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# Effects of Trait Emotional Intelligence and Sociobiographical Variables on Communicative Anxiety and Foreign Language Anxiety Among Adult Multilinguals: A Review and Empirical Investigation

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**Abstract.** This study considered the effects of trait emotional intelligence (trait EI; Petrides & Mavroveli, 2007) and sociobiographical variables (age, gender, education level, number of languages known, age of onset of acquisition, context of acquisition, frequency of use, socialization, network of interlocutors, self-perceived proficiency) on communicative anxiety (CA) in the first language and on foreign language anxiety (FLA) in the second, third, and fourth languages of 464 multilingual individuals, in five different situations (speaking with friends, colleagues, strangers, on the phone, and in public). Data were collected via Web-based questionnaires. Participants were divided into three groups based on their trait EI scores (low, average, high). Nonparametric statistical analyses revealed a consistent pattern of results across languages and situations. Higher levels of trait EI corresponded to significantly lower CA/FLA scores. Participants who started learning the second and third languages at a younger age also suffered less from FLA. Purely classroom-based language instruction was found to be linked to higher levels of FLA compared to instruction that also involved extracurricular use of the language. The knowledge of more languages, a higher frequency of use, a stronger socialization in a language, a larger network of interlocutors, and a higher level of self-perceived proficiency in a language were also linked to lower levels of CA/FLA.

**Keywords.** trait emotional self-efficacy, TEIQue, bilingualism and emotion, number of languages known, age of onset of acquisition, context of acquisition, frequency of use, L2 socialization, network of interlocutors, self-perceived proficiency

The issue of communicative anxiety (CA) and especially foreign language anxiety (FLA) has fascinated psychologists, applied linguists, and teachers alike. MacIntyre and Gardner (1991c) suggested that FLA is part of a more general CA (1989, p. 273), which starts as “an undifferentiated, negative affective response to some experience in language class. With repeated occurrences, anxiety becomes reliably associated with the language class and differentiated from other contexts” (MacIntyre & Gardner, 1991c, p. 297). MacIntyre and Gardner later defined FLA as “the feeling of tension and apprehension specifically associated with second language (L2) contexts, including speaking, listening, and learning” (MacIntyre & Gardner, 1994, p. 284). In other words, FLA is CA in a foreign language context. FLA has been identified as one of the major obstacles to acquisition and fluent production of foreign languages. The complex set of feelings that constitute FLA is powerfully described in Eva Hoffman’s (1989) autobiography *Lost in Translation: A Life in a New Language*. Eva was born in Krakow, Poland and emigrated with her family to Canada in 1959 at the age of 13. She deeply regretted the loss of her sophisticated and confident Polish self in her interactions with native speakers of English. Speaking English shortly after her arrival filled her with fear and rage:

It takes all my will to impose any control on the sounds that emerge from me. I have to form entire sentences before uttering them; otherwise, I too easily get lost in the middle. My speech, I sense, sounds monotonous, deliberate, heavy—an aural mask that doesn’t become or express me at all. (...) I don’t try to tell jokes too often, I don’t know the slang, I have no cool repartee. I love language too much to maul its beats, and my pride is too quick to risk the incomprehension that greets such forays. I become a very serious young person (...). I am enraged at the false persona I’m being stuffed into, as into some clumsy and overblown astronaut suit. I’m enraged at my adolescent friends because they can’t see through the guise, can’t recognize the light-footed dancer I really am (pp. 118–119).

We can only assume that Eva Hoffman did overcome her FLA in English: She obtained a PhD in the United States, became editor for *The New York Times*, published several books in English, and settled down in Hampstead, UK. Hoffman’s anecdote shows that inexperienced L2 users<sup>2</sup> (cf. Cook, 2002) can

suffer from relatively higher levels of tension associated with L2 use. The seminal articles of Horwitz (1986) and Horwitz, Horwitz, and Cope (1986) identified FLA as a conceptually distinct variable in foreign language learning that correlated only weakly with general trait anxiety. The authors focused specifically on the effects of this anxiety on language learning and its pedagogical implications. They developed the Foreign Language Classroom Anxiety Scale (FLCAS), which deals specifically with anxiety that learners experience in classroom interactions with their teachers—in other words, situation-specific language anxiety. Research on FLA has increased rapidly (cf. Horwitz, 2001) but has mostly focused on foreign language learners in high school or a university. Less attention has been paid to the effects of FLA on foreign language speech production by adult L2 users. Chandler (2006) has complained about the lack of applied linguistic research on adults: “Those beyond 25 years of age deserve further scrutiny, since no studies to date have singled out this age group” (p. 61). The focus on this age group is particularly relevant for CA/FLA: Not only do they represent the largest part of the population, they function in a multilingual environment in which they have to draw on their linguistic resources to survive economically and socially. Additionally, as adult L2 users, they have, on average, attained a certain equilibrium in language use, language attitudes, and affective factors, hence our aim to identify the sources of individual differences in self-reported levels of CA/FLA among a large group of adult multilinguals. We will seek to investigate a personality construct that could partially account for why multilinguals feel anxious in communicative situations.

Explanations in the literature of the reasons why language learners and users experience tension and apprehension tend to elaborate on the surface aspects of CA/FLA, such as perfectionism (i.e., high personal performance standards), procrastination, fear of evaluation, and fear of errors (cf. Gregersen & Horwitz, 2002), rather than more deeply rooted variables, such as personality traits. The personality construct of interest in this study is trait emotional intelligence (trait EI), which concerns individual differences in emotion-related self-perceptions, such as emotion control, emotion expression, empathy, and adaptability. High trait EI individuals believe they can regulate their emotional reactions over time, manage stress, and be assertive (Petrides & Furnham, 2001). Therefore, we hypothesized that such people would be more confident in their ability to communicate effectively and less likely to experience CA/FLA in any language they speak. The effect of sociobiographical factors on CA/FLA in different languages known by a multilingual cannot be ignored. In the present study, we focus on factors relating to the multilinguals’ past language learning experience (number of languages known, age of onset of acquisition [AOA] and context of acquisition), present language situation (frequency of use of languages, socialization in a foreign language, network of interlocutors), and, finally, a holistic judgment of proficiency in speaking.

### **Communicative Anxiety and FLA**

Many studies on CA/FLA have examined it as “a stable personality trait, among experienced language learners” (MacIntyre & Gardner, 1991c, p. 297). The choice of the term “trait” rather than “state” suggests that the authors see CA/FLA as a stable disposition to becoming anxious when using language in a particular situation. States, on the other hand, are more transient in nature and would only occur when certain contextual conditions were met. Dewaele (2002a) noted that the apparent stability of CA/FLA could be related to the fact that the studies in question considered only individuals with a single foreign language (Horwitz, 1986; MacIntyre & Charos, 1996; Onwuegbuzie, Bailey, & Daley, 1999). Only recently has the construct of FLA been tested on samples of participants learning two foreign languages simultaneously (Rodriguez & Abreu, 2003). The second part of MacIntyre and Gardner’s definition seems to suggest that CA/FLA is specific to *experienced* learners only. However, this seems to imply that beginners do not experience CA/FLA or that they experience a state-like CA/FLA, which gradually becomes a trait. As Dörnyei (2005) pointed out, when talking about anxiety, “it is surprising how ambiguous the conceptualisation of the concept becomes when we go beyond the surface” (p. 198). Therefore, it seems necessary to go briefly back to the sources of the concept.

In their exploratory study of the relations between language anxiety and other anxieties in English as a first language (L1) and French as an L2, MacIntyre and Gardner (1989) subjected their different anxiety scales to a principal components analysis, which yielded two orthogonal factors accounting for 48% of the total variance (p. 261). These factors were labeled “General Anxiety” and “Communicative Anxiety,” respectively. The former factor was defined by scales of Trait, State, and Test anxiety, whereas the latter was defined by French class anxiety, French use anxiety, English class anxiety, and Audience sensitivity. General Anxiety was found to have little effect on the dependent variables in the L2 (multiple-choice test, free vocabulary recall test in a high and low-pressure condition). However, CA/FLA did have a significant negative effect on the recall of French L2 words. Negative correlations

were observed between written proficiency scores and French class anxiety and French use anxiety. Similar results emerged for the oral proficiency measures, which were negatively correlated with French class anxiety as well as French use anxiety (MacIntyre & Gardner, p. 267). The authors concluded that CA/FLA is the direct cause of “performance deficits” (p. 270).

The foregoing results confirmed earlier findings by Horwitz (1986) and Gardner, Moorcroft, and MacIntyre (1987) on the orthogonal nature of language anxiety and trait anxiety. Similar results emerged from MacIntyre and Gardner’s (1991b) study into the factor structure underlying 23 scales, assessing both language anxiety and other forms of anxiety. French L2 tasks were judged to be more anxiety-provoking than their English L1 equivalents by students who had had an average of 8 years of teaching in French as an L2. Subjects with higher levels of language anxiety in the L2 (but not the L1) obtained significantly lower scores on a Digit Span test (a measure of short-term memory) and on a Thing Category test (vocabulary production). The authors suggested that impaired performance among more anxious students could be related to short-term memory loss and problems in long-term memory retrieval, both attributable to anxiety (p. 530).

MacIntyre (1999) reviewed the literature on FLA and concluded that a moderate negative relationship exists between language anxiety and various measures of language achievement. Further studies have confirmed this trend (Abu-Rabia, 2004; Dewaele, 2007c; Frantzen & Magnan, 2005; Matsuda & Gobel, 2004; Onwuegbuzie, Bailey, & Daley, 2002). Interestingly, FLA does not disappear among more advanced learners (Onwuegbuzie et al., 1999; Saito & Samimy, 1996). More experienced learners also seem to suffer more from FLA (Bailey, Onwuegbuzie, & Daley, 2000). However, an extended overseas experience in the target language (TL) country seems to increase self-confidence in it and, as a result, decrease foreign language classroom anxiety (Matsuda & Gobel).

Foreign language anxiety has been found to be related to a number of sociobiographical and affective factors. Onwuegbuzie et al. (1999) identified eight variables that collectively accounted for 40% of FLA variance (i.e., age, academic achievement, prior history of visiting foreign countries, prior high school, experience with foreign languages, expected overall average for current language course, perceived scholastic competence, and perceived self-worth). A further study by Bailey et al. (2000) identified the same independent variables as being linked to higher levels of FLA, with the addition of perceived intellectual ability and perceived job competence.

Gardner and MacIntyre (1993) have suggested that reciprocal paths exist between language anxiety and motivation. High levels of motivation inhibit anxiety and high levels of anxiety depress motivation. Dewaele (2005a) found that Flemish students’ attitudes toward certain foreign languages were linked to FLA in these languages. Participants who reported low levels of FLA when speaking French L2 were found to have significantly more positive attitudes toward French than those who reported moderate or high levels of FLA. However, no such pattern emerged for English as a third language (L3; Dewaele). Given the correlational nature of the design, it was impossible to determine whether attitudes or FLA were the cause or effect.

Foreign language anxiety has also been linked to personality characteristics such as perfectionism. Gregersen and Horwitz (2002) audio-recorded comments of anxious and nonanxious language learners as they watched themselves interact in a videotaped oral interview. The anxious learners were found to set higher personal performance standards, tended to procrastinate, were more fearful of evaluation, and were more concerned about errors. In other words, the more anxious participants tended to be more perfectionist. Dewaele (2002a) looked at the effect of personality traits on FLA in the French L2 and English L3 speech production of Flemish students and found that FLA was affected by both individual and contextual effects. The perception of French as the former prestige language in Flanders and its function as a social marker were found to be linked to participants’ social class, which, in turn, was negatively linked to levels of FLA in French, but not in English. This social effect appeared to be a stronger predictor of FLA in French than the three Eysenckian personality dimensions (extraversion,<sup>3</sup> neuroticism,<sup>4</sup> and psychoticism<sup>5</sup>). However, these four independent variables together explained only 9% of the total variation in FLA. In the same study, psychoticism, extraversion, and, to a lesser extent, neuroticism significantly predicted levels of FLA in English L3 production, explaining 20% of the variance. Students who scored high on extraversion and psychoticism reported significantly lower levels of FLA in English. Those who scored low on neuroticism had overall lower levels of FLA in English. It was argued that the higher FLA of introverts follows logically from the observation that they tend to be reserved, quiet, and unassertive, in contrast to the more outgoing and talkative

extraverts (Furnham & Heaven, 1999). The extraverts' more optimistic side might limit their fear of speaking a foreign language. Extraverts were also found to possess higher levels of self-perceived competence in English L3.

