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The Link Between Foreign Language Classroom Anxiety and Psychoticism, Extraversion, and Neuroticism Among Adult Bi- and Multilinguals

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<ABSTRACT>

The present study focuses on the link between three global personality traits (Psychoticism, Extraversion, and Neuroticism), one sociobiographical factor (knowledge of languages), and levels of foreign language classroom anxiety (FLCA; Horwitz, Horwitz, & Cope, 1986) in the second (L2), third (L3), and fourth (L4) language of two groups of adult language learners and users. The first group consisted of 86 students who were enrolled at Birkbeck College, University of London, and the second group consisted of 62 students from University of Les Illes Balears in Mallorca, Spain. The main aim was to examine whether, as is generally reported in the Second Language Acquisition literature, FLCA is unrelated to a basic personality trait reflecting anxiety (Neuroticism). Contrary to other findings in the field, correlation analyses revealed a significant link between Neuroticism and FLCA in the foreign languages of both groups, sharing between 9% and 25% of variance. Moderately significant relationships were found among Psychoticism, Extraversion, and FLCA in one group only. Language knowledge had an effect on FLCA in some languages. Strong correlations between FLCA values in L2, L3, and L4 suggest that levels of FLCA are relatively stable across the foreign languages known by the learners/users.

<END ABSTRACT>

Keywords: foreign language classroom anxiety, Psychoticism, Extraversion, Neuroticism, multilingualism, Second Language Acquisition

Dörnyei (2009) observes that anxiety is a “curious variable.” Indeed, “although its conceptualization is straightforward, there is general uncertainty about the broader categorization of the concept: [I]n some theories it refers to a motivational component (. . .), in some others to a personality trait (. . .) and it is also often mentioned as one of the basic emotions (. . .)” (p. 183–184). The effect of this “curious variable” has been extensively studied in Second Language Acquisition (SLA) research because of its ubiquity in second language classes and its potential effect on students’ acquisition and performance. Anxiety arousal is associated with distracting, self-related cognition such as excessive self-evaluation, worry over potential failure, and concern over the opinions of others. Anxious people are more likely to divide their attention between task-related cognition and self-related cognition, impeding cognitive performance (Dörnyei, 2009). Highly anxious people are aware of this problem and attempt to compensate by increased effort, which can work, up to a point. MacIntyre (1994) defines foreign language anxiety (FLA) as “the worry and negative emotional reaction aroused when learning or using a second language” (p. 27). Literature overviews have reported negative effects of language anxiety on various measures of second language performance (Dewaele, 2007a; Horwitz, 2001; MacIntyre, 1999; MacIntyre & Gardner, 1991a; Lu & Liu, 2011; Saito, Horwitz, & Garza, 1999).

Horwitz, Horwitz, and Cope (1986) argue that language anxiety is also a feeling of worry “associated with an arousal of the autonomic nervous system” (p. 125) which can severely limit the classroom performance of FL learners. They report the words of a student: “When I’m in my Spanish class I just freeze! I can’t think of a thing when my teacher calls on me. My mind goes

blank” (p. 125). For these researchers, Foreign Language Classroom Anxiety (FLCA) is “a distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom learning arising from the uniqueness of the language learning process” (p. 128).

Gregersen and MacIntyre (to appear) argue that FLA originates in the perceived difference of how learners project themselves in their L1 and their FL: “It is this very awareness of the inability to authentically communicate who we are in our first languages when using our second languages that is the impetus for foreign language anxiety” (p. 2).

The first major issue that will be addressed in this article is to what extent FLA/FLCA¹ is independent of Neuroticism, a proxy for trait anxiety. The highly influential early exploratory study by MacIntyre and Gardner (1989) reported that General Anxiety and Language Anxiety are two orthogonal (i.e., independent) dimensions of anxiety. In other words, Anglophone Canadian learners who were anxious by nature were not necessarily those who suffered most from anxiety in the French L2 classroom. Further studies by these researchers confirmed the independence of both anxiety dimensions (see next section). However, two studies outside the Canadian context have reported significant correlations between FLA and Neuroticism (Dewaele, 2002) and among Trait Anxiety, Test Anxiety, and FLCAS (Horwitz, 1986), which raises the question of the independence of both dimensions. Horwitz (1986) refers to a “moderate” association between FLCA and the related constructs (p. 561).

The second major issue is that of stability of FLA/FLCA across FLs. Most studies have reported similar rank orders for FLA/FLCA across the FLs of learners (Dewaele, 2007a, 2007b; Rodriguez & Abreu, 2003; Saito, Horwitz, & Garza, 1999), although the latter study reported variation across languages in reading anxiety. I argue that these two issues represent some of the “several unresolved issues related to language anxiety” (Dörnyei, 2005, p. 201). A better

understanding of the nature of language anxiety might contribute to removing the adjective “curious” from its description (Dörnyei, 2009, p. 183). Such research will ultimately be beneficial to FL teachers and learners because high levels of FLA/FLCA have been linked not just to weaker performance, but also to the abandonment of FL courses (Dewaele & Thirtle, 2009).

