associations for cognates were more often translations than for non-cognates. The results of the third session show that participants were not inclined to give the same associative responses twice in most of the cases. For example, the same responses were repeated only in about 50% of the cases for Dutch concrete cognate nouns. Reaction times measured in the first monolingual association task (Dutch-Dutch) show that participants responded faster in finding an associate for cognates than to non-cognates. At that stage in the experiment participants were performing in their native language and were not aware that they were part of a bilingual experiment. Van Hell & DeGroot (1998) suggest that these results indicate that the second language was nevertheless active and facilitated performance in the first language.

Overall concrete nouns were processed faster than abstract nouns. Van Hell and DeGroot (1998) suggest that concrete nouns gave rise to a higher degree of associative similarity because they share more features across languages and are thus more integrated in the bilingual lexicon. Features of abstract nouns on the other hand are more language specific, meaning that translation equivalents are more likely to be co-activated for concrete nouns during language production.

As we have seen so far, lexical selection in bilinguals happens not only between semantically related words from the target language, but from co-activated words from the non-target language. According to Finkbeiner et al. (2006) this seems like a hard problem, but only from a modeling perspective. Bilinguals do not encounter any problems in speaking one language and not the other. They suggest that it may not be the case that lexical selection is competitive. On the other hand, Dijkstra et al (2013) point out that in early stages of second language acquisition in late bilinguals, L2 words compete with L1 words, while in late stages of acquisition L2 words compete with other L2 words. While L1 words – L2 words subjective frequency distribution can become more balanced in time, at every stage of language acquisition we can assume that L2 words have been used at lower frequency than L1 words, since they have been used only a fraction of the time. Furthermore, Marian and Spivey (2004) have shown that there is less competition from L2 to L1 in bilinguals who are L1 dominant when they are using their native language.

The question I am raising is, what happens in code-switching, when both languages are activated at a high level and elements from two languages come together? If we know that in lexical competition concrete nouns are processed faster than abstract nouns, and frequent nouns of any category are processed faster, what type of switched L2 nouns should we expect to see in the code-switches of sequential bilinguals who are dominant in their L1? At the same time, if the second language does not compete significantly with the first language, how do L2 nouns win in lexical selection in code-switching? To get a closer understanding of between-language lexical competition in CS, I am analyzing the nature of switched L2 nouns from a corpus of Romanian-English CS data.

3. Data and Methodology

The CS data I am analyzing comes from spontaneous conversations of first generation Romanian-English bilinguals from the Chicago area. I recorded conversations between myself and four participants, three females and one male, with ages between 26-32 (at the time of the recordings). All participants in the conversations are first generation immigrants in the USA and have lived in the USA for at least the past six years of their lives. They are native speakers of Romanian and learned English as a second language in a formal context⁴ before living in an English speaking society at a later stage in their lives. All participants in the conversations received a form of higher education in English (Bachelor's degree or higher). They use both Romanian and English on a regular basis, for various purposes of their daily lives. I met with each of the four participants on separate occasions and had informal, friendly conversations in cafes or at their residence. Each of the conversations lasted roughly one hour. I used an iPod Touch 4G to record the conversations and transcribed them on my personal laptop using ELAN⁵.

After transcribing the data, I selected all utterances from the transcripts that contained code-switches. There is an asymmetry in the rate at which the two languages are used, Romanian being the dominant language, and English the less dominant one. Switches from L1 to L2 happen at various points in the clause (e.g. between determiners and nouns, prepositions and nouns, verbs and nouns, nouns and adjectives, etc.). Furthermore, several categories are being switched, nouns being switched at the highest rate (then verbs, adjectives, and adverbs). To assure a uniform selection criterion for the nouns to be analyzed, I chose to select only English nouns that occurred in intrasentential CS, and I extracted only the English nouns that occurred in a switch between a Romanian constituent and an English noun phrase. I considered that there was a better reason to assume a strong competition in noun selection between L1 and L2 nouns where an L2 noun is embedded in an L1 frame. Example (1) below shows an illustration of my methodology. There are two distinct switches from Romanian to English (shown in *Italics*) in the utterance. The first switch is at clause boundary, after the complementizer *ca* – ‘that’, and the second switch is between the preposition *cu* – ‘with’, and the noun phrase ‘their research’.

⁴ Participants had by-weekly class room instruction in English for at least four years or more before entering college

⁵ ELAN is an annotation software created at the Max Plank Institute in the Netherlands. More information on ELAN can be found at <http://tla.mpi.nl/tools/tla-tools/elan/>

(1) Le-am zis că *I could use my research* în combinație cu *their research* for further investigation

“I told them that I could use my research in combination with their research for further investigation.”

The first switch is an intersentential CS, where a whole English clause is switched. I excluded English nouns that occurred in such a context from the total token count as I found it debatable, whether there is the same type of competition between L1 and L2 nouns in such a context as in an intrasentential context. Thus, I focused only on intrasentential CS. The second noun, ‘research’, where the switch is between a L1 preposition and a L2 noun phrase, is the type of L2 noun in this utterance that fits the above-described criterion, and was selected for the analysis.