The study further showed that generalized trait anxiety (as measured by the Neuroticism scale) and FLA are moderately positively correlated, despite them having been considered as orthogonal dimensions by MacIntyre and Gardner (1989). Speakers who scored higher on the Neuroticism scale also reported higher levels of FLA in English. This result was in contrast to the findings of MacIntyre and Charos (1996), who reported no link between neuroticism/ emotional stability and FLA.

Foreign language anxiety might be linked to sociobiographical and affective factors, but situational factors can also affect levels of FLA. Dewaele (2007e) found that the situation in which the interaction was taking place affected FLA levels of adult multilinguals in all languages. Private speech with friends was felt to be significantly less anxiety-provoking than interaction with strangers. Public speech appeared to be the most anxiety-provoking activity, especially in a foreign language. FLA levels were highly correlated across the various languages. Although values varied in intensity, the rank order remained very similar across languages, supporting the position that FLA is a stable personality trait.

Foreign language anxiety also seems to be highly contagious; in other words, a speaker might react to and reflect the interlocutor's FLA (Dörnyei & Kormos, 2000). If both interlocutors are anxious, this will significantly affect the L2 output; however, if one interlocutor is sufficiently confident, "h/she might 'pull along' the more anxious speaker and therefore the impact of anxiety may not reach statistical significance" (p. 296).

Although levels of FLA can fluctuate in the space of a few minutes, they can also fluctuate over longer periods if the individual is involved in intensive language learning and gains self-confidence and self-perceived competence. One study that considered variation in FLA over a nearly 2-year period is van Daele's (2007) analysis on the effects of FLA on the French L2 and English L3 of Flemish students (Dutch L1). FLA was found to correlate negatively with lexical richness in English and French and positively with grammatical accuracy in English at the start of the study. FLA was not significantly linked to lexical and grammatical accuracy in French. Interestingly, the effects were strongest for English L3, the language for which participants reported lower levels of FLA than French L2. The effects of FLA faded and disappeared completely at the last data collection point (van Daele).

Several researchers suggested that skill in one's native language (e.g., reading, vocabulary, and group achievement) might affect anxiety levels in the foreign language (Ganschow & Sparks, 1996; Sparks, Artzer, Patton, Ganschow, Miller, et al., 1998; Sparks & Ganschow, 1991). Students with overt or subtle native language difficulties in reading, writing, listening, and speaking are likely to experience similar difficulties in learning a foreign language (Horwitz, 2000; Sparks et al., 1998). Contrary to MacIntyre and Gardner (1991b), these researchers argued that FLA does not play a causal role in individual differences in foreign language learning but is merely the consequence of differences in native language skill.

The cultural background of learners has also been found to determine levels of FLA. English language learners from Confucian Heritage Cultures (China, Korea, and Japan) typically suffer more from FLA than other ethnic groups (Woodrow, 2006).

In sum, it appears that CA and FLA are highly complex constellations of interacting variables, which supports MacIntyre's (1995) assertion that CA/FLA is simultaneously influencing and being influenced by other variables: "Aptitude can influence anxiety, anxiety can influence performance, and performance can influence anxiety" (p. 95). Levels of CA /FLA fluctuate both in the very short term (minutes) and in the long term (years) and seem to be associated with various situational, social, biographical, cultural, and psychological variables. MacIntyre (2007) pointed out that these fluctuations in FLA are lost when it is defined only at the level of a personality trait. Some of the contradictory findings in the CA/FLA literature might therefore be linked to the researcher's decision to define a concept at a certain level of abstraction (e.g., state, situation-specific, or trait level) (MacIntyre, 2007).

The aim of the present study is to analyze the interrelationships between these variables, also with reference to the directly relevant construct of trait EI, which provides comprehensive coverage of

individual differences in emotion related self-perceptions.

## **Independent Variables in the Present Study Age, Gender, and Education Level**

Age, gender, and education level are core independent variables in most sociolinguistic and sociopsychological research. Donovan and MacIntyre (2005) investigated the effects of these variables on FLA in a population of junior high school French immersion students, high school students, and university students. No significant gender differences in levels of FLA were found among the junior high and high school students, but women reported higher levels of FLA in the university group.

Dewaele (2007e) found that younger participants tended to report lower levels of FLA when speaking the L2 and L3. No gender differences were found, except for public speech in the L1, where the females reported higher levels of CA.

## **Number of Languages Known**

Individuals who know more languages have been found to develop more grammatical metalinguistic awareness (Kemp, 2001) and become better at learning additional languages. Kemp (2007) found that participants knowing more than two languages (and up to 12) used significantly more grammar learning strategies. Dewaele (2007e) found that quadrilinguals and trilinguals had lower levels of FLA in their L2 compared to bilinguals.

## **Trait Emotional Intelligence**

Trait theorists argue that personality has a joint biological and environmental basis but is also influenced by culture, in the sense that behaviors are expressed according to local norms (e.g., Eysenck & Eysenck, 1985). Personality traits tend to be stable over the life span, as has been found in several longitudinal studies (e.g., Caspi & Roberts, 1999). This stability can be affected by trauma, brain damage, or very consistent exposure to stimuli. Petrides and Furnham (2000, 2001, 2003) distinguished between two types of emotional intelligence (i.e., ability EI and trait EI). The former type concerns actual cognitive abilities and must be measured through maximum performance tests, similar to those used in IQ assessment. However, the development of such tests in the area of EI has proven very difficult because the realm of emotional experience is inherently subjective (e.g., Robinson & Clore, 2002) and thus not amenable to truly objective scoring procedures. The conceptual differences between ability EI and trait EI are summarized in Petrides, Furnham, and Frederickson (2004). These differences are directly reflected in empirical findings, which reveal very low, often nonsignificant, correlations between measures of trait EI and ability EI, thereby supporting an explicit distinction between the two constructs (O'Connor & Little, 2003; Warwick & Nettelbeck, 2004).

The latter type, also labeled "trait emotional self-efficacy," essentially views the construct as a personality trait encompassing a constellation of emotion related dispositions and self-perceptions. Trait EI is measured via self-report questionnaires and is located at the lower levels of personality hierarchies (Petrides & Furnham, 2001). Personality traits are hierarchically organized with a small number of broad, orthogonal (i.e., uncorrelated) dimensions<sup>6</sup> (ranging between three and six, depending on the theorist) at the apex and a larger number of more specific traits further down the hierarchy (Matthews, Deary, & Whiteman, 2003). Trait EI is narrower than the higher order personality dimensions and correlates with several of them; hence, it is conceptualized as a lower order trait (for an extended discussion, see Petrides, Pita, & Kokkinaki, 2007).

This operationalization is consistent not only with the mainstream theories of personality but also with the bulk of the available evidence from multiple studies in different domains. Thus, trait EI has consistently shown near-zero correlations with IQ tests (Derksen, Kramer, & Katzko, 2002; Petrides, Frederickson, & Furnham, 2004), as expected given the general independence of personality and cognitive ability (Jensen, 1998), and consistently high correlations with the basic personality dimensions (Tett, Fox, & Wang, 2005), as expected given its status as a lower order personality construct (Petrides & Furnham, 2001).

Based on our analyses of over 36 independent datasets using many different instruments, we would estimate that the variance overlap between trait EI and the Big Five is in the order of 70% (range: 60–80%). In the light of this evidence, we have argued (see, especially, Petrides, Furnham, & Mavroveli, 2007) that models that view the construct as anything other than a personality trait are problematic. The construct of trait EI, then, lies wholly outside the domain of cognitive ability (Carroll, 1993) and concerns exclusively emotion-related self-perceptions, rather than actual abilities, competences, or skills. This is also why we have proposed trait-emotional self-efficacy as an alternative label for this construct, emphasizing its self-evaluative nature.

Trait EI was deemed an especially important individual differences variable to incorporate in this study because it encompasses facets like emotion regulation, stress management, and assertiveness, which are *prima facie* relevant to the experience and externalization of CA/FLA. The study specifically focuses on the manifestation of CA/FLA while *speaking* the native and foreign languages, as this is generally considered to be the most anxiety-provoking of L2 activities (MacIntyre & Gardner, 1991a).

Communicative anxiety and FLA can be determined by psychological factors, but they have also been linked to a large range of sociobiographical variables (Onwuegbuzie et al., 1999). The following subsections will highlight variables linked to multilinguals' foreign language (FL) learning history and their present use of the FL, which have been found to determine the FL choice for the communication of emotion (Dewaele, 2004a, 2004b, 2005b, 2006, 2007a, 2007c, 2008). Fear (and therefore, to a certain extent, CA/FLA) is a basic emotion; it can therefore be assumed that the variables that determine language choice for the communication of emotion might equally determine levels of CA/FLA experienced by multilinguals.

### **Frequency of Language Use**

The adage “practice makes perfect” certainly applies to multiple language use. Frequent use of a language has been shown in previous research to be linked to development of grammatical accuracy as well as the more elusive aspects of sociopragmatic, sociolinguistic, and sociocultural competence (Dewaele, 2004a, 2004b, 2005b, 2006, 2007a, 2007c, 2008; Dewaele & Pavlenko, 2002). Practice in authentic communication in the TL country clearly boosts self-confidence: Matsuda and Gobel (2004) found that their Japanese students of English who had been overseas experienced significantly less FLA in speaking. Baker and MacIntyre (2000) compared two groups of Anglophone learners of French in an immersion and a non-immersion program. Although the two groups showed near-identical levels of CA in English, those in the immersion program suffered much less from FLA in French: “The increased contact with the language in the immersion program seems to give the students an opportunity to improve their ability to predict and confirm expectations (. . .), thereby increasing their perceived competence. This sets off a chain of behavior in which the student feels less anxious about communicating and thus more competent” (p. 333).

### **Language Socialization in a New Language**

Research into language socialization in multilingual settings shows that the process of acquisition of new interpretative frameworks occurs throughout the lifetime of multilingual speakers (Bayley & Schechter, 2003). Freshly arrived immigrants, like Eva Hoffman, can experience a culture shock and increased FLA when they realize that their existing L1 interpretative frameworks do not match those of the host culture. The gradual socialization in the new language is mirrored in a gradual decrease of FLA. Baker and McIntyre (2000) showed that compared to Anglo-Canadian non-immersion students, immersion students not only showed lower levels of FLA in French L2 but also often reported positive “out of school” experiences in their L2 (p. 332). It could thus be argued that the immersion students were in fact socializing more quickly in the L2.

### **Network of Interlocutors**

Hamers (1994) showed that development of bilingualism and the retention of the native tongue in children of immigrants in French Canada are linked to family attitudes and to the children's social networks. Children in environments that foster multiculturalism with denser and richer networks were



found to learn the L2 more effectively while maintaining the L1. Similar findings emerged from Wiklund's (2002) study of the relationship between social network characteristics of bilingual adolescents from immigrant backgrounds in an upper secondary school in Sweden and their language proficiency. Not just size of the L2 network, but also quality of interpersonal relationships with host family and peers, were found by Yashima, Zenuk-Nishide, and Shimizu (2004) to be important predictors of willingness to communicate. The researchers also found that FLA is "somewhat related to the sense of adjustment to a new environment" (p. 140).

