


Emotionality Differences Between a Native and Foreign Language: Implications for Everyday Life

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Abstract

A growing literature examines how affective processing may be weaker in a foreign language than in a native language. This article reviews mechanisms that could underlie this effect and then delves into practical implications. The most common category of explanations is that emotional resonances in the discourse context accrue to utterances because human memory is inherently associative. One application concerns forensic investigations. Compared to emotional phrases in a native language, emotional phrases heard or read in a foreign language elicit weaker skin-conductance responses (SCRs). In one study involving a mock crime, SCRs elicited by a foreign language were high and insensitive to emotionality, suggesting a stress response. A second application is decision making, given recent findings that judgments in a foreign language are influenced by emotional content. This raises the question of how to assess the real-world importance of this provocative laboratory finding. A third application is the emotional and logical appeal of advertising slogans. In multilingual regions, marketers could direct appeals to consumers in their native language to sell luxury items. In contrast, ads using a less proficient or foreign language may be most effective for selling items that will increase work productivity.

Keywords

bilingualism, emotion, decision making, forensic linguistics, advertising

“If you talk to a man in a language he understands, that goes to his head. If you talk to him in his language, that goes to his heart.” This quote from Nelson Mandela concerns negotiating and the importance of foreign-language learning, but it is also about how hearing or using our native language may influence us emotionally more than would hearing or using a foreign language. Applied linguists began exploring this topic in the late 1990s by integrating self-report data with the growing experimental literature, resulting in several book-length treatments (Dewaele, 2010; Pavlenko, 2005). In the last decade, this topic has provided fertile ground for psychologists seeking a new perspective on the relationship between cognition and emotion, such as in the areas of decision making and moral reasoning (Costa, Foucart, Arnon, Aparici, & Apesteguia, 2014; Costa, Foucart, Hayakawa, et al., 2014; Keysar, Hayakawa, & An, 2012).

What are the implications for our everyday lives of different emotional resonances in a native (L1) versus foreign language (L2)? As background for this question, I first highlight findings from the diverse empirical

literature and then list mechanisms that have been proposed to underlie L1-L2 emotionality differences.

Empirical Findings

Using an online questionnaire advertised on language-learning websites and linguistics listservs, Dewaele (2010) asked bilinguals and multilinguals, mostly from Europe, about when, why, and how well they had learned their various languages. Statistical power from his sample of 1,500 respondents allowed common trends to be extracted, averaging over individual variation in country of origin, travel, number of languages spoken at home, sociopolitical climate, and educational practices. Age of acquisition had a pervasive and continuous influence on learning, attitudes, emotional experience, and frequency of use. This is

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consistent with how age of acquisition influences cognitive entrenchment of the L1 and with how myriad factors correlated with age facilitate continued L1 use following immigration (Caldwell-Harris, Staroselsky, Smashnaya, & Vasilyeva, 2012; Jia & Aaronson, 2003).

Languages that were learned naturalistically, via social interactions, were judged to feel more emotional and were preferred for expressing emotional language. Swearwords and expressions of love were perceived as more emotional when respondents had frequent opportunities to use them in social interaction. Dewaele (2010) noted that the fact of learning naturalistically versus through classroom instruction “resonated for years after the end of the active learning phase” (p. 119). This likely occurred because context of acquisition “roughly equates with the type and intensity of exposure of an LX [i.e., a language other than one’s native language] and the opportunity to use it in authentic interactions” (Dewaele, 2010, p. 119). A sizable minority of Dewaele’s respondents did claim that their later-learned language came to feel emotional with extensive use in an immersion context (as also found in other interview studies; e.g., Caldwell-Harris et al., 2012).

A multitude of laboratory tasks have been employed to identify and quantify emotionality differences between bilinguals’ languages. The most common hypothesis tested has been that emotional processing is enhanced in a first, more proficient language and reduced in a later-learned, less proficient language (Pavlenko, 2012). Consistent with this, bilinguals studied by Bond and Lai (1986) spoke longer about emotional topics in their second language because of reduced embarrassment. Emotion words are usually remembered better than neutral words, but this emotion-memory effect is less typical for L2 words, consistent with there being greater emotional resonances for L1 words (Anooshian & Hertel, 1994). Rasanen and Pine (2012) found emotion-memory effects for negative words in both L1 Finnish and L2 English, but not L3 French, consistent with reported proficiency and usage patterns.

