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Self-reported use and perception of the L1 and L2 among maximally proficient bi- and multilinguals: a quantitative and qualitative investigation*

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Abstract

This study investigates language preferences and perceptions in the use of the native language (L1) and second language (L2) by 386 bi- and multilingual adults. Participants declared that they were maximally proficient in L1 and L2 and used both constantly. A quantitative analysis revealed that despite their maximal proficiency in the L1 and L2, participants preferred to use the L1 for communicating feelings or anger, swearing, addressing their children, performing mental calculations, and using inner speech. They also perceived their L1 to be emotionally stronger than their L2 and reported lower levels of communicative anxiety in their L1. An analysis of interview data from 20 participants confirmed these findings while adding nuance. Indeed, differences in the use of the L1 and L2 and perceptions of both are often subtle and context-specific. Participants confirmed the finding that the L1 is usually felt to be more powerful than the L2, but this did not automatically translate into a preference for the L1. Longer stretches of time in the L2 culture are linked to a gradual shift in linguistic practices and perceptions. Participants reported that their multilingualism and multiculturalism gave them a sense of empowerment and a feeling of freedom.

Keywords: uses of L1 vs. L2; perceptions of bilinguals; feelings and bilinguals; multilingualism.

1. Introduction

One of the great unanswered questions in Second Language Acquisition (SLA) and bilingualism research is whether individuals can be labeled as “balanced bilinguals” or “ambilinguals”, that is speakers with “native-like ability in two languages” (Toribio 2001: 215). One crucial element in this debate was provided by Grosjean (2008), who pointed out that “bilinguals usually acquire and

use their languages for different purposes, in different domains of life, with different people. Different aspects of life often require different languages” (2008: 23). As a consequence of this Complementarity Principle, bilinguals may vary in level of proficiency in a language according to the type of domain for which the language is needed. A language spoken with a limited number of interlocutors in a reduced number of domains “may be less fluent and more restricted than a language used extensively” (Grosjean 2008: 24).

Although bilinguals may claim to be ambilingual when asked about their competence in both languages in general terms, they might in fact be more proficient in one language in certain situations or with certain people. Being more proficient does not imply that fewer grammar or pronunciation errors would occur in one of their languages. It might simply mean that bilinguals feel more at ease in one of their languages in certain situations or with certain people, or that they are better able to describe their emotional state. In other words, bilinguals may well feel maximally proficient in both languages yet display clear language preferences for certain speech acts or topics.

One of the problems constraining research on near-native speakers is that performance in the second language (L2) by near-natives is usually compared to that of a group of monolingual native speakers. Although efforts are usually made to make both groups comparable in terms of gender, age, and education level, the question remains whether it is justified to compare L2 measures of bi- and multilinguals with native language (L1) measures of monolinguals. Indeed, direct comparisons seem problematic if we accept that bi- or multilinguals are more than the sum of monolinguals (Grosjean 1982). One way to avoid this problem is to compare measures of bi- and multilinguals in all their languages with those of other bi- and multilinguals. The bi- and multilinguals provide their own baseline measures for the L1 (see Dewaele 2007a, 2007b).

This study focuses on emotion and affect in bi- and multilingual interaction, an area of research that has recently seen exponential growth (Dewaele 2010; Knickerbocker and Altarriba 2010; Pavlenko 2005, 2006).

2. Literature review

The literature on language choice and perceptions of emotionality among bi- and multilinguals in emotional interactions spreads across various disciplines, with researchers using a wide range of methods to gather data. First I will examine the emergence of this paradigm, and then focus more specifically on the psycholinguistic, cognitive psychological approach and the sociolinguistic, applied linguistic approach.

Bond and Lai (1986) were among the first researchers to look into the different emotional resonances of bilinguals' languages. They discovered that one

reason for bilingual code switching to the L2 was to hide embarrassment about the use of taboo words in the L1. In a similar vein, Javier and Marcos (1989) found that code switching to an L2 allowed participants to distance themselves from what they were saying, thus reducing their anxiety. Anooshian and Hertel (1994) measured the ability of Spanish-English bilinguals who were late learners of their L2 to recall neutral and emotional words in both languages. Participants were highly fluent in both languages, but half of them had Spanish as an L1 and the other half had English as an L1. The participants viewed neutral and emotional words in Spanish and English and were unexpectedly asked to write down as many words as they could remember. A memory advantage for emotional words was found in all participants' L1 but not their L2. Altarriba (2003) suggested that emotional words in bilinguals' L1 benefit from multiple memory traces, leading to a stronger semantic representation. Emotional words in a less frequently used language may have fewer associations and thus be less deeply encoded. This could explain why the L2 has often been described as being more detached or distant than the L1 (Dewaele and Pavlenko 2002).

Research on bilingual autobiographical memory shows that no single language is more emotional by itself, but rather that emotional intensity depends on whether the memories are told in the language in which they were encoded. Javier et al. (1993) asked native Spanish speakers and Spanish-English bilinguals to describe a life experience using the language in which the event took place (L1 or L2). The bilinguals then described the event again in their other language. The authors found that the first version was more detailed, more elaborate, and more vivid than the second version, regardless of language. Similarly, Schrauf and Hoffman (2007) looked at emotional intensity and valence in autobiographical memories of immigrants. The researchers found that memories from youth were recalled with less emotional intensity than memories from old age, and that negatively valenced memories were rated as less intense than positively valenced memories. It thus seemed that the immigration event created separate contexts for the usage of immigrants' L1 and L2, and that this led "to the formation of different associations between bilinguals' languages and their autobiographical memories" (Knickerbocker and Altarriba 2010: 461).

Marian and Kaushanskaya (2004) analyzed Russian and English language autobiographical memories of Russian-English bicultural, bilingual adults who had immigrated to the United States as teenagers. Language choice was found to affect self-construal. The recall of memories in English, a language associated with a more individualistic culture, resulted in more individualistic narratives. Alternatively, memories in Russian, a language associated with a more collectivist culture, produced more collectivistic narratives. This was regardless of the language of encoding or the main agent in the narrative. Participants expressed more intense emotion when retrieving a memory in the same

language as the one used during the event. Age also affected the valence of the memories, with memories encoded later in life being rated more positively than memories encoded earlier in life.