### **Context of Acquisition**

Context of acquisition emerged as a significant independent variable in a number of previous studies on emotion and bilingualism (Dewaele, 2004a, 2004b, 2005b, 2006, 2007a, 2007c, 2008). The way in which the language was learned and, more specifically, the amount of authentic interaction in that language were found to have a significant effect on the self-reported use and perceived emotional force of swear words and taboo words in language choice for anger. They were also linked to the emotional force of the phrase "I love you," to self-perceived competence, and to FLA in up to five languages among more than 1,000 multilinguals. Participants who learned their language(s) through classroom instruction only were less likely to get angry or to use swear words and taboo words in that language. Classroom learners also felt less proficient and more anxious and rated swearwords as being less emotionally forceful compared to the naturalistic—or mixed—context learners (Dewaele, 2004a, 2007a). The effect of authentic language use with native speakers of the TL on the development of the interlanguage has been clearly demonstrated (for an overview, see Dewaele, 2007b). After their stay abroad or after prolonged contact with native speakers, L2 users approximate the native-speaker norm. It seems that living abroad for an extended period contributes something unique to the learners' language usage, which classroom input does not.

### **Age of Onset of Acquisition**

One of the great ongoing debates in applied linguistics concerns the critical period hypothesis. Some researchers have found that older beginners significantly outperform younger ones in both oral and written proficiency when the number of hours of instruction is held constant. Other studies have shown that younger starters have an advantage over older starters in the area of phonology (see Munoz, 2006 for a recent overview). DeKeyser and Larson-Hall (2005) and DeKeyser (2006) defended the critical period hypothesis, arguing that most of the alleged counterevidence is limited and methodologically flawed. Their core belief is that "adults have lost their ability to learn the abstract structure of a language implicitly" (DeKeyser, p. 55). It is important to point out that all of these studies considered proximity to the TL norm as the dependent variable. Our own studies on emotional speech among adult multilinguals do not measure accuracy, but rather frequency of language choice and perception of languages (Dewaele, 2006). Whereas AOA was found to predict perception of emotional force of swear words in the L2 (but not in the L3, fourth language [L4], and fifth language [L5]), it had no effect on language choice for swearing (Dewaele, 2004b). A stronger effect of AOA was found in Dewaele (2006) concerning language choice for the expression of anger. Participants who had started to learn a language early were more likely to use that language to express anger later in life.

### **Self-perceived Competence**

Self-perceived competence concerns a person's evaluation of their ability to communicate (McCroskey & McCroskey, 1988). This is a kind of general statement that all language users are forced to make at some point. It probably reflects a sum of various aspects of the foreign language, including self-perceived competence in grammar, phonology, lexis, syntax, and pragmatics and it is probably also influenced by past traumas or successes in the foreign language, as well as recent experiences in intercultural communication. Self-perceived competence is considered by MacIntyre, Clément, Dörnyei, and Noels (1998) to be one of the two antecedents underlying willingness to communicate. Donovan and MacIntyre (2005) found a moderate negative correlation between self-perceived competence and FLA. In other words, higher levels of self-perceived competence were linked to lower levels of FLA. Dewaele (2007b) found a similar pattern in his sample of 1,459 multilinguals: FLA turned out to be a significant negative predictor of self-perceived oral proficiency in the L2, L3, L4,

and L5 of participants. This perception is subjective of course; because anxiety can bias perceptions of proficiency, high-anxiety speakers tend to *underestimate* and low-anxiety speakers tend to *overestimate* their level of proficiency (MacIntyre, Noels, & Clément, 1997). Baker and MacIntyre (2000) suggested that the relation between FLA and perceived proficiency evolves over time. Beginning language learners might get caught in a vicious cycle. Highly anxious learners with low perceived proficiency might avoid L2 communication, in effect depriving themselves of the opportunity to improve their proficiency and experience: "Without an improvement in proficiency, it is unlikely that the person will experience a reduction in anxiety or an increase in perceived competence" (Baker & MacIntyre, p. 316). In sum, there are strong reasons to believe that all of these sociobiographical and psychological variables are directly or indirectly linked to levels of CA/FLA.

## Research Questions

Are levels of CA/FLA higher for languages learned later in life?

Do age, gender, education level, and knowledge of languages affect levels of CA/FLA?

Is trait EI linked to levels of CA/FLA?

Do variables that reflect current language use and past linguistic history affect levels of CA/FLA?

Is self-perceived proficiency linked to levels of CA/FLA?

## Hypotheses

Our first hypothesis was that levels of CA/FLA would be gradually higher for languages learned later (L1–L4).

We then hypothesized that CA/FLA can be predicted by a combination of sociobiographical variables, lower order personality traits, and aspects of multilinguals' history-of-learning. More specifically, older multilinguals were expected to be less anxious because of their longer experience in speaking a language. Males and more highly educated participants were also expected to suffer less from CA/FLA (Furnham & Heaven, 1999). Multilinguals knowing more languages were expected to suffer less from FLA.

We expected that participants with higher levels of trait EI would experience *lower* levels of CA/FLA. Furthermore, we expected this relationship to hold within each of the four languages. This relationship between trait EI and CA/FLA might partly account for the relative stability of the latter variable. We also expected frequent users of a language, with a high level of socialization in that language and a large and varied network of interlocutors, to be less anxious using that language.

Participants who started learning a language at a younger age and who used that language for authentic interactions during the learning process were expected to suffer less from CA/FLA in that language. Finally, more proficient language users were expected to suffer less from CA/FLA than less proficient language users.

## Method

### Participants

Participants in the present study were 464 multilingual adults (341 females, 123 males). They had been invited to fill out the Bilingualism and Emotion questionnaire (BEQ; Dewaele and Pavlenko, 2001) and the short version of the Trait Emotional Intelligence questionnaire (TEIQue-SF) (for more information, see *infra*). The questionnaires had been put on a dedicated Web page ([www.bbk.ac.uk/sllc](http://www.bbk.ac.uk/sllc)), which was advertised through several listservs (Linguistlist, discussion lists on bilingualism), through targeted e-mails to multilingual colleagues and their students in academic institutions, through appeals in translators' magazines, and through informal contacts around the world.<sup>7</sup> It remained online between 2001 and 2003. Nearly 1,700 multilinguals contributed to the database. About 200 incomplete questionnaires were discarded. Four hundred sixty-four participants filled out both questionnaires, and they constitute the sample for the present study.

The average age of the sample was 36.57 years ( $SD=11.13$  years). The participants spoke a total of 43 different L1s.<sup>8</sup> English native speakers represented the largest group:  $n=151$ ; followed by native speakers of French:  $n=54$ ; Spanish:  $n=45$ ; German:  $n=44$ ; Dutch:  $n=37$ ; Italian:  $n=20$ ; Finnish  $n=14$ ; Russian:  $n=13$ ; Swedish:  $n=10$ ; Greek:  $n=9$ ; Portuguese:  $n=9$ ; Afrikaans:  $n=5$ ; Hungarian:  $n=4$ ; Danish:  $n=4$ ; Chinese:  $n=4$ . The remaining 39 participants shared another 28 L1s. The sample could be described as highly multilingual with 98 bilinguals, 118 trilinguals, 122 quadrilinguals, and 126 pentalinguals. Languages were defined according to order of acquisition. The L2 was thus the second language to have been acquired by the individual, the L3 the third language, and the L4 the fourth language. The present study will not consider the L5 of the participants. The analyses revealed that the patterns for the L5 mirrored those of the L4, without however reaching significance, probably because of the very infrequent use of the L5 and the relatively low levels of self-perceived proficiency. It was therefore felt that the L5 data would add nothing to the already very extensive analyses.

Most participants were highly educated, with 30 having a high school diploma or less (23 females and 7 males), 111 a bachelor's degree (80 females and 31 males), 157 a master's (120 females and 37 males), and 166 a PhD (118 females and 48 males). Most ( $n=312$ ) reported working in a language-related area (translators, language teachers and researchers, librarians, students, intercultural consultants, etc.), whereas a minority ( $n=52$ ) was in professions unrelated to languages (dentists, investment bankers, architects, etc.).

## Data Elicitation Instruments

### *Trait Emotional Intelligence Questionnaire–Short Form (TEIQue-SF; Petrides & Furnham, 2006)*

The Web-based form of the TEIQue-SF was used to assess global trait EI.<sup>9</sup> We opted for the short version because we feared that potential participants might log out after filling out the BEQ. The TEIQue-SF is based on the long form of the TEIQue (Petrides, in press) and comprises 30 items, responded to on a 7-point Likert scale. Two items from each of the 15 subscales (e.g., adaptability, emotion expression, emotion perception, emotion regulation, empathy, relationships, social competence, etc.; for a full list, see Petrides, in press) of the TEIQue were selected for inclusion, based primarily on their correlations with the corresponding total subscale scores. Scores on the questionnaire ranged from 83 to 198, with a mean of 157.5 ( $SD=20.5$ ) and were slightly negatively skewed. A  $t$ -test for equality of means revealed that females scored significantly higher than males,  $t(462)=2.93$ ,  $p<.01$ , although the effect size of this difference was small ( $\eta^2=.02$ ; mean females = 159.2, mean males = 152.8). A one-way ANOVA with level of education as the independent variable showed a significant effect on trait EI scores,  $F(3, 460)=3.82$ ,  $p<.01$ , although the effect size was again small ( $\eta^2=.02$ ). A Scheffé post hoc analysis showed that participants with A-level (high-school) degrees scored significantly lower than their peers with postgraduate degrees (MA or PhD,  $p<.05$ ). Finally, there was a positive correlation between trait EI and age,  $r(461)=.093$ ,  $p<.05$ , with older participants tending to have higher trait EI scores. The internal consistency of the TEIQue-SF was very satisfactory (Cronbach's alpha = .79,  $N=425$ ). Hitherto, the TEIQue-SF has been translated into 15 languages and used in many studies around the world (e.g., Chamorro-Premuzic, Bennett, & Furnham, 2007).

### *Bilingualism and Emotion Questionnaire (BEQ; Dewaele & Pavlenko, 2001–2003)*

The Web-based form of the BEQ was used to collect information on multilingualism and the communication of emotions. A paper version of the questionnaire was tested in hard copy among 100 multilinguals. The first part of the BEQ contained 13 questions relating to participants' gender, age, education level, ethnic group, occupation, languages known, dominant language(s), chronological order of language acquisition, context of acquisition, AOA, frequency of use, typical interlocutors, and self-rated proficiency scores for speaking, comprehending, reading, and writing in the languages in question. The second part of the BEQ consisted of 13 Likert-type questions on language choice for the expression of various emotions with various interlocutors, on code-switching behavior in inner and articulated speech, on the use and perception of swearwords, on attitudes toward the different languages, and, finally, on CA/FLA in the different languages. The last part of the BEQ presented five open-ended questions which asked about (a) the weight of the phrase "I love you" in the participants' respective languages, (b) their linguistic preferences for emotion terms and terms of endearment, (c) the emotional significance of their languages, (d) the language of the home and language in which they argue, and (e) the ease or difficulty of discussing emotional topics in languages other than the first. An

in-depth discussion of the strengths and weaknesses of the database can be found in Dewaele (2006) and Pavlenko (2004). The questionnaire took about 15 mins to complete by a bilingual and about 30 min for a pentalingual. A banner popped up inviting those who had completed the BEQ to also fill out the TEIQue-SF. An identification code allowed us to link the two questionnaires.

The overrepresentation of highly educated participants might render the sample unrepresentative of the general population, but the same applies to traditional pen-and-pencil methods when a large majority of participants are university students (Gosling, Vazire, Srivastava, & John, 2004, p. 98). Gosling et al. compared a huge Internet sample ( $N = 361,703$ ) with a set of 510 published traditional samples ( $N = 102,959$ ) based on 156 articles published in the *Journal of Personality and Social Psychology* in 2002. The authors demonstrated that commonly held preconceptions against Internet samples are unfounded: “Web-questionnaire results generalize across presentation formats, do not appear to be tainted by false data or repeat responders, and are, so far, consistent with results from traditional methods. In short, the data collected from Internet methods are not as flawed as is commonly believed” (p. 102). Gosling et al. (2004) concluded by pointing out that the ability to collect data from large and diverse samples and motivated respondents and the ease and efficiency with which the data can be collected outweigh the methodological constraints (p. 102).

### **Independent Variables**

The following independent variables were used in the study: gender, age, education level, number of languages known, trait EI, chronological order of language acquisition, frequency of general use of the language, socialization in a foreign language (LX), network of interlocutors, AOA, context of acquisition, and self-perceived oral proficiency in the language.