The article is structured as follows: I will begin by providing the rationale for the present study. I will then present the literature review which consists of three parts: First, I will describe and critically analyse the two seminal studies by MacIntyre and Gardner (1989, 1991b) that provide the basis for the commonly held belief in SLA that FLA/FLCA and general anxiety are independent dimensions. I will also consider some of their later work on the topic. Second, I will survey research that examined the link between FLA/FLCA and some sociobiographical and psychological variables. Third, I will consider studies that have focused on the stability of FLA/FLCA across FLs. I will then introduce the three research questions and hypotheses guiding this study, followed by its methodology. After presenting statistical analyses of the data I will discuss the findings and highlight limitations of the research design.

<A>RATIONALE FOR THE PRESENT STUDY

The present study originates from the following three observations. First, the links between language anxiety (including FLCA and FLA) and personality traits at different levels in the personality hierarchy have been under-researched. A more systematic study of the relationship between language anxiety and three broad personality dimensions can shed new light in this area. Second, most research on FLCA has focused on young learners (from childhood to late teenage years); relatively little research has focused on mature FL learners and

users. It remains to be seen whether the complex interaction between independent variables and FLCA/FLA that was found among young learners also exists among mature learners and users. Third, most studies on FLCA/FLA have focused on learners belonging to relatively homogeneous linguistic groups who are studying a single FL. Very few researchers have considered FLCA in multiple FLs of heterogeneous groups of multilinguals. By considering multiple FLs, it becomes possible to distinguish between local effects, i.e., the affective connotations of a particular language for the members of a specific community, and more global effects, namely the link between personality traits and FLCA/FLA in a wide range of second or FLs.

<A>PREVIOUS RESEARCH ON FOREIGN LANGUAGE (CLASSROOM) ANXIETY

MacIntyre et al. on the Independence of FLA and General Anxiety Measures

The idea that language anxiety is more or less independent from trait anxiety emerged from multiple studies by MacIntyre and colleagues from the late 1980s and 1990s. MacIntyre and Gardner (1991b) pointed out that two individuals with a similar score on a trait anxiety scale might in fact experience different levels of language anxiety in different situations, such as public speaking or the usage of a FL with a teacher. The latter has been described as *situation-specific anxiety*, “defined over time within a situation” (MacIntyre, 2007, p. 565). Another type of anxiety is *state anxiety*, seen as the transient emotional state of feeling nervous that can occur, for example, before an examination. A strong positive correlation exists between trait and state anxiety (Spielberger, 1983).

The first study investigating the relationship between various anxieties is that by MacIntyre and Gardner (1989). This study assessed learner anxiety on several measures,

including the Trait Anxiety Scale, “a general measure of anxiety” (p. 257), State Anxiety measuring anxiety “at the particular moment when the computer tests were completed” (p. 258), the Test Anxiety Scale “to assess the degree to which the respondents feel anxious in formal testing situations” (p. 258), the Computer Anxiety Scale, “to assess the effect of a respondent’s reaction to the use of a computer” (p. 258), Classroom anxieties, “to assess anxiety in any classroom” (p. 258), (Mathematics, French [the learners’ L2], and English [the learners’ L1]). This was complemented by a French Use Anxiety Scale, “to measure the amount of anxiety experienced when using French in interpersonal situations” (p. 257), and an Audience Sensitivity scale, which measures “the degree of apprehension experienced in situations in which the respondent encounters a group of people” (p. 258). After completing the various questionnaires, 52 male and 52 female psychology students were given four trials to learn 38 English–French word pairs administered by computer. Participants also produced French words and engaged in free recall of the paired associates. The researchers found that the mean anxiety score for French class was significantly higher than that for either English or Maths. A Principal Components analysis of all the anxiety scales resulted in a two-factor solution which accounted for 48% of the variance. Factor I obtained high loadings from seven measures: the Trait Anxiety Scale, the State Anxiety Scale, the Test Anxiety Scale, the Computer Anxiety Scale, and the Mathematics Class Anxiety Scale. The authors referred to this factor as *General Anxiety*. Factor II obtained loadings from French Class anxiety, French Use anxiety, English Class anxiety, and the Audience Sensitivity scale. This factor was named *Communicative Anxiety* because “each of these measures involves, to some extent, anxiety reactions in oral communication situations” (p. 261). One surprising finding was that both L2 French and L1 English loaded on this factor, despite the claim that language anxiety is specific to L2 situations. Correlation analyses revealed that French

Class anxiety was significantly negatively correlated with the number of correctly identified pairs over all five trials. A significant negative relationship was found between French Use anxiety and the number of correctly identified pairs for the first three trials. The only other scale to be associated with vocabulary acquisition was the State Anxiety Scale. Further analyses showed that participants with high Communicative Anxiety had lower scores on both oral and written vocabulary measures, compared to those in the Low Communicative Anxiety group. The authors noted that their results do not support Horwitz et al.'s (1986) finding that test anxiety contributed to Communicative Anxiety.