Similarly, Panayiotou (2004a, 2004b) investigated the differences in Greek-English and English-Greek bilinguals' reactions to hearing the same story read to them in both languages. Participants interpreted and related the same events differently, depending on the language context. The Greek version of the story elicited sympathy and concern for the protagonist, whereas in English it elicited indifference and disapproval. Different imagery and cultural scripts were used in the retelling, which suggests that participants were drawing on distinct linguistic repertoires and cultural frames. There was also some code switching, evidence that bicultural bilinguals interacting with other bicultural bilinguals can use the full range of their cultural and linguistic repertoires.

Altarriba and Canary (2004) used a word-priming paradigm to investigate the effect of word arousal, an emotional component of words, on word recognition in bilinguals. The authors developed word pairs, which were then presented to participants in sequential order. Participants had to indicate whether the second word was a word or a non-word. Previous research showed that when the first word, or prime, was related to the target, participants generally exhibited a priming effect, as evidenced by faster reaction times. This effect also occurred when the prime and target were emotionally charged (negative or positive) in the same way. Altarriba and Canary (2004) found evidence of affective priming in both English monolinguals and Spanish-English bilinguals. But in some conditions, bilinguals had longer reaction times and less priming effect when compared to monolinguals. The authors suggest that this difference might be linked to the fact that the bilinguals had learned and used English in educational and work environments, and that their English emotion words had fewer emotional connotations and therefore reduced affective priming (Altarriba and Canary 2004).

The Emotional Stroop task has also been used to investigate bilinguals for differences in processing emotional words. It is based on the traditional Stroop task, which focuses on the phenomenon of interference in a color-naming task. Typically, participants need more time to identify the ink color of incongruent color words (for example, the word BLUE printed in red ink) than of congruent color words (for example, the word BLUE printed in blue ink). Interference in the Emotional Stroop task is a result of the emotional content of the words and not the incongruence of the words presented. Participants are asked to report the color of each word instead of the actual words. Emotions typically have an interference effect resulting in an increase in reaction time on the color-naming task. Sutton et al. (2007) used this method with highly proficient Spanish-English bilinguals, who showed evidence of interference on emotional words. Participants had shorter reaction times with neutral words than

with emotional words in Spanish and English. In brief, emotional words captured participants' attention regardless of the language in which they appeared. Participants responded significantly faster when the words were presented in English, but the relative size of the interference effect caused by the emotional component was similar in both languages. Eilola et al. (2007) followed a similar procedure with Finnish participants who were proficient late learners of English. In their study, participants had longer reaction times on the Emotional Stroop task when presented with taboo and negative words. These findings suggest that "language proficiency, rather than age of acquisition, had a larger influence on bilingual performance on the Emotional Stroop Task", and that "emotional content in different languages does not result in processing differences in bilinguals when they have equal levels of proficiency in both languages" (Knickerbocker and Altarriba 2010: 456–457).

Caldwell-Harris and her team have carried out some pioneering studies on physiological responses to swear words and taboo words in the L1 and L2 of bilinguals. Using lie-detector technology, Harris et al. (2003) investigated the skin conductance responses of 32 Turkish-English bilingual university students with Turkish as their L1, compared with English as their L2. Physiological reactions to taboo words that were read aloud in Turkish were found to be much stronger than their translation equivalents in English.

Harris (2004) investigated whether emotionality effects would be stronger in an L1 even if it were the weaker language. A comparison of the adult offspring of Latin American immigrants in the United States, for whom English was considered the L2 but also the dominant language, and more recently arrived immigrants from Latin America to the United States showed that only the latter group reacted more strongly to reprimands in Spanish. The early learners of English had similar patterns of electrodermal response in both languages. The author thus concluded that languages learned in childhood elicit similar physiological reactions. To explain why an L1 was not more emotional than an L2 acquired in childhood, the author proposed "a mechanism independent of age, namely the emotional contexts of learning hypothesis; where language is experienced as emotional when it is acquired and used in an emotional context" (Harris 2004: 276–277). A follow-up study with Turkish-English bilinguals residing in Istanbul confirmed that emotional phrases presented in an L1 elicited higher skin conductance responses than those in an L2 (Caldwell-Harris and Ayçiçeği-Dinn 2009). The researchers also looked more specifically at emotion memory effects (that is, the fact that emotional words are more frequently recalled than neutral words) among 59 Turkish-English students from a university in Turkey (Ayçiçeği-Dinn and Caldwell-Harris 2009). Overall emotion-memory effects were similar in the two languages, with reprimands having the highest recall, followed by taboo words, positive words, negative words, and finally neutral words.

Pavlenko (2004) used a subsample of the Bilingualism and Emotion Questionnaire (BEQ) database (Dewaele and Pavlenko 2001–2003) to look at language choice in emotional parent-child communication. She used feedback from 389 parents on closed questions about the frequency (on a 5-point Likert scale) with which they used their different languages with their children in general, and also in typically emotional interactions like disciplining and praising them. She also considered the spontaneous comments of 141 participants about parent-child communication. Statistical analysis of the quantitative data revealed that language dominance is the key factor affecting language choices, overall and in emotional expression. Parents dominant in the L1 reported a preference for the L1 in communication with children, but those dominant in a foreign language were less likely to use the L1 (Pavlenko 2004: 186). A significant effect also emerged between perceived emotionality for the L2 and the choice of that language for disciplining and praising the children. No such relationship existed between perceived emotionality of the L2 and its general use (Pavlenko 2004: 188). Pavlenko (2004) found a strong emotional tie of many parents to their L1, hence their preference to use that language with their children. However, some parents reported feeling comfortable communicating in their L2 with their children, though they said they might occasionally switch to their L1 when feeling very emotional. Other parents reported the opposite pattern — using their L1 with their children, but switching to their L3 (the partner's native language) to scold the children because they would react faster. Interestingly, parents who used their L2 very frequently overall also used the language most frequently to discipline their children. The L2 was used less frequently to praise the children.