#### *Frequency of General Use*

Information about the general use of a language was collected through the following question: *How frequently do you use each of the languages?* The five options were (1) yearly (or less), (2) monthly, (3) weekly, (4) daily, and (5) all day. A look at the distribution reveals that languages learned later in life are generally used less frequently (see Table 1).

#### *Language Socialization in the LX*

The variable “language socialization in the LX” was defined following the procedure set out in Dewaele (2006). It is a derived variable based on the difference in the general frequency of use of the L1 and an LX (either the L2, L3, or L4). The subtraction of LX from the L1 score gives a value that reflects the difference in frequency of use of the L1 and the LX; for example, if a participant indicated that s/he used the L1 all day (score 5) and the L2 weekly (score 3), the L2 language socialization score would be 2, indicating a very weak degree of language socialization in the L2. If, on the other hand, the L2 was used all day (score 5) and the L1 only weekly (score 3), the L2 language socialization score would be  $-2$ , indicating a moderate degree of language socialization in the L2. Almost half of the participants are partly socialized in the L2. This proportion decreases for the L3 and the L4 (see Table 1).

#### *Network of Interlocutors*

The questionnaire contained one question on interlocutors, which was formulated as follows: *Who do you usually use the language with?* Possible answers were (1) all, (2) colleagues, (3) friends, (4) family, and (5) strangers. The focus is thus on the type of interlocutor, rather than on the size of the social network, in which a language would normally be used (which would have been a better, but more difficult, question to answer). Only two types of interlocutors can be easily translated into a numerical value: “all” refers to a maximal size of the network and “strangers” point to an absence of network, as they imply random encounters with unknown interlocutors. It turns out that very few participants use a particular language with everyone (see Table 1). Languages learned early in life are more likely to be used with family, whereas languages learned later are more likely to be used with strangers only (see Table 1). In-depth interviews with a subsample of 30 participants showed that the network of colleagues tends to be larger than that of friends and the family network tends to be the smallest (Dewaele, 2007e). We therefore assigned these groups numerical values of respectively 2, 3, and 4 while remaining aware that these differences might be small.

**Table 1** Distribution of participants according to their linguistic practice and history of learning (in %)

Frequency of use	L1	L2	L3	L4
Yearly or less	1.3	12.8	36.8	55.6
Monthly	3.8	8.4	18.5	16.7
Weekly	11.1	15.9	20.9	10.3
Daily	16.9	22.3	12.7	8.2
All day	66.9	40.5	11.1	9.3
<b>Socialization in LX</b>				
Very weak	na	51.9	80.8	85.9
Weak	na	26.2	10.2	7.9
Moderate	na	10.1	5.1	4.8
Strong	na	11.9	3.8	1.4
<b>Network of interlocutors</b>				
Strangers	2.4	15.2	31.7	38.0
Colleagues	12.3	38.4	34.0	25.7
Friends	12.3	25.1	26.3	29.1
Family	72.0	21.1	8.0	7.2
All	1.0	0.2	0.0	0.0
<b>Context of acquisition</b>				
Instructed	na	40.0	66.8	62.7
Mixed	na	49.6	27.8	27.2
Naturalistic	na	10.4	5.5	10.1
<b>Age of onset of Acquisition</b>				
0-2	na	15.4	2.6	1.4
3-7	na	22.0	5.9	3.5
8-12	na	43.7	38.4	13.1
13-18	na	14.1	37.1	42.6
19-24	na	2.6	10.3	22.5
25+	na	2.2	5.7	17.0
<b>Oral proficiency</b>				
Minimal	0.4	4.0	15.3	26.1
Low	0.7	5.1	18.1	25.7
Medium	1.3	13.7	27.7	24.3
High	4.4	30.9	22.5	17.3
Maximal	93.2	46.4	16.3	6.7

Na = not applicable

#### *Context of Acquisition*

Three types of acquisition contexts were considered and ordered according to the amount of extracurricular contact with the target language: (a) instructed context (i.e., formal classroom contact only); (b) mixed context (i.e., classroom contact and naturalistic contact), and (c) naturalistic context (i.e., no classroom contact, only naturalistic communication outside school). Larger proportions of participants learned the L3 and L4 strictly through formal instruction compared to the L2 (see Table 1).

#### *Age of Onset of Acquisition*

Information about AOA was collected through the following question: *At what age did you start learning the language?* For the purposes of this study, participants were grouped into six AOA categories: those who started learning the language between birth and age 2, those who started between the ages of 3 and 7, those who started between 8 and 12, those who started between 13 and 18, those who started between 19 and 24, and those who started at the age of 25 or older. The latter categories are gradually larger for languages learned later in life. There is a sizable group of participants who started learning the L2 before age 3 and a few participants also learned the L3 before age 3, but no participant started learning the L4 before that age (see Table 1).

### *Self-perceived Competence*

Self-perceived competence in speaking a language was measured through 5- point Likert scales, ranging from minimal (1) to maximal (5). As expected, a high proportion of participants felt maximally proficient in the L1, with the proportion gradually decreasing for languages learned later in life (see Table 1). Concerns have been voiced about the validity of perceived competence measures (DeKeyser, 2006). Given the wide range of languages involved in the present study, it was impossible to design tests for measuring actual proficiency in all languages known to the participants. The disadvantage that self-reports might not be as accurate as one might wish does not offset the fact that they are easy to collect, enabling us to consider larger sample sizes than research based on production data. Additionally, self-reports provide sufficient detail for the specific research questions that we set out to investigate in this study. Finally, research on this issue has revealed that self-report measures of proficiency correlate highly with linguistic measures of proficiency (MacIntyre et al., 1997). In sum, we do not consider self-perceived proficiency as a proxy for actual proficiency, but rather as the subjective perception that individuals have of their capacity to communicate.

**Table 2** Distribution of participants according to the level of CA/FLA reported in different situations in the four languages (in %)

Language	CA/FLA	Friends	Colleagues	Strangers	Phone	Public
L1	Not at all	91.9	81.3	77.7	76.2	53.8
	A little	6.4	14.5	18.3	19.2	28.8
	Quite	1.5	2.4	3.3	3.3	11.9
	Very	0.2	1.3	0.7	1.1	4.2
	Extremely	0.0	0.4	0.0	0.2	1.3
L2	Not at all	69.9	50.3	48.8	41.6	24.7
	A little	23.4	34.2	33.9	29.4	31.2
	Quite	5.2	11.2	12.8	21.3	24.5
	Very	1.1	3.1	3.4	4.9	12.6
	Extremely	0.4	1.1	1.1	2.7	7
L3	Not at all	46.3	31.9	26.5	18.9	12.7
	A little	33	36	42.2	31.3	24.5
	Quite	12.4	18	15.9	24.5	22.7
	Very	5.6	8.6	9.7	15.9	20.1
	Extremely	2.7	5.6	5.6	9.4	20.1
L4	Not at all	33.9	17	20.1	12.9	4.9
	A little	39.7	39.3	34.4	25.0	17.9
	Quite	14.3	22.8	25.4	25.9	24.6
	Very	9.4	15.6	12.9	21.9	27.2
	Extremely	2.7	5.4	7.1	14.3	25.4

### **The Dependent Variable: CA/FLA**

Our dependent variable is the feedback on a question relating to CA/FLA. It was a closed question, based on a 5-point Likert scale, formulated as follows: *How anxious are you when speaking your different languages with different people in different situations? (Circle appropriate number, 1 = not at all, 2 = a little, 3 = quite anxious, 4 = very anxious, 5 = extremely anxious)*. Information was requested for every language known to the participant in the following situations: speaking with friends, with colleagues, with strangers, on the phone, and in public.

Internal consistency was measured by the Cronbach alpha coefficient. The internal consistency of the five CA/FLA questions was high across languages: (L1: alpha = .83;  $N = 425$ ; L2: alpha = .91;  $N = 406$ ; L3: alpha = .94;  $N = 271$ , L4: alpha = .94;  $N = 157$ ). Table 2 presents the distribution of the participants according to levels of CA/FLA experienced in the different languages across the five situations. The distribution of participants across the five categories (ranging from “not at all anxious” to “extremely anxious”) was skewed toward the low end of the continuum for the L1 and L2, with a majority of participants reporting no CA/FLA at all. A similar picture emerges for the L3 and L4, with

a (smaller) majority reporting low levels of FLA. The trend is reversed for public speech in the L3 and L4, for which more participants report higher levels of FLA (see Table 2).

## Procedure

To summarize, 11 independent variables were selected (a) age; (b) gender; (c) education level; (d) number of languages known; (e) trait EI; (f) frequency of general language use; (g) language socialization in the LX; (h) network of interlocutors; (i) context of acquisition; (j) AOA; (k) self-perceived oral proficiency.

The effects of the independent variables on CA/FLA will be estimated separately for every situation in every language (L1, L2, L3, L4). This will allow us to establish whether the independent variables have consistent effects in different situations and across languages. Quantitative data are supplemented by qualitative information provided by the participants. These responses, elicited by means of open-ended questions, have a purely illustrative value in the present study.

A series of one-sample Kolmogorov-Smirnov tests confirmed the finding reported earlier (see Table 2), namely that the values for CA/FLA in the four languages are not normally distributed (Kolmogorov-Smirnov Z-values vary between 6.6 and 12.1 for the L1 [all significant at  $p < .0001$ ] and they range from 2.5 to 8.7 for the other languages [all significant at  $p < .0001$ ]). In all cases, the nonparametric options were used as a result of the severe violations of the normality assumption. As a consequence, Friedman's ANOVAs were used as nonparametric equivalents of the repeated-measures ANOVA. Kruskal-Wallis analyses were used as nonparametric equivalents to one-way ANOVA to examine the effect of the independent variables on levels of CA/FLA. The nonparametric Mann-Whitney test was used instead of a *t*-test and Spearman's rho instead of Pearson's *r*. No multiple regression analysis was performed because of violations to its assumptions. It should be remembered that nonparametric tests are less powerful than the parametric equivalents, thereby leading to more stringent statistical tests and more conservative conclusions (Winer, Brown, & Michels, 1991).

## Results

### Comparison of CA/FLA Across Languages

A Friedman's ANOVA showed extremely high  $\chi^2$  values (ranging from 171 to 282), with an associated probability below .0001. Table 3 (see end of document) presents the mean values for the different situations across languages and illustrates a significant increase in FLA for languages learned later in life.

A typical comment of participants was that they felt more comfortable in their L1: Jesus (Spanish L1, Catalan L2, English L3, German L4): I feel more comfortable in L1, but L2 is my language too.

However, for some participants the L1 was no longer the language they felt most comfortable in, because of emigration and possible attrition but also because of strong emotional connotations to a distant past:

Katia (Russian L1, English L2, French L3): Russian is definitely connected to my childhood but also to the emigration. I am not comfortable in it as an adult; it is a highly emotional language connected to losses and broken illusions past child memories etc, but it is also constraining as I never learned to grow up inside of it. English is an adult language. It structured my thought, accompanied my intellectual growth, my emotional development.

Another participant, Eric, reports similar feelings of heightened CA when using his L1. He feels that as a native speaker of German he is not allowed to make errors despite the fact that he has become dominant in English. He does not feel as anxious in using his French L3 because he has no need to be a perfectionist: It is a foreign language in which he accepts that he will make errors:

Eric (German L1, English L2, French L3—dominant in English): When speaking German I feel either immature or unprofessional to a certain extent. I feel like my German has been frozen at the age of 18 (if that makes sense!). When speaking German I feel as if I should be

expressing myself more maturely though I'm not sure exactly in what way. Working with languages professionally I'm very aware of style register making mistakes so I feel less confident when using German than English now never having had to function professionally completely in German. When I'm speaking French—my L3—I feel less anxious than when speaking German with individuals. I think it's because I've set higher standards for myself in German—I'm bilingual so I shouldn't make mistakes in German. French however is very much an L3 learned in school so I expect to make mistakes and not to be able to express myself 100% so I am not as uptight about using it. Speaking publicly in French is another matter though—I'd be very nervous about having to give a presentation in French for instance.