Specifically, in the discussion of the nature of their two orthogonal factors, the authors observed that both state and trait anxiety loaded on Factor I. The second factor, Communicative Anxiety, was linked to communicative aspects of language that are independent of the first factor. They concluded that "Because the factors are independent of each other, they can be considered as two separate traits" (p. 268).

MacIntyre and Gardner (1991b) replicated their 1989 study using a similar design and a similar population (English L1 students with French L2) but adding a digit span test and thirteen additional anxiety scales. A factor analysis revealed three dimensions. The first, termed *General Anxiety*, revealed high loadings from personal reports of communication apprehension, audience sensitivity, anxiety in interpersonal situations, fear of negative evaluation, English classroom anxiety, situations involving social evaluation, anxiety in novel situations, general test anxiety, trait anxiety, anxiety in routine situations, and maths classroom anxiety. The second factor, *State Anxiety*, had three state anxiety measures and anxiety of physical danger loading on it. The third factor, labeled *Language Anxiety*, had high loadings from French classroom anxiety, two forms of French test anxiety, and French use anxiety. It was also negatively associated with anxiety in

everyday situations. The authors concluded that “[l]anguage anxiety can be discriminated reliably from other types of anxiety” (p. 530). They referred back to their 1989 study and the study by Horwitz (1986) claiming that “correlations between Language Anxiety and other anxiety constructs were low enough to demonstrate that the scale could be discriminated from these constructs, including trait anxiety” (MacIntyre & Gardner, 1991b, p. 515).

This statement could be disputed, considering that Horwitz (1986) reported a significant positive correlation ($r = .29$, $p = .002$, $N = 108$; p. 560) between FLCA in French and Spanish classes and scores on the trait scale of Spielberger’s State–Trait Anxiety Inventory. A similar, but even stronger relationship emerged between Test Anxiety and FLCA ($r = .53$, $p < .001$, $N = 60$; p. 561). MacIntyre and Gardner (1989) differ with Horwitz, Horwitz, and Cope (1986) regarding whether test anxiety should be included as a component of FLCA. They argue that test anxiety is not an important factor in FL learning but reflects a general issue.

MacIntyre further broadened his range of dependent and independent variables from the mid-1990s, but kept working with Anglo–Canadian students studying French L2. MacIntyre (1994) focused on the effect of different psychological variables on willingness to communicate in the L1. He found that participants with higher levels of perceived communicative competence and lower levels of communication apprehension scored higher on willingness to communicate. More introverted participants scored lower on perceived communicative competence and reported higher levels of communication apprehension. MacIntyre and Charos (1996) used path analysis to investigate the relationship between affective variables (motivation, perceived competence, and anxiety), including global personality traits and willingness to communicate in an L2 among a group of Anglo–Canadian students with French L2. The authors noted that “individuals with lower emotional stability may be more prone to language anxiety” (p. 11).

However, they did not propose a path from emotional stability (which is the positive end of the Neuroticism dimension) to language anxiety “because prior research has demonstrated that language anxiety is not strongly related to general trait anxiety, which would be reflected in a lack of emotional stability” (p. 11). Their analysis revealed a significant negative path between Extraversion and L2 anxiety, but none appeared between Emotional Stability and L2 anxiety, which “supports the assertion that it is the social and communicative demands of L2 interaction, and not a predisposition to nervousness that drive language anxiety” (p. 19). This is an interesting finding because it confirms the independence of language anxiety and Neuroticism–Emotional Stability using a different statistical technique (path analysis instead of Factor analysis). The finding by MacIntyre and colleagues that language anxiety is independent from trait anxiety seems not to have been confirmed outside the Canadian context.

Considering the impact that the studies by MacIntyre and Gardner (1989, 1991b) have had on the field of SLA, it is worth considering some more technical reasons behind the finding that language anxiety and trait anxiety are orthogonal dimensions. Is it possible that the two- or three-factor solution of the Principal Component Analysis was the consequence of the particular anxiety scales used to collect the data? In other words, if more language anxiety-related items loaded on one particular dimension, and more general anxiety items loaded on an independent dimension in MacIntyre and Gardner (1989), it was not necessarily because one was more language-related than the other, but because another underlying factor was dividing the items onto various dimensions. A surprising finding was also that both English class and French class anxiety loaded on the same dimension in the 1989 study. Interestingly, an increase in the number of anxiety scales resulted in a three-factor solution in MacIntyre and Gardner (1991b), where the French L2 anxiety constituted a third factor, after general anxiety and state anxiety. The

independence of general anxiety and state anxiety could be seen as surprising given previous findings of a positive correlation between trait and state anxiety (Spielberger, 1983).