Dewaele (2004a) considered self-reported language choice for swearing among 1039 bi- and multilingual adults, using a part of the corpus collected through the BEQ. The results suggested that swearing happens most frequently in the bi- and multilinguals' dominant language. Participants who had learned a foreign language through classroom instruction but had also used that language in authentic interactions outside the classroom, and participants who had an early start in the acquisition of the foreign language tended to use that language more frequently for swearing than participants who had purely formal instruction and were later starters. General frequency of language use showed a highly significant positive relationship with language choice for swearing in the L2, L3, L4, and L5. The author argued that “a frequent user of a language develops the correct perception of the emotional force of swear words and may at some point feel he/she is close enough to the in-group to dare using these powerful words” (Dewaele 2004a: 102). Gender and education level did not affect language choice for swearing. Frequency of language choice for swearing was also positively correlated with the perceived emotional force of swear words in that language. In Dewaele (2004b), the same corpus was used to ana-

lyze individual variation in the perceived emotional force of swear words in bi- and multilinguals' different languages. Statistical analyses revealed that emotional force was significantly higher in the L1 and was gradually reduced in languages learned later in life. This confirmed earlier research showing higher emotionality of the L1 compared to languages acquired later (see Dewaele and Pavlenko 2002; Pavlenko 2005; Harris et al. 2003). Participants who learned their language(s) in a naturalistic — or mixed — context rated the emotional force of swear words in that language higher than participants who had learned a language only through classroom instruction. Perception of swear words' emotional force in a language was positively linked to self-rated proficiency and general frequency of use. Age of onset of acquisition was found to predict perception of the emotional force of swear words in the L2, but not in later languages. An analysis of feedback from participants showed a general preference for swearing in the L1. However, the stronger emotional resonance of L1 swear words did not prevent some from occasionally using other languages, depending on their communicative intentions.

Dewaele (2005), again using the same corpus, focused specifically on the effect of the acquisition context on the self-reported use and perceived emotional force of swear words. The effect was significant for both dependent variables, but generally stronger for self-reported language choice of swearing than for perception of the words' emotional force.

Dewaele (2007b) investigated self-reported language choice for mental calculations in the BEQ database. Mental calculation is a complex cognitive operation involving both language-dependent and language-independent processes. The author found that the L1 was by far the preferred language for mental calculation, with degree of use following order of acquisition. Perhaps bi- and multilinguals' preference for the L1 is linked to the fact that they learned this specific cognitive operation at school in the L1, which was typically also the dominant language. This finding corroborated earlier research showing that bilinguals prefer to perform arithmetic operations in the language of instruction, which is usually the L1 (see Bialystok 2005).

Dewaele (2010) combined a quantitative study of self-reported code switching frequency in emotional interactions using the data from the BEQ database with a more qualitative study based on interview material from 20 bi- and multilinguals living in the United Kingdom that will also be used in the present study. Self-reported code switching was found to be significantly more frequent when talking about emotional topics with familiar interlocutors than about neutral topics and with unknown interlocutors. We speculated that higher emotional arousal could force a bilingual speaker out of a monolingual mode and into a bilingual or trilingual language mode. Interview data revealed that the preferred direction of code switching in situations where strong emotion had to be expressed was from the L2 to the L1. However, some participants of

Asian and Arab origin reported code switching in the opposite direction, typically to overcome social constraints on the overt expression of emotion in their L1.

One type of emotion — communicative anxiety — was described by MacIntyre and Gardner (1994) as a “feeling of tension and apprehension” (1994: 301). Communicative anxiety has been found to be consistently lower in the first language compared to languages acquired later in life (Dewaele 2007c). This finding was confirmed by Dewaele et al. (2008), where levels of communicative anxiety and foreign language speaking anxiety increased significantly from the L1 to the L2, and from the L3 to the L4 of multilinguals, across a range of situations. Levels of communicative anxiety were linked to a myriad of interacting psychological, situational, linguistic, cultural, and social factors.

In sum, the literature suggests that bilinguals' L1 is generally (but not always) the language that elicits the lowest levels of communicative anxiety and that has the strongest emotional resonance. Altarriba (2003), Harris et al. (2006), and Pavlenko (2002, 2005) suggest that this effect stems from the way the L1 was learned. Emotional words and scripts learned in childhood acquire rich emotional connotations and may be encoded more deeply, with strong links to the limbic system and storage in implicit memory.

3. Research questions

This study aims to answer the following questions:

- (1) Does self-perceived native-like oral proficiency in the L2 and daily use of the L2 mean that there will be no significant language preference between the L1 and L2 for communicating feelings or anger, addressing children, performing mental calculations, and using inner speech?
- (2) Does self-perceived native-like oral proficiency in the L2 and daily use of the L2 mean that the participant will perceive the L1 and L2 similarly?
- (3) Does self-perceived native-like oral proficiency in the L2 and daily use of the L2 mean that communicative anxiety in the L2 will be similar to that of the L1?
- (4) How do bi- and multilingual adults explain differences in the frequency of use of their L1 and L2 and their perceptions of their languages?

4. Hypotheses

This study expects to find that bi- and multilingual adults who feel equally proficient in the oral production of their L1 and L2, and who use the L1 and L2 daily:

- (1) will use the L2 less frequently for communicating feelings or anger, for carrying on inner speech, and for performing mental calculations;
- (2) will use the L2 less frequently with their children, especially in emotional situations;
- (3) will perceive the L2 to be less colorful, rich, poetic, and emotional than the L1;
- (4) will feel more anxious in their L2.

5. Methodology

5.1. Research instrument

The BEQ (Dewaele and Pavlenko 2001–2003) was an open-access survey available for two years on the Internet, which generated a rich database covering many aspects of multilingual communication. The BEQ was advertised through several listservs, targeted e-mails to multilingual colleagues and their students in academic institutions, appeals in translators' magazines, and informal contacts around the world. It remained online between 2001 and 2003 and attracted 1,579 valid responses from multilinguals across the world.

The first part of the BEQ contained questions relating to participants' socio-biographical and linguistic background. The second part consisted of Likert scale questions about language choice for expressing various emotions with various interlocutors, about code switching behaviors in inner and articulated speech, about the use and perception of swear words, about attitudes toward each language spoken, and finally about communicative language anxiety in each language. The third and final part posed open-ended questions about communicating emotion. The data elicited from the open-ended questions yielded a corpus of about 150,000 words. The questionnaire took about 15 minutes for a bilingual to complete, and about 30 minutes for a pentalingual. The complete BEQ has been incorporated as an appendix in Pavlenko (2005: 247–256) and in Dewaele (2010: 224–230). A detailed analysis of the advantages and limitations of the BEQ can be found in Wilson and Dewaele (2010).

5.2. Participants

The first group consisted of 386 bi- and multilingual adults (288 females, 98 males) extracted from the BEQ database. The participants spoke a total of 42 different L1s. Native English speakers represent the largest group ($n = 86$),

followed by native speakers of Spanish ($n = 57$), French ($n = 49$), German ($n = 37$), Catalan ($n = 22$), Dutch ($n = 21$), Italian ($n = 17$), Russian ($n = 12$), and Afrikaans ($n = 12$). The participants spoke a total of 31 different L2s. The most frequent L2 is English ($n = 86$), followed by French ($n = 49$), Spanish ($n = 57$), and German ($n = 37$). The L2 was defined as the second language to have been acquired and the mean onset of acquisition was at 6.7 years of age. Participants were generally highly educated, with 57 obtaining a high school diploma, 109 a Bachelor's degree, 124 a Master's degree, and 96 a doctoral degree. The mean age was 35 years.