Emotional-word processing has been recently studied with reaction-time tasks. In rapid sequential visual processing, native English speakers showed a large attentional blink following a taboo distractor, the expected finding (Colbeck & Bowers, 2012). The attentional blink for Chinese speakers, for whom English was a foreign language, was reduced in size, consistent with their being able to more easily ignore a taboo distractor in a foreign language. Electrodermal monitoring revealed that some emotional phrases (specifically, childhood reprimands) elicited larger skin-conductance responses (SCRs) when presented auditorily in the native language, compared to L2 translation equivalents. This has been found for immigrants to the United States who arrived in their teen years or later and for whom L1 was Turkish (Harris, Ayçiçeği, &

Gleason, 2003) or Spanish (Harris, Gleason, & Ayçiçeği, 2006). However, SCRs were similar in L1 and L2 for American young adults who had acquired both Spanish and English in childhood (Harris et al., 2006).

Many laboratory studies have failed to find emotionality differences between L1 and L2. Ferré, García, Fraga, Sanchez-Casas, and Molero (2010) found that emotion-memory effects did not vary as a function of L1/L2 status. Ayse Ayçiçeği-Dinn and I (2009) found superior recall for some L2 phrases, which we explained as a novelty effect. Conrad, Recio, and Jacobs (2011) measured event-related potentials elicited by words that were translation equivalents in Spanish and German. Similar waveforms occurred regardless of the L1-versus-L2 status of the words. An emotional Stroop task elicited similar interference for L1 and L2 (Eilola & Havelka, 2011), suggesting that words’ emotional associations were equally available in the two languages. However, SCRs elicited during these Stroop tasks were larger for L1 taboo words than for L2 taboo words, indicating that physiological and behavioral measures may be at odds with each other.

Emotionality differences between multilinguals’ languages appear to be most reliable when L1 is the dominant language and L2 (or LX) is a later-learned and less proficient language (Caldwell-Harris et al., 2012; Dewaele, 2010; Harris et al., 2006). Resolving inconsistent findings may require simultaneously taking into account age of acquisition and proficiency.

Another hypothesis attempting to resolve conflicting findings is that negative emotions are enhanced in a native language and positive emotions are enhanced (or more accessible) in a foreign language. Sheikh and Titone (2015) reasoned that, in a later-learned language, negative words do not have extensive opportunities for emotional grounding because adult social interactions have a positivity bias. Therefore, emotional distance in a foreign language may be restricted to negative words. On this account, L2 positive emotion words will resemble L1 positive emotion words and thus will be processed more quickly than neutral words; however, L2 negative words lack grounding because of the lack of their use in the appropriate emotional contexts and will be read no more quickly than neutral words. Sheikh and Titone (2015) confirmed these hypotheses using eye tracking methodology.

Causes of Emotionality Effects

Proposed causes of emotionality differences include proficiency (Eilola & Havelka, 2011), frequency of use (Degner, Doycheva, & Wentura, 2011; Puntoni, De Langhe, & Van Osselaer, 2009; Simcox, Pilotti, Mahamane, & Romero, 2012), the automaticity of lexical access (Segalowitz, Trofimovich, Gatbonton, & Sokolovskaya, 2008), and the emotional contexts of learning and use (Altarriba, 2008; Harris et al., 2006). I have argued that

the mechanism underlying these proposed causes is the associative nature of human memory (Harris et al., 2006). Frequently co-occurring stimuli may come to be represented by the same neural patterns, especially when conditions suggest they are causally linked (Zwaan, 2008). When a language has been learned to high proficiency, or when it has been frequently used, it has usually been extensively experienced in the types of social contexts where words and phrases can become emotionally grounded. Indeed, autobiographical memories appear to be coded in a specific language; use of that language can then facilitate the retrieval of past experiences, including memories of language use (Marian & Neisser, 2000).