A majority of participants report feeling more anxious when using languages learned later in life: Sonia (English L1, French L2, German L3, Russian L4): I feel much more shy and quiet when speaking languages (L2, L3, L4) I'm not as comfortable in.

Some report that, in anxiety-arousing situations, their levels of FLA in the LX reach such a point that they would rather switch to their L1:

Miquel (Spanish L1, Catalan L2, English L3, German L4): If I'm relaxed there's no problem but if I'm very anxious then I feel the necessity of using L1.

Foreign language anxiety can be linked to specific foreign languages that the participant feels s/he ought to know and feels ashamed for not knowing them better. This is the case of Christine, a French-speaking Belgian, who reports higher levels of FLA for her Dutch L2 than for her L3, L4, or L5. Dutch being one of the official languages of Belgium—which many Belgian French native speakers struggle to acquire despite many years of instruction—Christine seems to have developed a sense of guilt and shame for not being more proficient in her Dutch L2, which she links to a higher level of FLA: Christine (French L1, Dutch L2, English L3, Russian L4, Spanish L5): Dutch has a very peculiar status in Belgium. I feel ashamed I do not master it simply because I'm Belgian. That explains why I'm so anxious in contexts where I have to use it.

### **Age, Gender, and Education Level**

A series of Spearman correlation analyses revealed significant negative values between age and CA/FLA levels in the L1, L2, and L3 across the different situations (see Table 4). The same trend was detected for the L4 but generally failed to reach statistical significance. This suggests that older adults suffer less from CA/FLA than younger adults in their different languages.

A Mann-Whitney test showed only three marginally significant differences between males and females in our data. Females tended to be more anxious on the phone in the L1 (Mann-Whitney  $U = 18,670$ ,  $Z = -1.76$ ,  $p = .076$ ), in public speech in the L2 (Mann-Whitney  $U = 17,611$ ,  $Z = -1.70$ ,  $p = .089$ ), and in conversations with colleagues in the L3 (Mann-Whitney  $U = 10,660$ ,  $Z = -1.80$ ,  $p = .071$ ). (See Table 5 for means and standard deviations.) The Kruskal Wallis analysis did not reveal any significant differences in CA/FLA between the various education levels (see Table 6 for means and standard deviations). No participant mentioned age, gender, or education level in relation to CA/FLA.

### **Number of Languages Known**

The Kruskal Wallis analyses revealed significant effects of the number of languages known by the participants on FLA levels in the L3 and to a lesser extent in the L1, L2, and L4 of participants (see Table 7). Those with a higher number of languages tended to report lower levels of CA/FLA (see Figure 1).



**Table 4** Relationship between age and CA/FLA in the five situations across the four languages (Spearman rho correlation)

Languages	Friends	Colleagues	Strangers	Phone	Public
L1 (N=452)	-0.088	-0.132**	-0.147**	-0.167***	-0.135**
L2 (N=443)	-0.095*	-0.136**	-0.131**	-0.156***	-0.159***
L3 (N=337)	-0.093	-0.108*	-0.072	-0.147**	-0.143**
L4 (N=223)	0.017	-0.056	-0.045	-0.139*	-0.085

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 5** Mean values for CA/FLA among females and males in the five situations across the four languages

Language	Situation	Females		Males	
		Mean	SD	Mean	SD
L1	friends	1.10	0.34	1.11	0.43
	colleagues	1.22	0.59	1.23	0.50
	strangers	1.26	0.62	1.27	0.56
	phone	1.28	0.60	1.36	0.62
	public	1.70	0.94	1.72	0.90
L2	friends	1.41	0.70	1.40	0.72
	colleagues	1.75	0.91	1.58	0.74
	strangers	1.75	0.90	1.71	0.84
	phone	1.99	1.06	1.95	0.98
	public	2.52	1.22	2.28	1.09
L3	friends	1.90	1.09	1.74	0.82
	colleagues	2.30	1.22	1.98	0.92
	strangers	2.29	1.19	2.19	0.94
	phone	2.67	1.26	2.63	1.13
	public	3.17	1.32	2.94	1.31
L4	friends	2.08	1.04	2.04	1.08
	colleagues	2.56	1.11	2.47	1.11
	strangers	2.53	1.15	2.53	1.19
	phone	3.06	1.22	2.86	1.32
	public	3.54	1.21	3.43	1.15

### Trait Emotional Intelligence

As hypothesized, trait EI had a highly significant effect on CA/FLA levels across situations and languages (see Table 7). In other words, those participants with lower levels of trait EI suffered significantly more from CA/FLA both in their L1 and in languages learned later in life. Figure 2 reveals that CA/FLA levels are very similar for the low and average trait EI groups but not for the high group. It thus seems that multilinguals with higher than average trait EI are considerably less likely to experience CA/FLA.

### Frequency of General Use

As expected, more frequent use of a language was associated with lower levels of CA/FLA in that language. This effect was highly significant across languages and situations (all  $p < .0001$ , with the exception of public speech in the L1; see Table 7). Figure 3 reveals a linear decrease in levels of CA/FLA across situations and languages for those who use their languages more regularly. The pattern for the L1 differs slightly from that of the other languages: Those who reported using the L1 all day, at least once a day, and at least once a week show similar low levels of CA. However, levels of CA are much higher for those who use their L1 on a monthly or yearly basis.

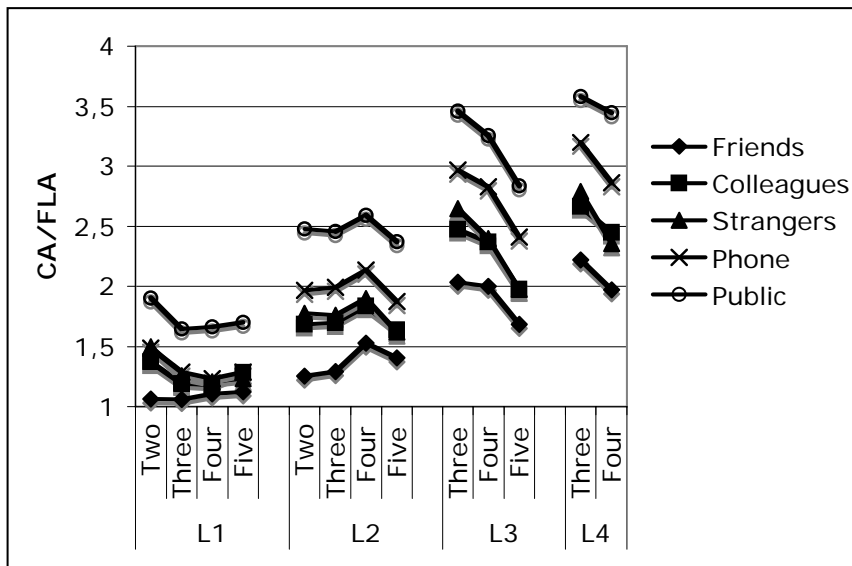


Figure 1 Mean CA/FLA scores across bilinguals, trilinguals, and quadrilinguals, in the four languages.

The general patterns that emerged from the quantitative analyses were confirmed by participants' narratives. Theodora reported feeling much less anxious using her L2, which she learned in her home country, after a period of very frequent use:  
 Theodora (Greek L1, English L2, German L3—dominant in Greek): I've been living in UK for the last 4 years. I certainly feel much more comfortable and relaxed and familiar speaking in English now rather than when I spoke English when I was back at home.

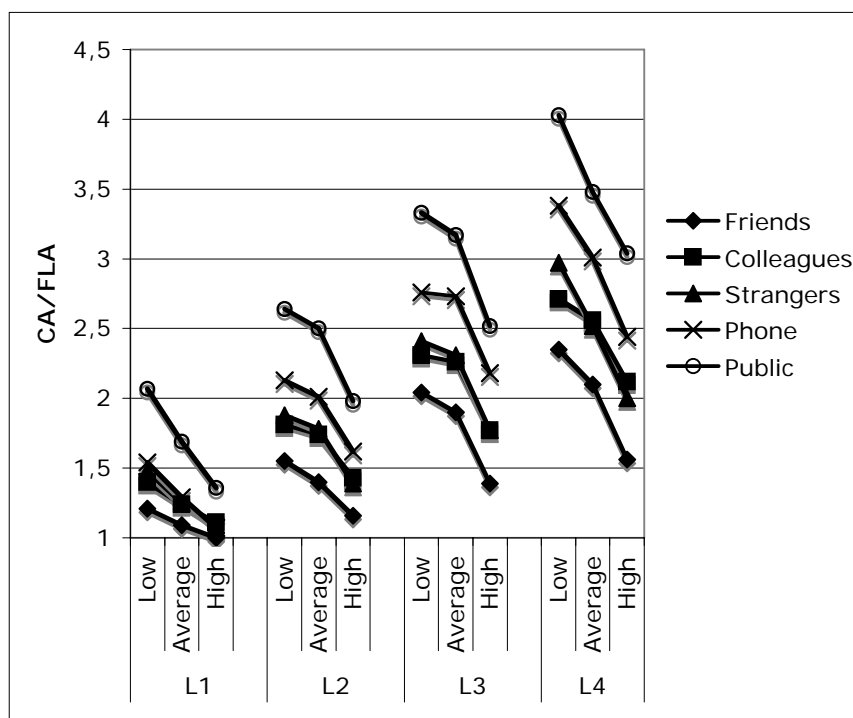


Figure 2 Mean CA/FLA scores across trait EI levels in the four languages.

Another participant, Kristina, reported that her FLA in L2 English had almost disappeared after years in the United Kingdom, despite the fact that her English remains non-native-like:  
 Kristina (German L1, English L2): Apparently I make German sounds when arguing and getting angry such as 'ach'. I don't feel inferior or disadvantaged though nowadays. I did when I first came to live in Britain and had arguments in L2. I also had native English speakers picking on my accent or

grammatical mistakes when arguing. That has stopped bothering me so much now.

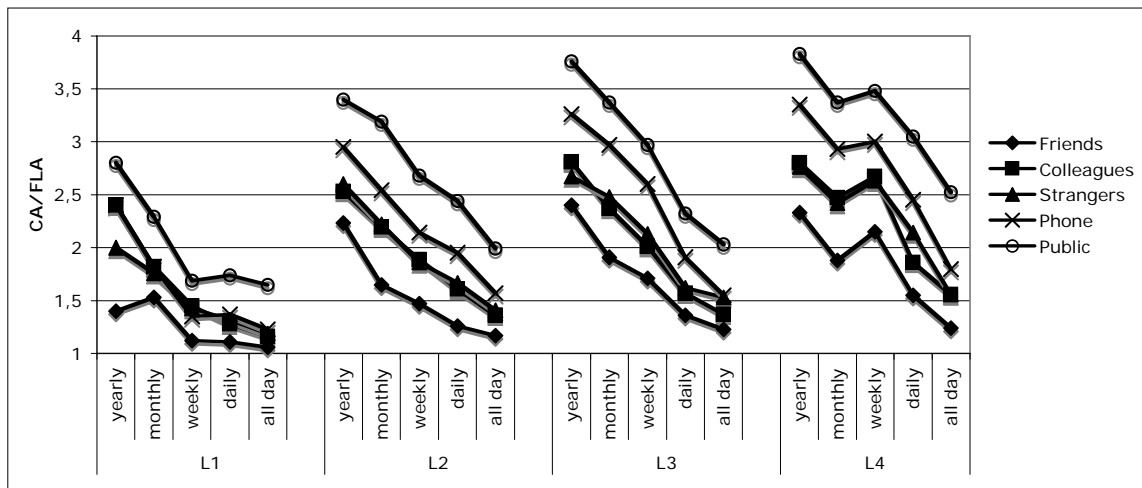


Figure 3 Mean CA/FLA scores according to the frequency of use of the four languages.