The second group in the study consisted of 20 fluent bi- and multilingual adults (12 females, 8 males) who were interviewed about the topics on the BEQ by a research assistant after filling out the online survey. The aim of these interviews was to establish language choices for swearing in specific situations and also specific swear words, which the BEQ did not elicit. The interviews were transcribed. This group was demographically similar to the first. There were 5 bilinguals, 7 trilinguals, 4 quadrilinguals, 3 pentalinguals, and one sextalingual. Participants were native speakers of Italian ($n = 3$), German ($n = 3$), Japanese ($n = 3$), Arabic ($n = 2$), English ($n = 2$), Greek ($n = 2$), Catalan ($n = 1$), French ($n = 1$), Kurdish ($n = 1$), Serbian ($n = 1$), and Taiwanese ($n = 1$). One participant had a high school diploma, five a Bachelor's degree, three a Master's degree, and seven a doctoral degree. Age ranged from 23 to 65 years, with a mean age of 36 years.

5.3. *Dependent variables*

The quantitative analysis is based on scores provided (on a five-point Likert scale) in response to questions about frequency of use of a particular language. Possible answers included: never = 1, rarely = 2, sometimes = 3, frequently = 4, all the time = 5. Participants answered the following questions:

- (1) What language do you express your deepest feelings in?
- (2) If you are angry, what language do you typically use to express your anger / to swear in?
- (3) If you have children, what language do you typically use?
- (4) What language do you favor in scolding or disciplining them?
- (5) What language do you select for praise and/or intimate conversations with them?
- (6) If you form sentences silently (inner speech), what language do you typically use?
- (7) If you perform mental calculation, what language do you typically use?

Next, participants answered questions concerning the perception of L1 and L2 characteristics, as well as the emotional weight of swear words in each language. Possible answers included: not at all = 1, somewhat = 2, more or less = 3, to a large extent = 4, absolutely = 5. The questions were as follows:

- (8) Here are some subjective statements about the languages you know. Please mark to what extent they correspond to your own perceptions. There are no right or wrong answers. How useful, colorful, rich, poetic, emotional is your L1? your L2?
- (9) Do swear and taboo words in your L1 and L2 have the same emotional weight for you?

A final question dealt with communicative anxiety. Participants had the option between: 1 = not at all, 2 = a little, 3 = quite anxious, 4 = very anxious, 5 = extremely anxious. The question was formulated as follows:

- (10) How anxious are you when speaking in your L1 or L2 with friends, colleagues, strangers, on the phone, in public?

A series of one-sample Kolmogorov-Smirnov tests showed that none of the dependent variables are normally distributed (Kolmogorov-Smirnov Z-values varied between 4.37 and 12.3, all significant at $p < .0001$). Nonparametric Wilcoxon signed-rank tests were therefore used instead of t-tests.

6. Results

6.1. Language choice for expressing feelings

A Wilcoxon signed-rank test showed a significant preference for the L1 in self-reported language choice for communicating feelings with various interlocutors (see Figure 1).

6.2. Language choice for expressing anger and for swearing

A Wilcoxon signed-rank test showed significant differences between self-reported frequency of using the L1 and L2 for expressing anger to oneself, to friends and family, and in letters (see Figure 2). No significant difference emerged for expressing anger to strangers. The L1 was significantly favored over the L2 for swearing.

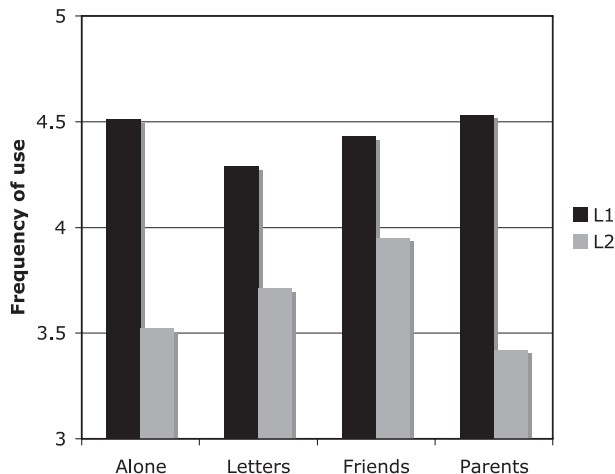


Figure 1. *Self-reported language choice for communicating feelings in the L1 and L2*

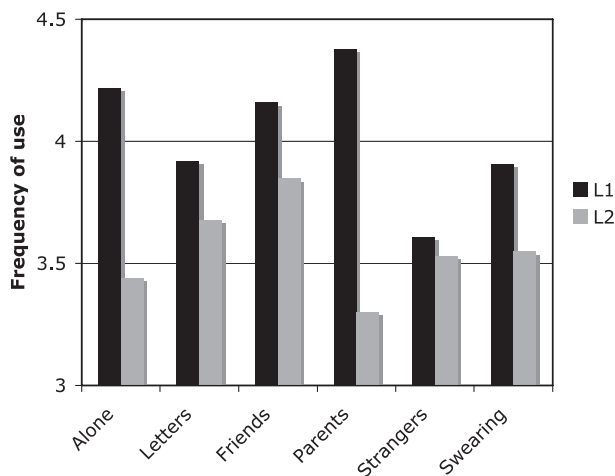


Figure 2. *Self-reported language choice for communicating anger and swearing in the L1 and L2*

6.3. *Language choice for speaking to one's children, praising them, and disciplining them*

A Wilcoxon signed-rank test showed that participants preferred the L1 to speak to their children in general (see Table 1). The same pattern emerged for disciplining and praising them (see Figure 3).