My preference is not to emphasize proficiency or frequency as root causes, but to propose that words and phrases accrue emotional resonances when they have been learned and used in emotional contexts (Harris et al., 2006). This helps explain why two bilinguals could use the same language with similar levels of proficiency and frequency but experience different levels of emotionality. This could occur when one person uses the second language primarily at work or school and the other uses it at home with a spouse and children (as discussed by bilinguals during interviews; e.g., Dewaele, 2010; Piller, 2002).

Implications for Our Daily Lives

Emotionality differences between a native and foreign language matter for our daily lives when the emotional resonances of language help us learn, make choices, and understand others. In psychotherapy, bilinguals can code-switch into their less proficient language to obtain emotional distance on a topic (Altarriba & Santiago-Rivera, 1994; Dewaele & Costa, 2013; Schrauf, 2000). In multilingual societies such as are found in Europe and increasingly in North America, spouses and romantic partners may not share a first language. Sharing a first language facilitates intimacy and emotional connection; a lack of these may lead to frustration and miscommunication (Piller, 2002). Because language used in psychotherapy and intimate language used by couples have been discussed elsewhere, I focus on implications in three relatively new areas: forensic interviews, decision making, and advertising.

Forensic investigations involving bilingual suspects

Polygraph tests continue to be used in the United States despite warnings from scientists that they are unreliable (National Academy of Sciences, 2002). Skin conductance, a key component of polygraph tests, revealed different patterns in two studies when participants lied in their native versus their foreign language. Colleagues and I

administered a mock crime task to Spanish-English bilinguals (Caldwell-Harris, Sanchez, & Nayak, 2014). Two groups were studied: heritage language learners who were English dominant or equally proficient in Spanish and English, and immigrants from Latin America who were Spanish dominant. Participants who were randomly assigned to speak in L1 Spanish showed a lie effect: SCRs were larger when they told the truth than when they lied. However, only the heritage language learners showed a lie effect in English, consistent with their high proficiency in English. For the immigrants, SCRs elicited in English did not differ between lies and truth and were variable and high, suggesting a stress/effort or anxiety response.

Ayşe Ayçiçeği-Dinn and I asked Turks residing in Istanbul to read aloud true-or-false statements in L1 Turkish or L2 English (Caldwell-Harris & Ayçiçeği-Dinn, 2009). No lie effect was observed in either language, but SCRs elicited by Turkish true-or-false statements were larger for morally deep statements (about, e.g., belief in God) than for trivial statements (about, e.g., a favorite beverage). In contrast, L2-English SCRs did not vary according to moral depth of the statements. SCRs for L2 English were high and variable, as could have been caused by anxiety about producing and monitoring foreign-language speech.

Polygraphs should not be administered in a non-native language if SCRs are high, variable, and insensitive to emotional aspects of language content. Interpreters should be present during interrogations, and police should be trained to be sensitive to varying English proficiency. Analyses of police-interrogation videos suggests that non-native ability makes witnesses vulnerable during interrogations (Berk-Seligson, 2009; Pavlenko, 2008).

A second area in which emotionality intersects with the broad category of forensic psychology concerns the detection of deceptive language. If emotionality is reduced for lying in a foreign language, then such detection may be less accurate, or the additional cognitive control when lying may alter facial expression and increase signs of stress. At present, results have varied according to which lie-detection paradigm has been employed (for a review, see Caldwell-Harris & Ayçiçeği-Dinn, 2009). In a recent study, participants showed a truth bias when detecting lies in native-language speakers but a lie bias when viewing second-language speakers (Da Silva & Leach, 2013). Importantly, police officers showed the same biases as undergraduates.

Decision making in a foreign language

Traditionally, decision making has been understood as a reflective and cognitive process. Over the past 20 years, new ideas about decision making have emerged from

psychology laboratories and entered the popular debate. According to Damasio's (1994) *somatic marker hypothesis*, people can make quick, efficient decisions by paying attention to automatically activated bodily signals. If foreign languages do not easily activate "gut feelings," would people reading a dilemma in a foreign language be more deliberative, thus minimizing emotion during reasoning?