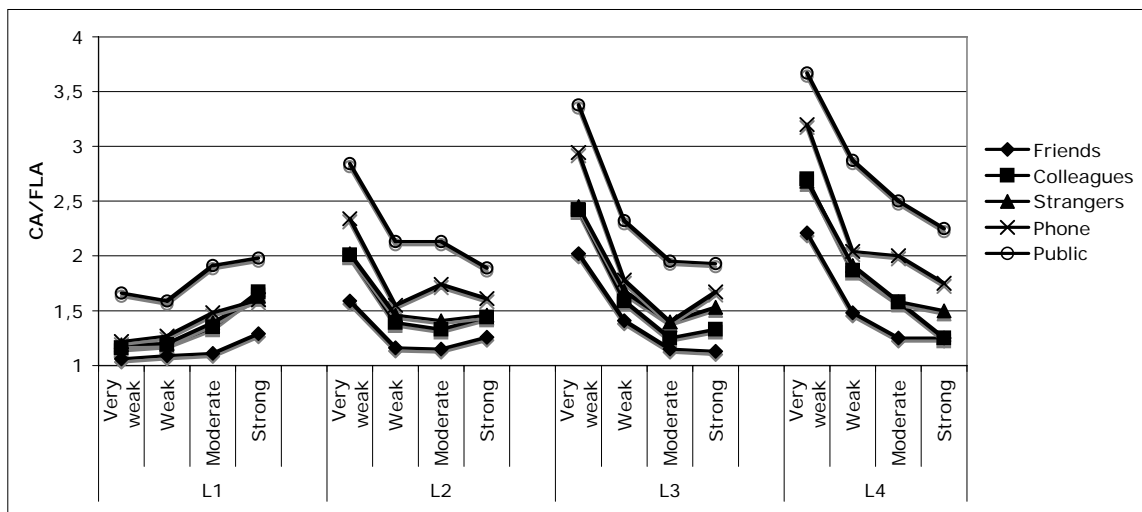


Figure 4 Mean CA/FLA scores according to socialization in the four languages.

### Language Socialization in the LX

Language socialization in the L2 had a significant effect on levels of FLA in the different situations in the L1. Indeed, those who are more strongly linguistically socialized in the L2 than in the L1 experienced higher levels of CA in the L1 (see Figure 4). Higher levels of linguistic socialization in the L2 were linked to significantly lower levels of FLA, and the same pattern was observed in the L3 and the L4 (see Table 7). This pattern also emerged from the narratives.

One participant, Bruce, married to a Chinese speaker, and living in China, claims not to suffer from FLA in his L2 Chinese:

Bruce (English L1, Chinese L2, French L3): Chinese is more intimate, more real. For the last 20+ years everything important to me emotionally happened in Chinese. Conversations were in Chinese and I “experienced” them in Chinese.

Foreign language anxiety can arise from a perceived decrease of L2 language socialization, with infrequent use of the L2 leading to a loss in proficiency:

Nancy (English L1, American Sign Language L2): I recall a dream in which a dear friend (L2 speaker) was speaking to me under poor lighting conditions which made it difficult to see him. I had to ask him to repeat himself several times (in the dream) and he reprimanded me that I “never understand him”. I

take this to be anxiety about my current level of contact in the L2 community and fear of loss of fluency with diminished contact.

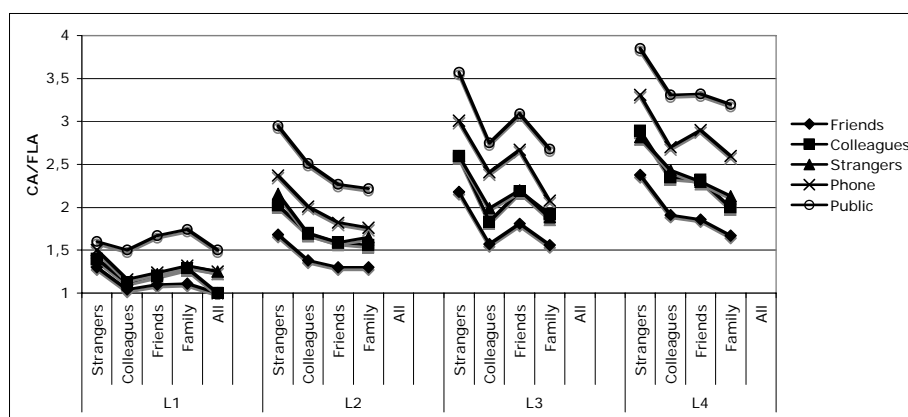


Figure 5 Mean CA/FLA scores according to network of interlocutors in the four languages.

### Network of Interlocutors

This variable appeared to affect CA/FLA levels primarily in the LXs, not the L1 (see Table 7). Figure 5 shows that if the usual interlocutors for the L2, L3, or L4 are strangers, the levels of FLA will be high. FLA levels gradually decreased for networks involving mostly colleagues, friends, and family (see Figure 5).

The situation is slightly different in the L3, for which those participants whose networks consist mostly of friends are more anxious than those participants communicating usually with colleagues. One participant, Linda, elaborated on the reasons why she feels more anxious communicating in an LX with her colleagues than with her friends:

Linda (English L1, German L2, French L3, ASL L4, Lakota L5): I use the research languages frequently: one primarily for reading (although I do coincidentally have occasion to speak it), the other for documentation. ( . . . ) speaking with colleagues in a research language evokes more anxiety than speaking that language with friends but the reverse is true for a non-research language. It has to do I think with how the listener evaluates my efforts. The colleague is gauging my proficiency (high anxiety), the friend (or language research consultant) is pleased that I am making the effort, especially when the language is an endangered language (low anxiety).

### Context of Acquisition

The Kruskal-Wallis tests showed that context of acquisition has a highly significant effect on FLA levels in the L2, L3, and L4, with  $\chi^2$  values ranging from 9.8 to 37.2 (i.e., from  $p < .007$  to  $p < .0001$ ) (see Table 8). Multilinguals who learned a language only in a classroom context reported higher levels of FLA in the L2 and L3. The surprising finding is that those who learned a language naturalistically occupy an intermediate position, whereas multilinguals with a mixed context of acquisition reported the lowest levels of FLA in the different languages (see Figure 6).

Participants confirmed that lack of communicative interaction outside the foreign language classroom increases FLA when using these languages: Jenny (English L1, German L2, French L3, Australian Sign Language L4, Italian L5): I live in a monolingual English environment. With the exception of some of my friends in language classes at university and the lecturers, I have no choice but to communicate in English; when I get the opportunity to converse in other languages I take it, but because of this lack of contact with my second, third, fourth and fifth languages, I have no contact with any speakers of my L3 or L4 and this is why I am so anxious to use them.

### Age of Onset of Acquisition

Age of onset of acquisition had significant effects on levels of FLA in the L2 and L3 but not the L4.

Figure 7 shows that, for the L2 and L3, early starters have lower levels of FLA than late starters. The relationship is not entirely linear however. Those who started between birth and age 2 scored higher on FLA than the next group, with an AOA ranging between 3 and 7. Those who had started acquisition at the age of 25 or later experienced the highest levels of FLA in the L2 and L3. The effect was typically stronger in more stressful situations.

**Table 8** Summary of the effects ( $\chi^2$ ) of the independent variables on CA/FLA levels in the five situations across the four languages (Kruskal-Wallis tests)

Language	Situation	Context of Acquisition (df=2)	AoA (df=5)	Self-perceived proficiency (df=4)
L1	Friends	na	na	39.2***
	Colleagues	na	na	52.6***
	Strangers	na	na	48.9***
	Phone	na	na	23.2***
	Public	na	na	20.2***
L2	Friends	9.8*	9.1	135.5***
	Colleagues	18.7***	13.8	140.3***
	Strangers	15.7***	24.3***	132.0***
	Phone	37.2***	28.6***	132.9***
	Public	16.8***	17.3	135.1***
L3	Friends	12.0**	7.5	101.7***
	Colleagues	15.7***	11.1*	128.3***
	Strangers	28.4***	14.9*	130.0***
	Phone	30.3***	22.8***	135.3***
	Public	26.2***	24.2***	134.3***
L4	Friends	22.8***	0.9	53.4***
	Colleagues	26.9***	5.0	55.6***
	Strangers	19.3***	1.4	58.7***
	Phone	14.6***	3.4	78.0***
	Public	15.5***	1.2	67.3***

na = not applicable, \* p < 0.05, \*\* p < 0.001, \*\*\* p < 0.0001

Some participants, like Paola, did link their early start of acquisition of an LX with lower levels of FLA and more self-confidence:

Paola (Italian L1, English L2, French L3): The acquisition of L2 at an early age meant for me to be able to speak calmly with less emotional anxiety.

### Self-perceived Oral Proficiency

Self-perceived oral proficiency was inversely linked with levels of CA/FLA, with effects that were highly significant in all languages (see Table 8). A look at Figure 8 shows a near-linear decrease in FLA levels for higher self-perceived proficiency in the L2, L3, and L4; the higher the perceived proficiency, the

lower the level of FLA. However, very different findings were obtained for the L1. Multilinguals at both extremes of the L1 proficiency scale had lower levels of CA than those in the middle of the proficiency scale. The fact that maximally proficient L1 users do not suffer much from CA is self-evident. It is more puzzling why minimally proficient L1 attriters report very low levels of CA. One possibility is that these L1 attriters do not use the L1 anymore and, therefore, cannot experience any CA. Those at intermediate levels of proficiency might still be using the L1, and the difficulties they experience while speaking their L1 might heighten their CA.

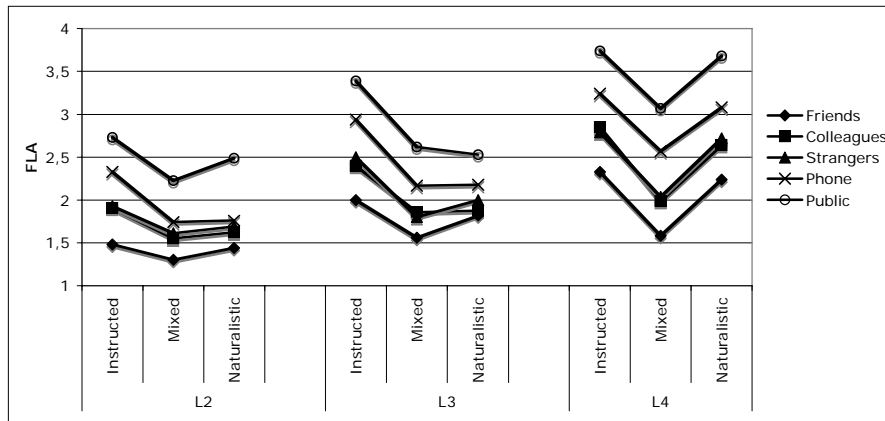


Figure 6 Mean FLA scores according to context of acquisition of the L2, L3, and L4.

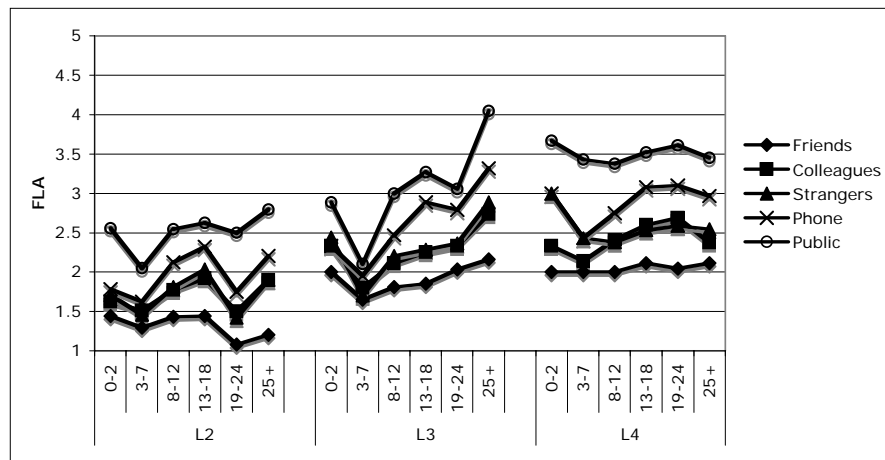


Figure 7 Mean FLA scores for AOA for the L2, L3, and L4.