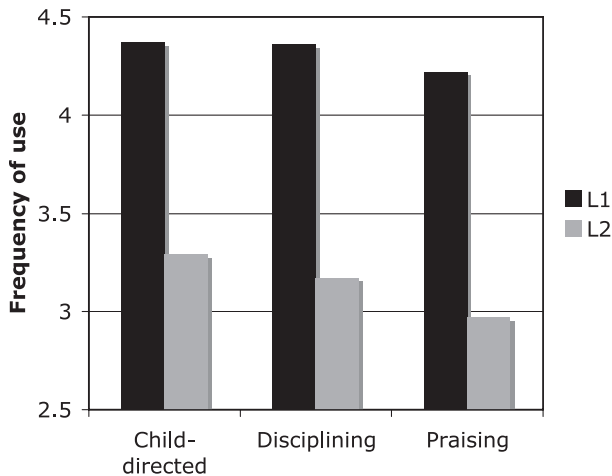


Figure 3. *Self-reported language choice for speaking to one's children, praising, and disciplining in the L1 and L2*

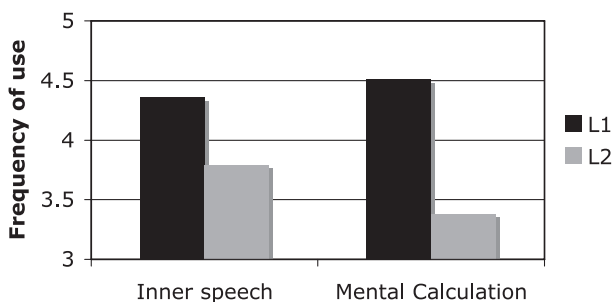


Figure 4. *Self-reported language choice for inner speech and mental calculations in the L1 and L2*

6.4. *Language choice for inner speech and mental calculations*

A Wilcoxon signed-rank test revealed that the L1 is the preferred language for inner speech and mental calculations (see Table 1, Figure 4).

6.5. *Perceptions of L1 and L2 characteristics*

A Wilcoxon signed-rank test revealed a significant difference in the perception of the overall characteristics of the L1 and L2 (see Table 1). While the L2 is

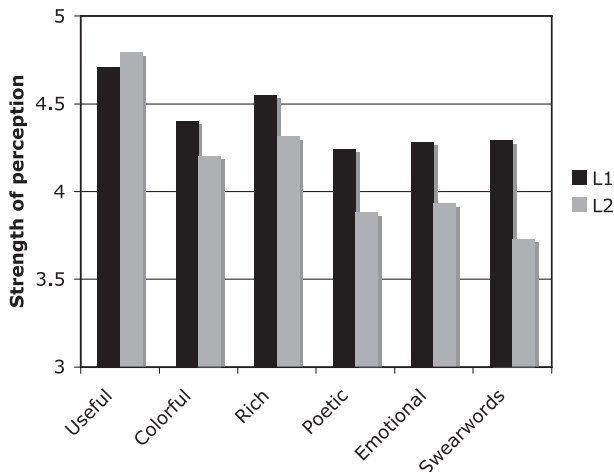


Figure 5. *Perception of characteristics of the L1 and L2*

perceived to be significantly more useful, the L1 is felt to be significantly more colorful, rich, poetic, and emotional. Moreover, the perceived emotional strength of swear words in the L1 is significantly higher than in the L2 (see Figure 5).

6.6. *Communicative anxiety in the L1 and L2*

A Wilcoxon signed-rank test revealed that participants are significantly less anxious in their L1 than in their L2 (see Table 1). This difference was significant across interlocutors and situations (see Figure 6).

To sum up, the pattern that emerges from the results indicates that even self-reported maximally proficient and frequent users of an L2 do not use their L2 to the same extent as their L1, and do not perceive the L2 in the same way as the L1. This difference was significant for communicating feelings, and more specifically for communicating anger with different interlocutors and in writing (with the exception of communicating anger to strangers). The difference was also significant for addressing one's children, performing mental calculations, and using inner speech, where the L1 was clearly favored.

The difference in frequency of use could be linked to a difference in perception of the characteristics of both languages. While the L1 was perceived as less useful than the L2, the L1 scored significantly higher on all the phatic dimensions. In order to explore specific individual linguistic behaviors with the

Table 1. *Differences between frequency of use and perception of L1 and L2 (Wilcoxon signed-rank test)*

Category	Item	N	Z	p
Communicating feelings	Alone	349	-9.713	***
	Letters	349	-6.430	***
	Friends	355	-6.671	***
	Parents	346	-9.653	***
Communicating anger	Alone	365	-9.329	***
	Letters	354	-3.332	**
	Friends	366	-5.659	***
	Parents	351	-9.871	***
	Strangers	350	-1.031	
	Swearing	359	-4.976	***
Child-directed	Speech	170	-6.880	***
	Disciplining	120	-6.258	***
	Praising	154	-6.525	***
Silent	Inner speech	369	-8.541	***
	Calculation	368	-11.472	***
Perception	Useful	379	-2.276	*
	Colorful	369	-4.009	***
	Rich	373	-4.692	***
	Poetic	374	-5.194	***
	Emotional	373	-4.856	***
	Swearwords	359	-8.088	***
Communicative anxiety	Friends	369	-4.041	***
	Colleagues	353	-5.059	***
	Strangers	363	-5.114	***
	Phone	367	-7.005	***
	Public	356	-8.047	***

* $p < .05$, ** $p < .001$, *** $p < .0001$

hope of uncovering a possible explanation for the patterns that emerged in the quantitative analyses, we will now turn to the interview data.

6.7. Interview data

The interviewer (B) posed questions about why perceptions of different languages varied and how specific language choices were made according to topic, situation, interlocutor, and communicative intention. The responses of the 20 bi- and multilingual adult participants yielded rich narrative material. We have selected excerpts from six participants to present a balanced overview of the opinions and experiences expressed in the interviews. Some confirm the patterns uncovered in the quantitative analysis (greater resonance of the L1),

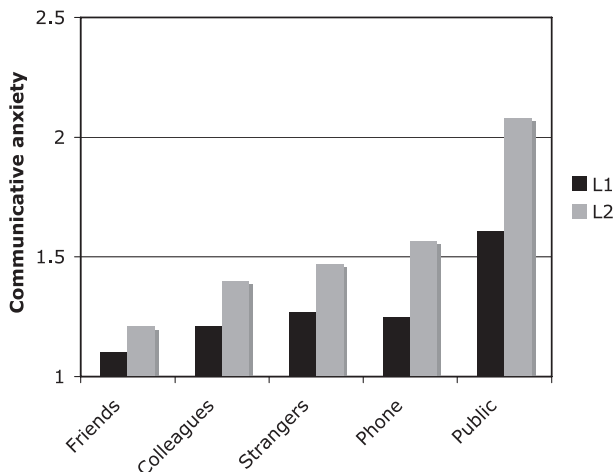


Figure 6. *Communicative anxiety in the L1 and L2*

while others present the opposite view (preference of the L2, or even the L3 or L4). Some show the limitations of a precise question (for example, L1 or L2?), since the linguistic practices of these multilingual and often multicultural participants cannot be separated easily into discrete units. This explains the regular hesitations, contradictions, and ambiguities in their answers.