The French L2 anxiety factor was constituted by French classroom anxiety, debilitating and facilitating French test anxiety, and French use anxiety (speaking in public). This dimension is incidentally negatively correlated with anxiety in everyday situations. It is surprising to see two French test anxiety scales loading on this factor because the test anxiety scale had the highest loading (.75) in the 1989 study on the general anxiety dimension. Also, general test anxiety loads on general anxiety in the 1991 study, away from the French test anxieties. One might have imagined that test anxieties would load on the same dimension. It is possible that a scale of French L2 anxiety that had included more items on the use of French with a wider range of interlocutors in less stressful situations (talking to friends, family members, colleagues, both inside and outside school, but outside the classroom) might have loaded differently.

Since both factor analyses in the earlier studies and path analysis in later work confirmed the independence of language anxiety and trait anxiety, the finding cannot be linked to the choice of a particular statistical technique. However, questions could be raised about the size and the composition of the sample and its potential effect on the patterns uncovered by the researchers. Tabachnik and Fidell (2007) suggest that “as a rule of thumb, it is comfortable to have at least 300 cases for factor analysis” (p. 613). Sample sizes of 50 are described as very poor, 100 as poor, 200 as fair. According to these criteria, the samples used by MacIntyre and colleagues, which hover around 100 participants, are too small.² Another issue is the composition of the sample, where Tabachnik and Fidell warn that samples “that are known to be different with respect to some criterion (e.g., socioeconomic status) may also have different factors” (p. 612). Fabrigar et al. (1999) make a similar point, namely that “[p]sychologists often select samples

based on convenience. In many cases, this practice will not pose a problem. However, if the sample is considerably more homogeneous than the population on the common factors, this can lead to restriction of range in the measures” (p. 274). It could be argued that the samples used by MacIntyre and colleagues differ from the general world population on a key criterion, namely age (teenagers and young adults) and language combination (English L1, French L2). Because of the similarity in participants’ age, linguistic, and cultural profiles, certain patterns may have emerged that are linked to the local socio-educational and historical-political context, including group attitudes to French as a second language. It might therefore be premature to draw general conclusions on the relationship between language anxiety (in this case French L2 anxiety experienced by one hundred first-year students in Anglophone Canada) and trait anxiety, based on a relatively small and homogeneous sample. SLA researchers know that methodological and design choices can affect the outcome of their studies, hence the need for replication, with different methods and different, preferably larger and more heterogeneous samples.

Other Research on Inter-individual Variation in FLA/FLCA

The work of Horwitz and MacIntyre inspired further research into the relationships between various measures of language anxiety and independent variables. FLA/FLCA was found to be linked to age, academic and FL achievement, previous contact with FLs, perceived scholastic competence, self-worth, intellectual ability, and job competence (Onwuegbuzie, Bailey, & Daley, 1999, 2000). However, Chen and Chang (2004) failed to find a link between academic learning history and FLA/FLCA. Participants’ gender is typically unrelated to FLA/FLCA (Dewaele, 2007b; Matsuda & Gobel, 2004; Woodrow, 2006). Studies on the link between age and FLA/FLCA have yielded inconsistent results (Dewaele, 2007b; Dewaele, Petrides, & Furnham, 2008; Donovan & MacIntyre, 2005, MacIntyre et al., 2002). Dewaele

(2010b) reported that FLA seems to peak for participants in their twenties, after which it drops consistently across age groups.

Knowledge of more languages has been linked to lower levels of FLA/FLCA in various languages (Dewaele, 2007b, 2010a, 2010b; Dewaele et al., 2008; Thompson & Lee, 2012). Also, if the target language belongs to the same linguistic family of languages the learner/user already knows, levels of FLA tend to be lower (Dewaele, 2010a). Situational factors have also been found to affect levels of FLA. Private speech with friends was found to be significantly less anxiety-provoking than interaction with strangers in various languages (Dewaele, 2007b). Public speech is the most anxiety-provoking communicative activity in any language. These findings were confirmed in later research on a sample of 1579 multilinguals (Dewaele, 2010b). Finally, levels of FLA increase significantly, and linearly, from the L1 to the L5 of pentalinguals (Dewaele, 2010b).

With the exception of MacIntyre and colleagues, relatively few researchers in SLA have tried to link FLA/FLCA measures with personality traits. Dewaele (2002) found no correlation between levels of FLA in the French L2 of 100 L1 Dutch-speaking students in Belgium and their scores on Extraversion, Neuroticism, and Psychoticism. However, significant relationships emerged between these personality dimensions and the same students' levels of FLA in English L3: Psychoticism ($r = -.30, p < .01$), Extraversion ($r = -.23, p < .05$), and, to a lesser extent, Neuroticism ($r = .22, p < .05$) (Dewaele, 2002, p. 31). It was argued that the lower FLA in English of extraverts might be linked to their talkativeness and optimism. Participants with higher scores on Psychoticism might feel less anxious because they are less preoccupied about the perception interlocutors have of them. Participants scoring higher on general trait anxiety (as

measured by the Neuroticism scale) might have been more worried about how their competence in English would be judged.