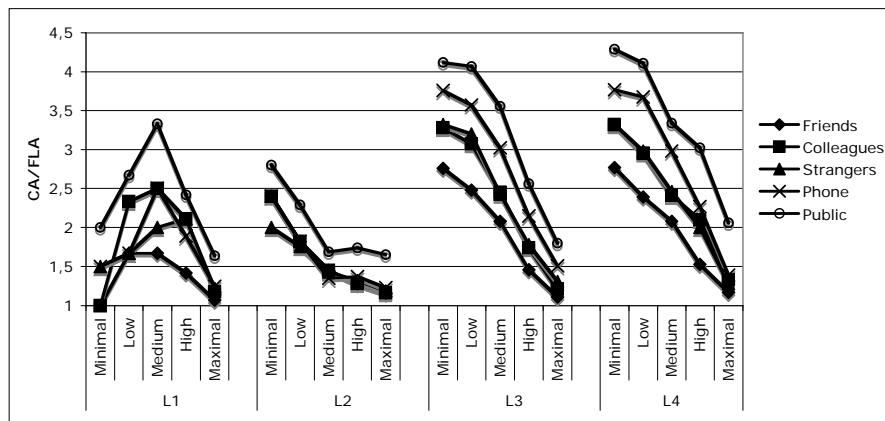


Figure 8 Mean CA/FLA scores for self-perceived oral proficiency in the four languages.

This pattern is illustrated by the comment of a self-confessed L1 attriter, Jessica, who prefers to argue in her L2, in which she feels more proficient:  
 Jessica (Spanish L1, English L2, Japanese L3—dominant in the L2): I prefer English because I feel the most comfortable using it. I don't have to worry about making mistakes or giving the wrong impression to the conversation partner. In the other languages I feel less than truly fluent and I don't like that feeling so in English I can be myself without too many worries.

The general finding here is that higher levels of self-perceived proficiency are linked to lower levels of CA/FLA.

## Discussion

Our findings significantly expand the scope of previous research on CA/FLA in five ways: first, by presenting results from a large and comprehensive sample of adult multilinguals, as opposed to the small groups of young L2 learners typically used in such studies; second, by focusing on CA/FLA not just in the L2, but in *all* of the languages that participants spoke; third, by using a Web questionnaire, we managed to attract multilinguals from all over the world, with a huge diversity of different language combinations, and who had learned their languages in different ways over different time spans. Our findings are, therefore, less likely to be influenced by “local” factors, such as intergroup climate or particular teaching methods. Fourth, the study is one of very few in the field to incorporate a directly relevant personality trait in the design as an independent variable. Finally, by considering some participants’ observations about feelings of CA/FLA in their languages, we attempted to present a more nuanced and complete picture of the phenomenon. We have argued before that, in applied linguistic research, it is important to shelve the notion of the “monolithic prototypical faceless learner, whose identity is gross group averages” (Dewaele, 2005c, p. 367). By not limiting ourselves to “averages,” we found that although for most participants who were still dominant in their L1, CA/FLA levels were higher in languages learned later in life, for a small minority of L1 attriters, like Katia and Jessica, levels of CA/FLA were higher for the L1 compared to the LX in which they had been socialized and which had become their dominant language. Hence, the statement that one is less anxious in his/her L1 than in an LX is not a law of nature but merely a reflection of averages within specific samples.

Our findings that levels of CA/FLA are significantly lower in the L1 compared to the L2 are consistent with earlier research. We are now able to claim that the same pattern is repeated for the L3 and the L4: Participants suffer from higher levels of FLA in languages acquired later in life. The pattern of context effects on CA/FLA levels in the L1, L2, L3, and L4 was as expected. Thus, private speech with friends, interactions with strangers, talking on the phone, and speaking in public were progressively more anxiety-provoking (see also Dewaele, 2007e). This is consistent with the notion that people tend to be more relaxed when they are around others they know well. In contrast, successfully talking to an audience requires that the speaker draw on his or her emotional resources. Similarly, the absence of nonverbal cues makes talking over the phone a more anxiety-provoking activity, in which intonation, pausing, and prosody have to make up for the lack of nonverbal information.

As hypothesized, CA/FLA levels within situations and across languages are linked to a number of sociobiographical and psychological variables. In contrast to gender and education, age can affect CA/FLA levels. MacIntyre et al. (2002) reported higher levels of L1 English CA among grade 8 pupils compared to grade 9 pupils but no difference between the grade levels for FLA in French (p. 550). Donovan and MacIntyre (2005) found the opposite pattern, namely higher FLA scores in French among Anglo-Canadian university students compared to high school and junior school pupils (p. 424). Our own sample is very different, as ages range from 18 to 67 years (mean = 36 years). It is possible that over time, because of a longer communication experience in different languages, multilinguals experience less CA/FLA. Another possibility is that the level of CA/FLA is mediated through the individual’s trait EI. Younger multilinguals were found to have lower levels of trait EI, which, in turn, is linked to higher levels of CA/FLA.

The more languages participants knew, the lower their levels of CA/FLA tended to be in some languages. The effect is not very strong in the L1 and L2, but much stronger in the L3 and L4. More specifically, this variable turned out to be significant in one situation in the L1, in two situations in the L2, in three situations in the L4, and in all of the situations in the L3. One possible reason for the relative weakness of the effect in the L1 and L2 is that regular use means that speakers are less likely to have to mobilize all of their resources to produce the L1 or L2. However, when producing a language learned later in life, in which they typically feel less proficient, LX users might feel like entering relatively uncharted linguistic waters. Knowing more languages might give them a bit more confidence in their ability to avoid linguistic icebergs. This is consistent with previous findings on FLA with adult LX users (Dewaele, 2007e) and it complements the findings by Kemp (2001, 2007) that polyglots outperform bilinguals in the amount of grammatical metalinguistic awareness and the diversity of language learning strategies used to acquire an additional language.

The analyses revealed significant and consistent trait EI effects across the various conditions. In fact, even in conditions involving only low levels of CA/FLA (such as communication with friends), the three trait EI groups were clearly differentiated, with the high EI group always showing the lowest CA/FLA levels. On the whole, these results corroborate the hypothesis that the constellation of

emotion-related self-perceptions that trait EI encompasses is inversely related to CA/FLA levels.

The finding that frequency of language use is linked to significantly lower levels of CA/FLA has been consistently replicated in the literature (Baker & MacIntyre, 2000). The novelty of the present study is that it establishes the link for adult LX users, rather than young learners in immersion education. Although many of our participants did not rate themselves as being highly proficient in any language, they still reported overall low levels of CA/FLA. This suggests that once an individual has left the learning environment and has become a legitimate daily LX user, albeit without native-like proficiency, that individual's levels of CA/FLA will gradually decrease. Some participants, like Kristina, stopped bothering about their deviance for the native-speaker norm and the possible negative reactions it might elicit from native-speaker interlocutors after years of constant use of the LX. This complements Saito and Samimy's (1996) finding that even advanced college students might suffer from high levels of FLA. Once out of education, regular LX users manage to reduce FLA levels.

Given that frequency of use affects FLA in the LX, it comes as no surprise that language socialization has a similar effect on FLA levels. Our language socialization measure captures more than just frequency, as it was specifically designed to assess exclusive use of the LX compared to the L1. Multilinguals, like Bruce, who are only using the LX, living and working for a long time in the country where the LX is spoken, have had sufficient opportunity to acquire the interpretative frameworks of that community. As a consequence, these individuals feel that they have moved closer to in-group status, and their extensive experience in communicating with native speakers of the LX in a wide variety of situations has made them less prone to CA/FLA.

Our results also confirm that networks of interlocutors affect FLA-levels (but not CA levels). Those who do not have a network of interlocutors in a LX but only use that language for casual encounters with strangers experience higher levels of FLA. Those who have a stable network of interlocutors tend to report less FLA. The measure we used was coarse, as we did not inquire with how many friends, colleagues, and family members the language was used or with what frequency. We also realized that very few multilinguals use a particular language with *all* of their interlocutors. Monolinguals have no choice in terms of language networks, but multilinguals do have that choice. Narratives like Linda's illustrate that both quantitative and qualitative aspects of the network of interlocutors has an effect on FLA. With regard to the latter, Linda, for example, reported that her friends appreciate being addressed in their own L1 (and Linda's LX) without judging her errors, whereas her colleagues might react differently to her errors, hence the higher level of FLA in the latter context. We also realize that social networks might be organized differently for different groups of people (e.g., immigrants). People like Eric, who stopped using his L1 at the age of 18, reported feeling immature when using that language again. It is possible that his former L1 networks of colleagues, friends, and family have collapsed into a single network roughly labeled "L1—pre-immigration network." Eric, therefore, might experience much higher levels of CA whenever he has to address an interlocutor speaking a language from his past.

Our findings indicate that variables linked to the acquisition of an LX, which preceded, on average, the filling out of the questionnaire by some 25 years, had a bearing on FLA levels in the LX. Context of acquisition was the first "history-of-learning" variable to be analyzed and showed that anyone who had learned an LX only through classroom instruction needed courage to use that language in authentic interactions. This transition from being a LX learner in a protected environment to an authentic LX user in the real world has been compared to "jumping into the deep end of the pool after having read a manual on swimming techniques" (Dewaele, 2001, p. 153). The context of acquisition of an LX seems to have a permanent effect on FLA in that LX. One intriguing finding emerged from the comparison of group averages, namely that the mixed group scored consistently lower on FLA compared to both the instructed and the naturalistic group. In other words, a higher amount of authentic interaction during the learning of an LX does not automatically lead to lower levels of FLA in later use of that LX. If that were the case, the naturalistic learners would have been the ones suffering least from FLA. Similar patterns have been found for frequency of use of the LX for swearing, the expression of anger, and the perception of emotional words (Dewaele, 2005b, 2006, 2008). One possible explanation is that in order to become fully confident and proficient in an LX, one needs a combination of explicit knowledge of the oral and the written language, of grammar, and of the lexicon, in addition to implicit knowledge that can only be acquired through frequent authentic use. The naturalistic learners might have been indistinguishable from native speakers of the LX in terms of pronunciation and grammar, but a nagging doubt might have remained about their grasp of spelling or grammar rules, hence the higher levels of FLA in the LX. The mixed learners, on the other hand, must "have jumped in the pool" at some point



and survived. Yet, the fear that they might not be able to survive the next swim seems to linger. It is possible that this category of LX users relies more on explicit, declarative knowledge for speaking, which requires a careful allocation of cognitive resources. The realization that they might not be able to cope in certain situations would be enough to raise their levels of FLA. In the L2 and L3, the effect for context of acquisition was also strongest especially in more stressful situations, like speaking on the phone and in public. These are typically situations in which demands on working memory are highest (Dewaele, 2002b; Dewaele & Furnham, 1999, 2000).

The second “history-of-learning” variable, AOA, had significant effects in the L2 and L3 (with the exception of the situation “speaking with friends”), but it had no effect in the L4. The reasons for the lack of effect in the L4 might be related to the fact that the average AOA of the L4 was simply too high to matter any more. The effect of AOA tended to be stronger in stressful situations and especially over the phone. This is not particularly surprising, as conversations over the phone force interlocutors to pay extra attention to the content of the speech as well as to paralinguistic clues like prosody, intonation, and stress pattern in order to make up for the lack of visual feedback. Those who started learning a language at a younger age might have developed this ability to pick up the linguistic and paralinguistic signals to a higher level than those who started later. Telephone conversations in an LX would, therefore, elicit less FLA in multilinguals with a lower AOA. Later starters lack the kind of implicit knowledge that allows them to automatically decode the paralinguistic clues and, therefore, they might have to divide their conscious attention between linguistic and paralinguistic information. Communicating on the phone is anxiety-provoking for most LX users, but early starters seem to feel more confident. A few participants, like Paola, linked their early exposure to an L2 to their confidence and lack of FLA in that language. Early childhood FL learning was found to lower levels of FLA, but this does not seem to be a continuous function; in other words, a lower AOA does not automatically imply a lower level of FLA.