The first participant presents a relatively clear-cut illustration of the patterns uncovered in the quantitative analyses. Andrew (whose L1 is English, L2 is French, and L3 is Spanish) is a lecturer in French and feels dominant in both English and French. Yet he indicated on the questionnaire that his English L1 is more emotional than his French L2:

- B Right . . . the next questions were about which languages were more emotional and you put English as being much more emotional than French?
- A Uhm.
- B When you're expressing you deepest feelings you would definitely go for English you think?
- A Yes, I think so, I mean for example I'm trying to think when I, for example I had a French girlfriend I would often yeah, when it came to it I would have to, even though she spoke, she was also fluent in both languages but I think ultimately when I say something really really important I usually would say it in English.
- B Ok, if you were to say 'I love you'?
- A Ah, I love you, yeah, I love, I told her I loved her, ehm . . . yeah, I love [whispering] je t'aime, I love you, je, that's really interesting sorry I'm just . . .

B [laughs]

A I love you, I would say in English always I think.

B Even to a French woman?

A Yeah, I mean, that's really personal because I've only said, that's a sentence that I only said to one person in my entire life I think.

A number of participants mentioned the various constraints weighing on the language choice for expressing anger. Tomomi has Japanese as an L1, English as an L2, Italian as an L3, and Spanish as an L4. She is married to an Italian, is dominant in Japanese, and has been living in the United Kingdom for 4 years. She, for example, presents an excellent illustration of the underlying complexity of choosing a language for expressing anger:

B When you are angry, which language do you use to express your anger?

T To who?

B Ah well, suppose you're alone, like you bump into . . .

T I'm by myself?

B Yeah.

T Ah, I think, in Japanese.

B Ah-ah. And if you're writing to friends, like bilingual friends, and you're angry, do you prefer to use English or it, or Japanese, or Italian?

T I think um . . . I think Japanese or English, but no Italian.

B Ok. So um, why do you prefer English or Japanese?

T Because it's comfortable for me, first, and I can express more what I feel, like you know Italian I can, but it's not like English or Japanese.

B Ah-ah. But you have no problems expressing your anger in English?

T English yeah, I think. But maybe if I want to you know, if I wanna express more deep then it's better in Japanese, but I feel like Japanese language is not really straight, so if if I wanna show really anger to somebody it's much better in English actually.

B I see. Ok, so if you're really really angry you may prefer English because it's more direct?

T Yeah.

B I see. And . . . so, so, do you swear?

T I don't.

B No, never, in any language?

T No, in Japanese we don't really have swear word, and English swear word I don't like it, especially you know with the kids, they can get so easily, so I don't have this habit to use swear word so I don't. (. . .)

B And if you hear swear words, do they feel stronger in Japanese or in English or in Italian? (. . .)

T If I, if I hear somebody swear me?

B Yeah.

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- T Then what I feel inside or what I would say?
 B No, what you feel inside, is it?
 T Oh inside, I'm gonna say myself maybe in Japanese.
 B So if somebody swears at you in Japanese, that feels worse, stronger?
 T Ah no no no no! Sorry I didn't, I think English, maybe [laughs].
 B Oh, English?
 T Yeah yeah.
 B Why?
 T Because um, for me English swear words sound really bad [laughs].

Layla (who has Arabic as an L1 and English as an L2) also mentions the social and cultural constraints weighing on the display of emotion in her different languages and cultures. She feels dominant in both languages and has lived in English-speaking countries for five years. She is acutely aware of the conceptual differences in emotional scripts in both cultures:

- L The problem with emotions in different languages is that basically it's related to culture, because in Arabic for example you can't really express your emotions that freely, but in English you can, so the problem is not about finding the proper word in English, words in English, it's about can I or can I not express that emotion, because in English it's, you have these, they are free thinkers, and they can say whatever come up to up into their mouth, they say whatever they want, but in Arabic there are some taboos regarding you know expressing emotions. (. . .)
- B Explain a bit more.
- L You know the emotions in the Arab world is a kind of a collective emotions, you have to express it for the society, you have to be, the priority is the society, the community, is your family, so when you want to express that emotion it has to be love to your family, love to your country, but never to yourself, never to a foreigner or someone outsider I would say. (. . .) Sometimes I feel strange when I express my emotions my personal emotions towards somebody, sometimes it's like I start laughing really. It's not because I'm underestimating people or let's say that I don't really care, just I got used to it.
- L Here I'm completely free to do whatever I want to do, and to express myself the way I want, and that's why I feel it's really fun, it's absolutely fun because it's a huge change.

Asked by the interviewer whether she swears, and in what language, Layla first denies swearing, then she specifies that she would not swear in Arabic but that she may use mild English swear words:

- B Do you swear?
 L Um, no

- B No, you don't?
- L Well, actually um it depends on, on the people 'cos I raised up in a way that I'm not I was not allowed to swear and I feel that it's not really nice.
- B But people here do it.
- L (. . .) I never swear in Arabic, never never at all, because I know exactly what it means, because it's my language anyway, and how offensive it would be to swear, but in English because it's not my native language, sometimes I use some swear words, but I don't really aware I'm not really aware of how immense those words are. One of the words that sometimes I use is 'bloody', 'bloody rude' you know, this is the only swear word I use.

Michelle (for whom Taiwanese is the L1, Mandarin the L2, and English the L3) has lived in the United Kingdom for 17 years, is married to an English speaker, and feels very fluent in English. She reports that her inner speech is in English as well as in Mandarin depending on the linguistic identity of the people she's thinking about. The years that she has spent in London have affected her language choice for emotional topics. She was the only participant with a child living at home with her, and thus provided interesting insights in the expression of affection between parent and child:

- M Most of the time I do talk to myself in English, but recently because I have more opportunity to speak to people in Chinese, and then, it's very strange because when I talk to myself, to myself I'm speaking Mandarin because I think about my friends, you know, does that make sense?
- B [laughs] Yes, so basically it's nothing to do with how you feel about the language, it's just a matter of who you're talking about?
- M Yes, because I still think about that (. . .) but I know what you mean, sometimes if it was just something, I told to myself, you know, but then because that matter's always related to the something somebody I was involved with, say for instance something happened today, I feel like 'how annoying!' usually I think about it in English because but that is only because most of the time I'm involved with the English speakers.
- B I see. So you don't feel that Chinese is more appropriate when you feel very emotional?
- M No, I mean nowadays because I've been, maybe because I've been here so long and I do I do I do think a lot in English, and I don't use the Chinese as much yeah, but I think that's more like a habit, because it's so frequent I'm using it, so my Chinese is still better (. . .).
- B Yeah, and, you only speak English with your child?
- M Yes, at the moment yes.
- B You tried to teach some Chinese to him?
- M I do I do (. . .).