Dewaele et al. (2008) investigated the effects of trait Emotional Intelligence (EI) and sociobiographical variables on Communicative Anxiety (CA) in the first language, and FLA in the L2, L3, and L4 of 464 multilingual individuals in five different situations. *Emotional Intelligence* refers to “the extent to which individuals attend to, process, and utilize affect-laden information of an intrapersonal (managing one’s own emotions) or interpersonal (managing others’ emotions) nature” (Petrides & Furnham, 2003, p. 39). Trait EI is located at the lower levels of personality hierarchies (Petrides & Furnham, 2003). The crucial finding in Dewaele, Petrides, & Furnham (2008) was that higher levels of trait EI corresponded to significantly lower CA and FLA in all the languages known by participants. The authors concluded that the constellation of emotion-related self-perceptions that trait EI encompasses is inversely related to CA and FLA levels, possibly because highly emotionally intelligent multilinguals are better able to read the state of mind of the interlocutor, thereby attenuating their CA/FLA.

FLA/FLCA has been linked to other personality dimensions such as perfectionism. Gregersen and Horwitz (2002) audiorecorded comments of four anxious and four non-anxious 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, and were more fearful of evaluation and more concerned about errors. In other words, the more anxious participants tended to be more perfectionist.

Finally, a study on 73 Hong Kong EFL learners revealed that those who were more tolerant of ambiguity were significantly less anxious during their English classes. FLCA and

second language tolerance of ambiguity shared half of their variance (Dewaele & Tsui Shan Ip, to appear).

Stability of FLA/FLCA Across Languages

The investigation of the link between FLA/FLCA and personality traits can also be approached in a different way. Most research on FLA/FLCA has considered one specific FL within one specific cultural group, assuming that the score reflected the learners' general, even innate, FLA/FLCA. One could object that learners might experience more or less FLA/FLCA depending on the language or even the FL teacher. In other words, how stable is FLA/FLCA across different target languages?

Saito, Horwitz, and Garza (1999) compared FLCA and Foreign Language Reading Anxiety (FLRA) scores from 383 American first-semester students in French, Japanese, and Russian and discovered non-significant differences for FLCA between the groups. The authors interpreted this result as an indication that FLCA is independent of the target language. Levels of FLRA did vary significantly between the groups, with the highest scores belonging to learners of Japanese. The authors were surprised to find that FLRA scores were higher for French than for Russian. Because the students were all enrolled in the study of only one FL, the authors could not directly answer the question about stability. To do this, they would have needed to compare scores of students who were doing two or more FLs simultaneously. This is what Rodriguez and Abreu (2003) did in their study of 110 Venezuelan university students acquiring two foreign languages (English and French). Participants completed two Spanish versions (one for each language) of the FLCAS. FLCA scores were non-significantly higher for French than for English, which the authors attributed to the more extensive training in English that students had

had prior to enrolling at university. The authors thus concluded that FLCA was independent of the specific target language. Among the limitations for the study, the authors pointed out that they did not measure general anxiety. They also pointed out that research on the stability of FLCA was still in its infancy and that “any conclusion regarding the stability of either the general FL anxiety or the specific anxieties is premature” (p. 372).

Dewaele (2002) found significant differences in the FLA scores of 100 Flemish high school students acquiring both French L2 and English L3. Although students had started their formal instruction in French L2 well before that of English L3, they reported significantly higher levels of FLA in French. A further study with the same participants showed that, despite the significant difference in levels of FLA in French and English, the scores were in fact significantly positively correlated (Dewaele, 2007a).

Dewaele (2007b) considered communicative anxiety (CA) and FLA scores for three situations (interactions with friends, interactions with strangers, and public speech) of a group of 106 adult students with various first languages who had acquired or were in the process of learning a variety of FLs. Highly significant positive correlations emerged between communicative anxiety in the L1 and FLA in the other languages, including significant correlations between the various FLs. The stability in the ranking of participants for CA and FLA across the various languages suggested that CA/FLA is more than just a situation-specific anxiety. Dewaele (2007b) concluded that CA/FLA is “probably situated half-way between trait, situation-specific anxiety and state, more sensitive to environmental factors than personality traits and yet more stable than states since it remains relatively stable across languages” (pp. 405–406).

The present study will focus first on the link between three global personality traits and one sociodemographic variable on FLCA levels in three FLs, and second, on the question of stability of FLCA across FLs.

<A>RESEARCH QUESTIONS AND HYPOTHESES

The following research questions were explored in this study; each is elaborated by the hypothesis based on the patterns reported in the literature review.

(1) Are higher-order personality traits (Psychoticism, Extraversion, and Neuroticism) linked to FLCA in multiple FLs? Psychoticism and Extraversion are expected to be linked negatively with FLCA while Neuroticism will be linked positively with FLCA.