This question has been approached using framing effects. When a decision is verbally framed as involving a gain, people prefer a sure outcome over a probabilistic outcome. When the same situation is described in terms of losses, people prefer to gamble. Keysar et al. (2012) randomly assigned bilingual speakers from an assortment of countries to read and respond to decision-making scenarios using either their native or their foreign language. Data from three geographical regions were consistent: The standard framing effects were found for the native language and were absent for the foreign language. This is an impressive finding, since the stress of using a less proficient language could have diminished the cognitive resources needed for deliberative reasoning, thus pushing people to make gut, instinctive, or emotional responses. Note that framing effects are reduced or eliminated when problems are depicted using graphical aids, confirming the role of language (Garcia-Retamero & Cokely, 2013).

Similar findings were obtained using a loss-aversion paradigm. Bilinguals made the mathematically optimal decision of accepting bets when the experiment was conducted in their foreign language. They more often resisted betting (not the mathematically optimal decision) when the experiment used their native language. Costa, Foucart, Arnon, and colleagues (2014) extended these results by varying different aspects of the dilemmas. Dilemmas with an emotional component were the ones most likely to yield different effects when bilinguals used their first and most proficient language versus their second language.

An implication of this research is that whenever decision making has an emotional component, choices may be more influenced by analytical reasoning when a foreign language is used. Indeed, a recent study with diverse L1-L2 pairings showed increased utilitarian reasoning when trolley dilemmas were evaluated in a foreign language (Costa, Foucart, Hayakawa, et al., 2014). Whether these laboratory findings can be replicated in a field setting is a key question for future research.

The emotional and logical appeal of advertising slogans

Does one's emotional reaction (and hence purchasing decision) depend on whether an advertisement is read or viewed in L1 versus L2? Puntoni et al. (2009) asked

several groups of bilinguals to rate advertising slogans for their emotional intensity (example: "Where a kid can be a kid and the magic never ends. The happiest place on Earth"). Messages expressed in L1 were perceived as more emotional than messages expressed in L2. The authors varied the L1-L2 pairings so that results could not be attributed to stereotypes of language emotionality, such as whether English is the language of business and logic.

Given that consumers may find L1 ads more emotional than L2 ads, advertisers can consider the likely L1/L2 status of their intended audience. Using L1 could be most strategic when an emotional response is desired, as when marketing a luxury product. Using L2 in an advertisement may be the preferred strategy when consumers need to be analytical, such as when evaluating a laptop computer or making a purchase that will increase work productivity. L1/L2 status may have different effects when consumers consider the health-related versus taste-associated attributes of food items. Different languages may activate brand names that were stored when a product was used in a specific language context. Indeed, Puntoni et al. (2009) noted that self-control may be more difficult when a potential purchase is framed in an L1 context. These ideas remain to be empirically investigated.

Conclusions

An important direction for future research is to investigate the ecological validity of the basic research findings described above, using archival data and field experiments. Should bilinguals preferentially use their foreign language when making decisions that could be non-optimally swayed by emotion? Do advertisements influence viewers differently when pitched in a native versus a foreign language? How often are polygraphs administered in a non-native language, and what conclusions are drawn from them?

The evolutionary purpose of emotions is to provide mechanisms for animals to prioritize actions. If emotions do function as relevance detectors, then it is worthwhile to continue to examine the real-world consequences of L1/L2 emotionality differences.

Recommended Reading

- Caldwell-Harris, C. L. (2014, September). Your language shapes your morality. *Scientific American Mind*, 25, 70–73. A nontechnical review of research on how moral reasoning may differ in a native and foreign language.
- Pavlenko, A. (2012). (See References). An authoritative and thorough discussion of empirical findings and theoretical implications of affective processing in bilingual speakers.
- Puntoni, S., De Langhe, B., & Van Osselaer, S. (2009). (See References). An innovative application of affective processing in multilingual speakers to the field of advertising.

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