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- B So you chose Mandarin not Taiwanese?
 M I taught him Mandarin yes, but I used 'grandma' 'granddad' in Taiwanese with him, because that's how I want him to call my mum and dad.
 B I see, so you're teaching both languages to him.
 M Only Chinese.
 B Ah only Chinese?
 M Chinese Taiwanese yes.
 B Ah ah, and I mean, how do you decide which topics to talk about in Chinese and which topics to talk about in English with him?
 M All right, I, well at the moment his Mandarin is very limited, so basically I teach him very very practical things like, because all my think, all thought is I want him to be able, to make it slightly easier if he goes to Taiwan or China, so I teach him simple things like what he want to eat, or greeting, or asking people what's your name, so he can meet friends or if he wants to eat he's hungry he can he can survive, but other things we still we basically use English all the time, and if we're talking something very emotion, deep emotion, he will talk to me English of course, that's how he can how he can express, although we do say 'I love you' 'wo ai ni' to each other, you know.
 B Oh, you do say that, which is unusual between mother and child in China?
 M Yeah, well, I think, I kind of translated directly from English to sort of kind to make it easier.
 B I see.
 M Even he wants to say 'I love you very much' I give him very very incorrect sentence 'wo ai ni hen duo hen duo', which is not correct.
 B No.
 M But we enjoy doing that, I don't really care about the grammar, so we do that to each other because actually that was the first thing I taught him.

Another participant, Klaus (whose L1 is German, L2 is English, L3 is French, L4 is Russian, and L5 is Spanish) has lived in the United Kingdom for nearly 20 years and is highly fluent in English. He is married to a native speaker of Catalan and Spanish, with whom he communicates in English. As a result, he feels that English is his favorite language to express emotions in:

- K Eh well, English is easier.
 B I see. So it is your language of emotions you think?
 K Yeah yeah.
 B That's interesting. Was it always like this or did it happen?
 K No, not at all. It's changed. Initially it wasn't like that at all, but gradually it's changed because I use it a lot at the moment, I don't have many German friends I interact with, I used to work with German people every day, then it was different and you would talk in German, and now I don't have

many German colleagues, well not on a daily basis, I know some Germans, I don't talk on a daily basis with Germans.

B So you think the reason why English is your language of emotions is because you interact in English all the time.

K Yes.

B And does it change because you are having a relationship with a person who speaks English with you?

K Yeah, that's certainly one reason. When I had a German girlfriend of course we spoke in German.

Klaus does report that he still counts in German:

K One should say, when I count, I very very often count in German, even if it is at work, if I add some numbers I use German, everything else is English in my office, and I count in German.

Finally, Jean (whose L1 is French, L2 is English, and L3 is Greek) arrived in the United Kingdom from France a year earlier and has a Greek girlfriend whom he met in Greece, where he lived for a while. He declares that English has no emotional resonance at all for him:

J English is very good for physics, it's much better than French, but I don't have any feeling, any emotion, in general because my life here, I'm here, I'm happy to be here, but I'm here just for physics. I needed three years to like to love my life here in England. It was difficult at the beginning, whereas in Greece I had a fantastic life and I had very, very strong emotions in general, and I feel Greek language deeper than English, because I have much more emotions related to Greek, whereas I have nothing related to English, really nothing. I don't don't feel, I speak English as as a computer would do. I don't associate anything to it.

B Right, you've been here for quite a while; do you think this will change?

J It might change a bit 'cos, I think it's, it might yeah.

B Ok, so.

J It might but just, just because of time. I will not make, up to now I haven't made any real efforts to change it.

The image that arises from these interviews is complex and multilayered. It shows subtle and dynamic differences between the L1 and the L2 (or L3). Many participants share the perception that the L1 is the ideal channel for communicating emotions. Yet some participants who are strongly socialized in an L2, and who typically also have less contact with the L1, feel that the L2 or L3 has become their more emotional language. A language, it seems, gains emotionality through social and romantic experiences.

The language used with the partner has a special status. The length of the relationship obviously plays a role, too. Andrew felt his L1, English, was the

more emotional language even though his partner spoke French. Klaus is married to a native Catalan speaker, but uses his L2, English, with her. As a result, the L2 has become their language for both non-emotional and emotional communication. Jean fell in love with a country, a woman, and a language (Greek, his L3). As he uses Greek with his partner, that language has acquired more emotionality than his L1, French, or L2, English. He acknowledges that English may acquire more emotional resonance since he now lives in the United Kingdom, but he does not seem prepared to seek it actively.

What Andrew, Klaus, and Jean have in common is that they have moved between countries within Europe, and were thus never exposed to the massive culture shock that the Asian and Arabic participants experienced. Tomomi, Michelle, and Layla do not simply observe how difficult it might be to translate an emotion from one language to another. They actually have to think at a higher level, specifically whether a particular emotion can be expressed at all within a particular cultural context. As Layla noted, expressing an emotion in English or Arabic is not a vocabulary problem but rather one of cultural appropriateness: “Can I or can I not express that emotion?”

The linguistic practices of these three participants reflect their cultural amalgamation. Tomomi reports that anger in her L1, Japanese, goes deeper but that since it “is not straight” she prefers the more direct expression of anger in English. In other words, emotional resonance does not necessarily coincide with linguistic practice. Tomomi also respects the Japanese cultural value that educated people do not swear, and then declares that swear words feel strong in Japanese, but also in English. Her stay in the United Kingdom has exposed her to some “really bad” English swear words. She might not have been exposed to as many profanities in Japan. Michelle presents another excellent example of the dynamic character of emotion and linguistic practices through her conscious deviation from Chinese cultural norms when interacting with her child. Though she uses mostly English with her child, she did teach him “survival Mandarin” and insisted that the child should use Taiwanese kinship terms with her parents. She uses a Mandarin calque of the English phrase ‘I love you’, namely ‘wo ai ni’, which she feels is “very very incorrect” but which they enjoy using. In other words, she is happy with her unique English-Chinese cultural and linguistic blend.