(2) Is the number of languages known to the speaker linked to FLCA in multiple FLs? FLCA levels are expected to be lower among participants knowing more languages.

(3) Is FLCA stable across multiple FLs? The answer is expected to be positive and FLCA scores in the L2, L3, and L4 will be positively correlated.

<A>METHOD

Participants

Data were collected in 2001 using the same research instrument from BA language majors in two multilingual locations: Birkbeck College, University of London in the U.K., and University of Les Illes Balears in Mallorca, Spain. Both institutions use a communicative-based approach in their modern language classes. Initially I intended to amalgamate both groups. However, a *t*-test revealed that the 86 participants from London were significantly older (Mean age: 39.8, *SD* = 11.3) than the 62 participants from Mallorca (Mean age: 20.2, *SD* = 3.7) ($t[111]$

= 14.9, $p < .0001$). Both groups also differed significantly in levels of FLCA in their L3 ($t[126] = 4.15, p < .0001$) and L4 ($t[64] = 3.25, p < .002$) (see Figure 1). Moreover, the status of the L1 and L2 was quite different for the participants in Mallorca, where Catalan and Spanish are both present in daily life, and where most participants had English as an L3, which was the language they were studying, whereas the London participants had a wide variety of L1s, L2s, L3s, and L4s and studied French, Spanish or German. As a consequence, both groups were analysed separately.

<FIGURE 1 ABOUT HERE>

The London sample consisted of 86 participants, 51 females and 35 males. The ages of the participants ranged from 23 to 75. Forty-six participants were native speakers of English, 8 participants had French as an L1, and another 8 were native speakers of Spanish. Other L1s included Albanian, Creole, Dutch, German, Greek, Gujarati, Italian, Japanese, Kinyarwanda, Lingala, Lugwere, Mina, Portuguese, Russian, and Wolof. All learners were fluent in English. The most frequent L2 was French ($n = 46$), followed by English ($n = 27$). Other L2s included Gaelic, German, Italian, Kimbundu, Portuguese, Shiluba, Spanish, and Welsh. The most frequent L3s were French ($n = 18$), German ($n = 13$), English ($n = 12$), and Spanish ($n = 11$). Some students also had Creole, Italian, Portuguese, Romanian, and Swahili as an L3. The most frequent L4 was Spanish ($n = 10$). Other L4s included English, French, German, Hebrew, Hindi, Italian, Japanese, Swahili, and Swedish. Students were studying one or two languages; these included French, German, Spanish, Portuguese, and Japanese.

The sample thus consisted of 20 bilinguals, 32 trilinguals, and 34 quadrilinguals. Four students also knew a fifth language but they were categorized as quadrilinguals for methodological reasons. The words *bilingual*, *trilingual*, and *quadrilingual* reflect the number of

languages the participants claimed to know and do not refer to proficiency levels (cf. Dewaele, 2010b). Some of the participants had learned their languages in instructed settings while others had learned them under naturalistic conditions. The questionnaire merely asked what languages were known and the order in which they had been acquired. It did not enquire about proficiency levels in the various languages.

The Mallorca sample consisted of 62 participants, 49 females and 13 males, aged between 17 and 39. Thirty-six participants were native speakers of Catalan; 23 participants had Spanish as an L1. The remaining three participants had Boobe, English, and German as L1s. The most frequent L2 was Spanish ($n = 38$), followed by Catalan ($n = 22$). Two participants had English as an L2. The most frequent L3 was English ($n = 56$), followed by Spanish ($n = 11$). Some participants also had Catalan, French, and Spanish as an L3. The most frequent L4 was German ($n = 19$). Other L4s included English, French, and Italian. Students were enrolled in English courses. The sample thus consisted of 30 trilinguals and 32 quadrilinguals, with 3 pentalinguals who were recorded as quadrilinguals.

Materials

First, participants completed a sociodemographic questionnaire relating to language background, age, and gender. Second, they completed the 33-item Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz, Horwitz, & Cope, 1986). The FLCAS has been recognized as a reliable tool (Young, 1994), although some researchers have questioned its validity (Sparks & Ganschow, 2007). Factor analyses of FLCAS data in studies with various student populations have consistently yielded the three dimensions (fear of negative evaluation, communication apprehension, and test anxiety; Arnaiz & Guillén, 2012; Liu & Jackson, 2008). The FLCAS consists of Likert-type scales to measure responses to stressors. It includes items relating to

communication apprehension, for example, “I feel more tense and nervous in my language class than in my other classes”; test anxiety, for example, “I am usually at ease during tests in my language class”; and fear of negative evaluation, for example, “I am afraid that the other students will laugh at me when I speak the foreign language.”