The last independent variable, self-perceived speaking proficiency, provided us with a rough indication of oral proficiency. Rather than seeing this variable as some absolute measure of proficiency, we considered it to be of relative value. Because participants had to judge their proficiency in different skills in different languages, they were forced to make comparisons across different languages on a 5-point scale. An analysis of interindividual and intraindividual variation was, therefore, warranted. The finding that those participants who perceive themselves as proficient speakers suffer significantly less from CA/FLA was expected. The link between low proficiency and high CA/FLA was illustrated in the quote by Eva Hoffman, in which she recalled her first social encounters in L2 English. The realization that one lacks the linguistic and pragmatic means to communicate appropriately creates tension, anxiety, and even rage. L2 users will inevitably compare their performance in the L2 with that in the L1. It is hard to accept that one can be brilliant, witty, and funny in the L1 and yet appear like a stumbling fool in the L2. L2 users therefore have to overcome a linguistic and sociocultural deficit as well as a heightened level of FLA in the L2. These obstacles can be overcome, as Eva Hoffman proved, and as our participants revealed. Total perceived control and mastery of an LX, however, did come at a price for some participants. Indeed, some complained that their levels of CA/FLA had increased for languages (including the L1) in which they no longer felt dominant.

### **Limitations of the Present Study and Suggestions for Future Research**

The robustness of the results calls for follow-up studies to identify the specific sources of the overlap between trait EI and CA/FLA. In the first instance, it will be necessary to use more detailed measures of trait EI than the short form of the TEIQue employed herein. This is because the major strength of the trait EI construct is as an explanatory framework providing comprehensive coverage of the emotion-related aspects of personality (Petrides, Furnham, & Mavroveli, 2007). In certain cases, however, much of this explanatory power is compromised when a short measure of trait EI, which cannot measure reliably all of the constituent parts of the construct, is employed. This is because a global score from a short questionnaire might well mask significant differences in the relationships between the factors (or facets) with a criterion (Nunnally & Bernstein, 1994). Consequently, it is important in future research to use the full form of the TEIQue, which provides detailed measurement on 15 different facets and four broad factors and which will help isolate the source of the negative association of trait EI with CA/FLA.

A related point should be made about the measurement of CA/FLA, which can be extended to include

sources other than a single individual (e.g., by employing observer ratings) and measurement methods other than self-report (e.g., by incorporating physiological measures of anxiety, like skin conductance, blood pressure, heart rate, and cortisol levels in saliva). Such improvements would go a long way toward overcoming the monomethod bias (Campbell & Fiske, 1959) that limits the scope of this study.

The role of trait EI in relation to CA/FLA is important from an explanatory perspective. The observed pattern of associations strongly suggests that trait EI might be one of a number of basic (“upstream”) personality variables, partially determining CA/FLA levels. A strong self-belief in the ability to regulate stress levels and to express oneself clearly might well lead to lower levels of CA/FLA. In light of the fact that neuroticism is a major determinant of both trait EI and anxiety (of which CA/FLA is a specific manifestation; see Dewaele, 2002a), it will also be important to establish the extent to which the two constructs are related, after controlling for their substantial overlap with neuroticism. In other words, it will be interesting to investigate the ability of trait EI to predict CA/FLA levels incrementally over neuroticism and possibly over other personality variables, such as extraversion or optimism (Mikolajczak, Luminet, & Menil, 2006).

Sociobiographical variables reflect a wide variety of contexts for language use. Although most variables referred to the multilingual’s situation at the time of filling out the questionnaire, some reflected past language learning trajectories. The analyses showed that both past and present experiences affected levels of CA/FLA in the different languages. Our research design did not allow us to identify causal links between the variables and we realize why this might not even be possible, given the complexity of the interrelationships: Language socialization is obviously linked to networks of interlocutors and frequency of language use, which, in turn, affect a multilingual’s perception of his or her proficiency. What we did not investigate, but emerged from narratives, was the dynamic character of the multilingual’s linguistic situation. In other words, the present-day situation is only a snapshot of an ongoing evolution. Languages that have been seldom used in the past might reemerge and once dominant languages might eventually become dormant.

No questionnaire can capture the complexity of the past of all multilinguals, if only because memory can be unreliable when confronted with the question “How often did you use language Z 15 years ago?” This limitation of a questionnaire-based quantitative design is especially salient when the sample consists of adult LX users whose linguistic interactions cannot be as easily described and quantified as young learners’ in high school or university contexts. We would not go as far as to claim that questionnaire-based designs are inherently flawed with adult multilinguals. One simply needs to keep in mind that more individuals will be difficult to classify, which means that the margin of error increases. One way to counter the “averaging out” of interesting atypical patterns is to introduce a qualitative dimension that invites participants to reflect on their linguistic and sociocultural history and experience with CA/FLA. Only then can we understand that even when there is less than 1% chance that the effect of variable A on variable B is random, that particular relationship might not apply to a small number of “exceptional” multilinguals.

## **Conclusion**

We set out to investigate the independent variables that affect levels of CA/FLA in different situations in up to four languages in a sample of 464 multilinguals. The psychological independent variable, trait EI, which represents a stable personality trait, was found to have a significant negative effect on CA/FLA in all four languages known to the participants. Those with higher levels of trait EI were found to suffer less from CA/FLA across languages and situations. Gender and education level turned out not to have any significant effects on CA/FLA, but the knowledge of more languages was linked to lower levels of FLA in languages learned later in life. Participants’ history-of-learning and current linguistic practices were also found to determine levels of CA/FLA. Collectively, these findings point to the importance of incorporating both demographic (background) as well as individual differences variables in models seeking to elucidate CA/FLA.

## Notes

1 In the present article we will use the abbreviation CA/FLA when referring to the anxiety of communicating in all languages, including the first language (L1) of multilinguals. The term “foreign language anxiety” will be used when referring to specific communicative anxiety in the use of a foreign language. When referring to multilinguals’ “foreign” languages, without focusing on anyone in particular, we will use the term “LX.” If the focus is one particular language, we may distinguish between the second language to have been acquired (L2), the third (L3), or the fourth (L4).

2 “A person who knows and uses a second language at any level. One motivation for this usage is the feeling that it is demeaning to call someone who has functioned in an L2 environment for years a ‘learner’ rather than a ‘user.’ A person who has been using a second language for twenty-five years is no more an L2 learner than a fifty-year-old monolingual native speaker is an L1 [first language] learner” (Cook 2002: 4). We will also use the term “LX user,” referring to a multilingual using either an L2, L3 or L4.

3 Eysenck and Eysenck (1975) describe Extraversion in the following terms: “The typical extravert is sociable, likes parties, has many friends, needs to have people to talk to (. . .). The typical introvert is a quiet, retiring sort of person, introspective, fond of books rather than people; he is reserved and distant except to intimate friends” (p. 9).

4 Neuroticism (N) is the second major personality domain in Eysenck’s model of personality. For Eysenck and Eysenck (1975), the high Neuroticism scorer is: “an anxious, worrying individual, moody and frequently depressed. [. . .] The stable individual, on the other hand, is usually calm, even-tempered, controlled and unworried” (pp. 9–10).

5 A person who scores highly on the psychoticism scale is characterized by Eysenck and Eysenck (1976) as being “cold, impersonal, hostile, lacking in sympathy, unfriendly, untrustful, odd, unemotional, unhelpful . . . lacking in insight, strange, with paranoid ideas that people were against him” (p. 47).

6 The so-called “Big Five” are Extraversion, Neuroticism, Openness, Agreeableness, and Conscientiousness.

7 A few thousand emails were sent with the invitation to fill out the Web questionnaire. We do not know how many multilinguals were reached through the different methods; this makes the calculation of a response rate impossible.

8 We have no information about the participants’ nationality or country of residence.

9 All TEIQue forms and translations are available, free of charge, for research purposes only (E-mail: k.petrides@ucl.ac.uk).

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**Table 3** Comparison of CA/FLA levels across languages

Language	Friends		Colleagues		Strangers		Phone		Public	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
L1	1.10	0.36	1.25	0.61	1.27	0.55	1.30	0.61	1.71	0.93
L2	1.38	0.68	1.71	0.87	1.74	0.89	1.97	1.04	2.46	1.19
L3	1.85	1.01	2.20	1.14	2.26	1.12	2.66	1.22	3.10	1.32
L4	2.07	1.05	2.53	1.11	2.52	1.16	2.99	1.25	3.50	1.19

**Table 6** Means and standard deviations for CA/FLA across education levels

Language	Situation	High school		BA		MA		PhD	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
L1	friends	1.15	0.46	1.09	0.32	1.10	0.36	1.10	0.36
	colleagues	1.37	0.69	1.15	0.35	1.22	0.58	1.32	0.73
	strangers	1.44	0.70	1.18	0.41	1.31	0.59	1.26	0.56
	phone	1.48	0.89	1.25	0.49	1.31	0.58	1.30	0.65
	public	2.19	1.36	1.61	0.78	1.68	0.86	1.72	0.98
L2	friends	1.54	0.76	1.38	0.65	1.42	0.68	1.35	0.69
	colleagues	1.88	0.99	1.67	0.76	1.67	0.86	1.73	0.93
	strangers	2.04	1.00	1.69	0.85	1.75	0.89	1.72	0.89
	phone	2.12	1.07	2.02	1.09	1.99	1.04	1.92	0.99
	public	2.65	1.44	2.54	1.10	2.46	1.25	2.37	1.15
L3	friends	1.94	1.18	1.79	0.96	1.85	1.00	1.89	1.06
	colleagues	2.00	1.21	2.10	1.03	2.25	1.13	2.25	1.22
	strangers	2.31	1.35	2.27	1.09	2.25	1.04	2.25	1.19
	phone	2.44	1.26	2.76	1.19	2.63	1.16	2.65	1.30
	public	2.94	1.24	3.28	1.29	3.00	1.29	3.09	1.39
L4	friends	2.00	0.87	1.88	0.98	1.96	1.00	2.29	1.12
	colleagues	2.22	0.97	2.31	1.00	2.61	1.16	2.63	1.13
	strangers	2.67	1.22	2.46	1.18	2.50	1.17	2.57	1.15
	phone	3.00	1.22	2.87	1.30	2.97	1.18	3.09	1.30
	public	3.78	1.30	3.27	1.29	3.47	1.18	3.64	1.12



**Table 7** Summary of the effects ( $\chi^2$ ) of the independent variables on CA/FLA levels in the five situations across the four languages (Kruskal-Wallis tests)

Lang uage	Situation	Number of languages known (L1, L2: df=3, L3: df= 2; L4: df = 1)	Trait Emotional Intelligence (df = 2)	Frequency of use (df = 4)	Language socialization in LX (df = 4)	Network of interlocutors (df = 4)
L1	Friends	1.2	11.7	28.1***	17.5**	2.7
	Colleagues	4.9	13.3**	33.7***	30.7***	2.7
	Strangers	11.3*	21.1***	24.9***	25.3***	5.0
	Phone	6.4	20.1***	22.1***	15.4**	3.4
	Public	4.5	17.9***	12.5*	7.9*	3.3
L2	Friends	9.7*	10.3*	74.2***	40.7***	13.5*
	Colleagues	4.3	9.0*	79.9***	50.8***	13.3*
	Strangers	9.6*	11.9*	70.3***	39.4***	13.5*
	Phone	5.9	10.9*	72.5***	50.3***	11.3*
	Public	3.0	13.0**	62.8***	32.4***	18.0**
L3	Friends	11.5*	12.0*	66.5***	41.8***	24.1***
	Colleagues	15.6**	8.5*	74.2***	52.0***	29.3***
	Strangers	22.0***	11.0*	58.1***	44.6***	22.1***
	Phone	14.5**	9.7*	82.9***	71.5***	19***
	Public	13.9**	11.7*	71.1***	51.7***	22.8***
L4	Friends	5.5*	11.6*	33.3***	23.5***	11.9*
	Colleagues	2.0	6.2*	37.0***	28.5***	16.2**
	Strangers	6.6*	10.5*	25.9***	22.1***	10.2*
	Phone	3.8*	8.2*	34.6***	29.8***	9.9*
	Public	0.6	10.1*	26.5***	22.8***	9.8*

\* p &lt; 0.05, \*\* p &lt; 0.001, \*\*\* p &lt; 0.0001