7. Discussion

The research hypotheses from this study were confirmed in the quantitative analysis. The 386 bi- and multilingual adults who feel equally proficient in their L1 and L2, and who use both languages constantly, prefer the L1 significantly more for communicating feelings in general, and anger in particular, as

well as swearing. They also use the L1 more frequently to talk to their children, to discipline them, and to praise them. The L1 was preferred for performing mental calculations and for inner speech.

The participants' perceptions of L1 and L2 characteristics were equally different. Although they felt that the L2 was more useful, they felt that the L1 was more colorful, rich, and emotional. The difference was even stronger in the perception of the emotional strength of swear words, with L1 swear words reported to have a much stronger emotional resonance than L2 swear words. Communicative anxiety was found to be higher in the L2.

These findings confirm earlier studies from the larger corpus collected through the BEQ. The L1 is generally perceived to be the most emotional of bi- or multilinguals' languages (Dewaele 2004b, 2007a, 2010; Pavlenko 2002, 2005). It is also the preferred language for expressing feelings or anger, for swearing, and also for performing cognitive operations like mental calculations (Dewaele 2004a, 2007a). Not surprisingly, participants suffered less from communicative anxiety in situations in their L1 than in a language acquired later in life (Dewaele 2007c; Dewaele et al. 2008). In all these studies, self-perceived proficiency and the frequency of using the L2, L3, and L4 were strongly correlated with the dependent variables.

This study has shown that the effect persists even when self-perceived proficiency and the frequency of using the L2 are held constant at the highest possible level. Likely causes for the persistent difference between the L1 and L2 might thus be linked to how and when the L2 was learned, as well as to the socialization in the L2 compared to that in the L1.

An analysis of the extracts from six interviews of 20 bi- and multilingual adults living in the United Kingdom added nuance to the quantitative analysis. While participants acknowledged the superior emotionality of the L1 at some point in their life, for some the L2 or L3 has become more emotional after romantic encounters or long stays in the L2 environment with strong L2 socialization. This confirms Pavlenko's (2005) observations that "in the process of L2 socialisation through romantic and family relationships, L2 words may become as emotionally meaningful and resonant as those of the L1, and elicit a similar or even higher emotional response" (2005: 214). The findings also give support to Grosjean's (2008) Complementarity Principle, namely that bilinguals may be more proficient in a certain language in certain domains.

While it was true for some participants that a lack of fluency and a more restricted vocabulary in one language was the main reason to prefer another for talking about emotion, this was not true for all participants. Indeed, for some participants the choice of a particular language simply allowed them to express themselves more freely. This became apparent among the non-European participants. The European participants were more concerned about how to verbalize their emotions in different languages, and how to establish the emotional

resonance of their languages. The Asian and Arabic participants, however, found the major issue to be whether or not to display any specific emotion. All were perfectly able to use emotion words in their L1 or L2, but many avoided doing so in their L2 if it was not customary to do so in their L1. Still, strong socialization in the L2 helped them overcome this obstacle, to the point that some started to use calques of L2 emotional phrases in their L1. They were aware that this was highly unusual in the L1, but it suited their multilingual and multicultural identity.

Some participants for whom swearing in the L1 was severely constrained reported that they used mild English swear words and that they were aware of the emotional strength of these words through their daily contact with English (see also Jay and Janschewitz 2008). Most reported that the L1 has a stronger emotional resonance than the L2, which could be linked to the “emotional context of learning” (Harris et al. 2006). But those who had spent a considerable amount of time in the United Kingdom or abroad reported fewer differences in the use and perception of their L1 and L2. Some participants expressed a clear preference for their L2, typically when that was the language used with a partner or family members.

The significant differences in the quantitative analysis between the frequency of using each language and the perceptions of both languages may have led to a premature conclusion. It would be easy to conclude prematurely that a very high level of L2 proficiency and use could not alter the preference for the L1 in communicating emotions, interacting with one’s children, using inner speech, and performing mental calculations, nor could it alter the perception of characteristics of both languages. However, the narrative data helped us to “dismantle the myth of a simple, tangible, easily described relationship between languages and emotions of bi- and multilingual speakers, and to show that this relationship plays out differently for different individuals, and even in the distinct language areas of a single speaker” (Pavlenko 2005: 227).

The image that arose from the interviews was one of slow shifts in linguistic practices linked to the perception and adoption of different cultural values. For many participants, this multilingualism — and, to a certain extent, multiculturalism — provided them with a sense of empowerment, freedom, and cherished uniqueness.

8. Conclusion

The quantitative analysis of 389 bi- and multilingual adults who are maximally proficient in their L1 and L2 revealed systematic differences in the use and perception of their languages. Although they reported using both languages daily, they used their L2 less frequently for expressing their deepest feelings or

their anger. They also preferred their L1 for speaking to their children, for voicing inner thoughts, and for performing mental calculations. They systematically rated the phatic dimensions of the L1 higher than the L2. Finally, they reported significantly higher levels of communicative anxiety in their L2 across a range of situations.

The qualitative analysis of 20 bi- and multilingual adults based in United Kingdom showed that at an individual level, the differences between the L1 and L2 are often very subtle and context-specific. Participants confirmed that the L1 is usually felt to be more powerful than the L2, but this finding did not automatically translate into a preference for the L1. Participants used their languages strategically to overcome the constraints weighing on the L1 for certain speech acts. A closer look at the participants' linguistic history suggested that higher levels of socialization in the L2 culture help change the perception of the L2 and encourage linguistic practices to evolve. Choosing the L2 allowed some Asian and Arab participants to overcome the sociocultural constraints surrounding displays of emotion and swearing in their L1.

To conclude, the findings from the quantitative and qualitative data confirmed findings from previous studies and highlighted some interesting new facts, namely that perfect ambilingualism is likely impossible. Even those who feel perfectly ambilingual have specific language preferences when discussing certain topics with certain interlocutors, and their perceptions of the two languages differ.

Dewaele and Pavlenko stated that: "Metaphorically one could compare the languages in contact in the individual's mind to two liquid colours that blend unevenly, i.e. some areas will take on the new colour resulting from the mixing, but other areas will retain the original colour, while yet others may look like the new colour, but a closer look may reveal a slightly different hue according to the viewer's angle" (2003: 137). One could add to this metaphor that the colors never completely dry and keep changing diachronically and synchronically. Moreover, the hue of the base color, the L1, is likely to shine through in some emotional situations.

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