The extracted L2 noun tokens were divided in concrete and abstract nouns. Concrete nouns were considered any nouns that referred to an entity that has a physical form and can be pointed to, while abstract nouns were all the nouns that did not have this property. English nouns were then verified for a Romanian translation equivalent in two ways. First I looked up the nouns in Romanian-English online dictionaries to find their direct translation. Second, I ran the English nouns through the MultiWordNet multilingual lexical database⁶, which delivers an overview of semantic relations between Romanian and English words. MultiWordNet contains lexical databases for several languages, English and Romanian being among them. When entering an English word in the search engine of the database the website provides all the senses the word has in English and displays the Romanian correspondents for each sense. If a lexical concept of one language has no correspondent in the other, the search results will indicate a lexical gap. If a L2 noun is used as a lexical gap filler during code-switching, i.e. there is no translation for such a noun in L1, we cannot argue that it competes in lexical selection with its L1 counterpart. Thus such occurrences were excluded from the analysis.

There were a few instances where L2 compound nouns were switched, such as ‘*tax form*’ in (2) below. In such a case, compound nouns were grouped by the concreteness degree of their head.

(2) primești ceva *tax form* pentru *loan-uri* de la școală
 get.2Sg some tax form for loan-FPl from at school
 “Do you get some tax form for loans from the school?”

There were cases however where compound nouns were separated by the speaker in a way that allowed them to be considered two separate tokens, such as in (3) below:

(3) (...) care e *choice-ul* de *vegetable*
 (...) what is choice-DetMSg of vegetables
 “(...) what is the choice of vegetables”

There is a Romanian head attached to each English noun in (3): the Romanian determiner *-ul* occurs on the noun ‘choice’, and the Romanian preposition *de* occurs on the noun ‘vegetable’.

⁶ More info on MultiWordNet can be found at: <http://multiwordnet.fbk.eu/english/home.php>

4. Overview of findings and discussion of results

I looked at a total of 78 tokens, 44 concrete nouns and 34 abstract nouns. While there are slightly more concrete noun tokens than abstract noun tokens, their number is too small to determine if concrete nouns are switched at a higher rate than abstract nouns. The fact that both type of nouns occur with relatively equal frequency, indicates that there is not a stronger lexical competition from L2 to L1 for abstract nouns than for concrete nouns. If bilinguals process concrete frequent nouns faster than other nouns, we would expect a small number of such L2 nouns switched, since we can expect that the L1 equivalents have been used overall at a higher rate. However, this does not seem to be the case.

Most of the identified L2 concrete nouns point to people, objects, and places, and have different degrees of semantic relatedness to their L1 equivalents. The switched nouns, ‘waitress’ and ‘roommate’ indicated in *Italics* in examples (4) and (5) are both concrete nouns pointing to a person and have a direct translation equivalent in Romanian:

(4) ca *waitress* ai frazele tale prestabilite
as waitress have.2Sg phrases your established
“As a waitress you have your established lines.”

(5) am un *roommate* dar numai temporar
have.1Sg DetMSg roommate but only temporary
“I have a roommate, but only temporary.”

On the other hand, both concrete nouns ‘basement’ and ‘place’ in (6) have a direct equivalent in Romanian but point to different entities when used in this context:

(6) Intr-un hotel la *basement* este un foarte bun *Asian place* in South
Loop
in DetMSg hotel at basement is DetMSg very good Asian place in South
Loop
“There is a very good Asian place in the basement of a hotel in the South Loop.”

The first noun ‘basement’ has two senses in English: the lowermost portion of a structure often used for storage, and the ground floor of a house/ building. There are two separate words in Romanian for each sense: *pivniță* and *subsol*, the first pointing to a storage space and the latter pointing to the space of a building located under ground level⁷. In this example ‘basement’ is used to point to a livable space where a restaurant is located and may be preferred over the Romanian translation equivalent, which does not cover this sense explicitly. The second switched noun - ‘place’ - occurs with a modifier attached to it, ‘Asian’. The translation for ‘place’- *loc* – has twenty senses in Romanian making it a frequent noun. ‘Place’ has five senses in English and is also a frequent noun⁸. If the noun used more frequently were processed faster we would expect the L1 noun to win in the lexical competition. In this example, however, the entire noun phrase is switched with the adjective phrase attached to it, pointing to a specific type of place, an ‘Asian place’, so we have to consider the meaning and the frequency of the phrase as a whole, not just the noun.

⁷ The information about the senses of the words is taken from <http://multiwordnet.fbk.eu>

⁸ Frequency measures are taken from the COCA data base at <http://corpus.byu.edu/coca>

A similar switch on a frequent abstract noun, ‘*language*’, can be seen in (7). In this case the switch is introduced as a ‘chunk’, i.e. it is a noun phrase with an adjective attached to it, pointing to a specific type of language, ‘*offensive language*’.

- (7) Sunt legi care sancționează dacă folosești *offensive language* în presă
 Are laws that sanction.3Pl if use.2Sg offensive language in press
 “There are laws that sanction the use of offensive language in the press (media).”