The scores on the FLCAS were determined using an ideal answer for each of the 33 questions. An *ideal answer* is either ‘strongly agree/agree’ or ‘strongly disagree/disagree’ depending upon the direction of the question. After re-orienting the questions so that they reflected FLCA, a value of 2 was assigned to answers including the word “strongly,” and a value of 1 to answers with “agree” only. The maximum possible score is 66. In the London sample, scores ranged from 0 to 42 for the L2, from 0 to 37 for the L3, and from 0 to 31 for the L4. In the Mallorca sample, scores varied between 2 and 28 for the L2, between 0 and 44 for the L3, and between 0 and 46 for the L4. Internal consistency of the scale was high in the London sample (Cronbach alpha: 0.86) and the Mallorca sample (Cronbach alpha: 0.80). A series of one-sample Kolmogorov–Smirnov tests revealed that the FLCA values for the L2, L3, and L4 are normally distributed in both samples.

Third, participants filled out the short version of the Eysenck Personality Questionnaire (EPQr) which contains 12 items for each personality dimension: Extraversion versus Introversion; Neuroticism versus Emotional Stability; and Psychoticism versus Tender-Mindedness (Eysenck, Eysenck, & Barrett, 1985). Participants filling out the EPQr are invited to tick either “yes” or “no.” Examples of items include : “Would you like other people to be afraid of you?” (Psychoticism), “Can you get a party going?” (Extraversion), and “Are you a worrier?” (Neuroticism). Barrett et al. (1998) demonstrated the factorial similarity of Psychoticism, Extraversion, and Neuroticism in data collected from 34 countries, which suggests that the

Eysenck factors are strongly replicable across the world. In other words, this instrument is robust (Barrett, 1999).

People scoring high on Psychoticism “tend to be hostile, cold, aggressive, and have poor interpersonal relations”, those scoring low would be described as warm, friendly and sociable (Furnham & Heaven, 1999, p. 327). The typical extravert is sociable, active, talkative, person-oriented, optimistic, fun-loving, and affectionate. The typical introvert is reserved, sober, aloof, unexuberant, task-oriented, retiring, and quiet (Costa & McCrae, 1992). High-Neuroticism individuals are worried, nervous, emotional, insecure, inadequate, hypochondriacal. Low-N individuals are emotionally stable, calm, relaxed, hardy, secure, self-satisfied (Costa & McCrae, 1992). Mean scores on the three dimensions were as follows for the London sample: Psychoticism: $M = 2.87$, $SD = 1.97$; Extraversion: $M = 7.68$, $SD = 3.09$; Neuroticism: $M = 6.09$, $SD = 3.16$. Scores were comparable for the Mallorca sample: Psychoticism: $M = 3.00$, $SD = 1.60$; Extraversion: $M = 7.95$, $SD = 2.63$; Neuroticism: $M = 5.71$, $SD = 3.25$. Internal consistency of the three dimensions, as measured by Cronbach alpha coefficient, was high for Psychoticism (London sample: 0.76, Mallorca sample: 0.79), for Extraversion (London sample: 0.84, Mallorca sample: 0.80), and for Neuroticism (London sample: 0.81, Mallorca sample: 0.82).

A series of t-tests revealed gender differences in FLCA levels, with female participants scoring higher on FLCA than male participants in the L3 of the Mallorca group but not in the L2 and L4. A similar significant gender effect was found for FLCA in the L3 and L4 in the London group.

A Pearson correlation analysis showed no significant relationship between age and FLCA in the London sample. A significant negative relationship emerged in the Mallorca sample

between age and levels of FLCA in the L3 (but not in the L2 nor the L4).

<A>RESULTS

Psychoticism, Extraversion, Neuroticism, and FLCA

A series of Pearson correlation analyses (two-tailed) was used in order to determine the relationship between the three personality traits and FLCA in the three FLs (see Tables 1 and 2).

<TABLE 1 ABOUT HERE>

<TABLE 2 ABOUT HERE>

The results show a non-significant relationship between Psychoticism and FLCA in the London group, and a significant negative relationship in the Mallorca group, which suggests that more hostile learners experienced less FLCA in their English L3.

Extraversion is significantly negatively correlated to FLCA in the L3 in the Mallorca group. In other words, introverts suffered more than extraverts from FLCA in their L3. The relationship fails to reach significance for their L2 and L4, and is non-significant in the London group.

Neuroticism is strongly positively correlated with FLCA in the three FLs in the Mallorca group and in the L2 and L3 in the London group. In other words, more emotionally stable participants suffer less from FLCA, whereas high-Neuroticism participants report significantly higher levels of FLCA in their FLs (see figures 2 and 3). A calculation of the squared correlations shows that FLCA and Neuroticism have between 9% and 25% of variance in common.

<FIGURE 2 ABOUT HERE>

<FIGURE 3 ABOUT HERE>

Link Between Number of Languages Known and FLCA

A Pearson correlation analysis showed a significant negative relationship between the number of languages known to the London participants and their levels of FLCA in the L2: $r(85) = -.282, p < .01$. The relationship was not significant for the L3: $r(65) = .162; p = ns$. No such relationship emerged between the number of languages known to the Mallorca participants and their levels of FLCA in the different languages (L2: $r[61] = -.007, p = ns$; L3: $r[61] = .126, p = ns$).