While both the noun ‘*language*’ on its own and the phrase ‘*offensive language*’ have a direct translation equivalent in Romanian, I was not able to find any information if the phrases have a similar frequency in both languages.

When it comes to abstract nouns, we encounter L2 nouns with various degrees of semantic relations between the two languages. The noun ‘*flu*’ in (8) has a direct translation equivalent in Romanian- *gripă* – and has one sense in both languages:

- (8) are *flu* acuma
 has flu now
 “He has the/ a flu now.”

On the other hand, the switched noun ‘*encounter*’ in (9) has nine senses in English and is found with the closest translation *întâlnire* in Romanian, which has eight senses, making it thus hard to determine whether one of the English senses is better suited in this context, making the L2 word the better candidate during language selection:

- (9) pe la 20 de ani au primul *encounter* cu gramatica
 on at 20 of years have.3pl first encounter with grammar
 “They have their first encounter with grammar in their 20s.”

A less ambiguous case can be seen in (10). The switched noun ‘*pattern*’ has the closest Romanian translation of *model* – ‘model’, or *exemplu* – ‘example’. None of these two senses seem to cover the repetitive nature that the noun ‘*pattern*’ suggests as it is used in (10):

- (10) ei recunosc *patterns* și le aplica
 they recognize patterns and them apply
 “They recognize patterns and apply them.”

Another example of an English abstract noun that has a translation that covers a different sense in Romanian than in English can be seen in (11). The closest translation for the switched noun ‘*ride*’ is *călătorie*, which is closer in meaning to ‘journey’, a sense that does not correspond to the use of ‘*ride*’ in (11):

- (11) mi -am facut rost de un *ride*
 Refl.1Sg have.1Sg made purpose of DetMSg ride
 “I found a ride.”

As shown so far, both concrete and abstract L2 nouns are switched and used with a sense that has a direct correspondent in Romanian or with a sense that covers more than the closest Romanian translation. One of the cases where there is no doubt with regards to semantic relatedness is the use of L2 cognate nouns that overlap in form and meaning with

their L1 correspondents. While the number of switched cognates is low, a few cognates were encountered in switches for both noun categories. In (12) below we can see a switch on the noun '*tutor*', which has the Romanian equivalent – *tutor*. Both nouns have the same meaning and are similar in form, the difference being in the pronunciation, which indicates that it is used in English.

- (12) nu o să mai pot să fiu *tutor* când nu mai îs student.ă
 no will to more can.1Sg to be.1Sg tutor when no more is.1Sg student.FSg
 "I won't be able to be a tutor when I am not a student anymore."

A particularly interesting use of switched cognates can be seen in (13), where we encounter two cognates '*certificate*' (with the Romanian equivalent *certificat*) and 'assistant' (with the Romanian equivalent *asistent*). It seems as if the compound 'assistant certificate' is split, rearranging the head and the modifier according to the rules of Romanian, which is a head-first language when it comes to compounds. The first L2 noun is attached to the L1 determiner *un* and the second L2 noun to the L1 preposition *de*:

- (13) un *certificate de assistant*
 DetMSg _____ of _____
 an assistant certificate

There are not sufficient examples in the data to make significant conclusions about lexical competition for cognates. The downside of using naturalistic data from transcribed conversations is that we cannot determine what triggers certain switches just by looking at the context. Visual and auditory stimuli, or triggers for CS are present in naturalistic conditions but cannot be determined in this case simply by looking at the utterances or listening to the recordings.

5. Conclusions

For the present study I looked at a corpus of CS data from spontaneous conversations of first generation Romanian-English bilinguals, in order to analyze the factors that determine the selection of L2 nouns in a context where the first language dominates. The analyzed data contained switched English nouns that were concrete, and abstract, and also contained cognates, and frequent nouns of both categories. The switched L2 nouns either contained a meaning not directly covered by their L2 equivalent, or appeared as part of a more complex switch with other L2 elements attached (most often compound nouns). Results of the analysis show that there is a strong between-language competition in CS, and that L2 nouns compete with L1 nouns in lexical selection, even if the speakers are L1 dominant. Clyne (1980) argues that sentence planning takes place at the pre-lexical level, items being first selected abstractly and then accommodated into the sentence structure. However, language interaction is more complex. According to Marian (2009) the lexicon is where switching takes place in most cases, while the conceptual store is where transfer takes place. Switching may take place at the conceptual level if the lexical item does not have a representational equivalent in the other language. At the same time, one of the contexts in which bilinguals tend to switch to a non-target language is when they are more familiar with the topic in that language. It may be that switched frequent nouns, and cognates are used because they more familiar to the speaker in the current context.

Previous studies have tested lexical activation and processing in bilinguals in experiments (Van Hell & De Groot, 1998, Finkbeiner et al, 2004) and have shown that

knowledge of one language can facilitate word processing in the other language, even when only one of the languages is used. In a code-switching environment, both languages of a bilingual are highly active and the bilingual has a larger lexical inventory to choose from in speech. This analysis shows that the switched nouns are not chosen at random in spontaneous speech. Speakers have to decide between nouns, which share semantic representations across the two languages, and pick the noun that best represents the meaning they want to transmit.

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