The Link Between FLCA Scores in the L2, L3, and L4

Significant positive correlations emerged in the London sample between FLCA levels in the L2 and the L3 ($r[86] = .255, p < .05$), between the L2 and the L4 ($r[34] = .562, p < .001$), and between the L3 and the L4 ($r[34] = .752, p < .0001$). Similar patterns emerged in the Mallorca sample between FLCA levels in the L2 and the L3 ($r[62] = .637, p < .0001$) and between the L3 and the L4 ($r[32] = .530, p < .002$), but the relationship failed to reach significance between the L2 and the L4 ($r[32] = .250, p = ns$). These results suggest that participants who experience higher levels of FLCA in one language tend to experience higher levels of anxiety in their other FLs.

<A>DISCUSSION

To sum up, the findings reported here allow me to partially accept Hypothesis 1: Extraversion and Psychoticism are significantly linked to FLCA but only in the Mallorca group, with high scorers on Extraversion and Psychoticism reporting lower levels of FLCA. Neuroticism correlates significantly with FLCA in both groups. Hypothesis 2 is rejected as the

knowledge of more languages is only linked to lower levels of FLCA in the L2 of the London group, and no relationship exists in the Mallorca group. The third hypothesis is confirmed: FLCA scores across languages are positively correlated across different FLs, meaning that participants with high levels of FLCA in the L2 typically also had high levels of FLCA in the other FLs.

The finding that high scorers on Extraversion and Psychoticism had significantly lower levels of FLCA in the Mallorca group mirrors previous research with teenagers (Dewaele, 2002). The more extraverted learners enjoyed taking risks in using their FL in class, and those scoring higher on Psychoticism cared less about how their FL skills might be perceived. Apparently, the relationships between these two personality traits and FLCA disappear in adulthood.

The most striking finding in the present study is the significant relationship between FLCA and Neuroticism, as it contradicts the accepted view that FLCA is totally independent from trait anxiety (MacIntyre & Gardner, 1989, 1991b) and suggests that the early finding by Horwitz (1986) on a link between FLCA and trait anxiety might have been more robust than previously thought. MacIntyre and Charos's (1996) hunch that "individuals with lower emotional stability may be more prone to language anxiety" (p. 11) was correct, and if they had not abandoned this line of inquiry "because prior research has demonstrated that language anxiety is not strongly related to general trait anxiety" (p. 11), they might in fact have found evidence of a relationship between FLA and Neuroticism/Emotional Stability. The fact that Neuroticism shares up to 25% of variance with FLCA means that three quarters of variance is left unexplained. This is a clear indication that FLCA is a unique construct. However, the overlap is large enough to reject MacIntyre and Gardner's (1989) description of the two dimensions as being orthogonal.

It thus seems that for the participants of the present study general anxiety and worry tended to manifest themselves in the FL classroom in the form of FLCA. It could be argued that FLCA is more than just a situation-specific dimension. It is clearly linked to personality traits higher up in the hierarchy. Given the correlational nature of the analysis it is impossible to decide on the cause. It seems unlikely, however, that the lower-level trait (FLCA) would have had a significant effect on Neuroticism, a trait situated at the summit of the hierarchy. Anxiety in the FL context, which learners typically encounter in their early teens, is unlikely to make them score higher on Neuroticism. I would argue that causality probably runs the other way. That said, it not impossible that a third variable that was not measured in this study is responsible for the relationship between Neuroticism and FLCA.

Some personality psychologists acknowledge the effect of environmental factors on people's personality profiles (Pervin & Cervone, 2010). Two recent studies have shown that multilingualism and multilingualism are linked to higher levels of Cognitive Empathy and Tolerance of Ambiguity (Dewaele & Li Wei, 2012, 2013). While certain personality types might thus be inclined to suffer more or less from FLCA, the level of FLCA can be mitigated by the participant's social and linguistic history and environment. However, the pattern that emerged from earlier research showing that participants knowing more languages suffer less from FLA/FLCA was much less pronounced here (Dewaele, 2007b, 2010a, 2010b; Dewaele, Petrides, & Furnham, 2008; Thompson & Lee, 2012).

The strong correlations for FLCA across the L2, L3, and L4 in both groups suggest that levels of FLCA are relatively stable across multilinguals' FLs. It seems that, overall, individuals who suffer more from CA/FLA/FLCA do so in all their languages, including their L1 (Dewaele, 2010b; Dewaele Petrides, & Furnham, 2008). This finding has pedagogical implications, namely

that fighting FLCA is not an easy task. Of course, the teacher should strive to create a low-threat, positive learning environment (Arnold, 2011) where teacher support and group solidarity will encourage anxious learners to participate and where judicious praise might promote their self-perception as FL users. Gregersen and MacIntyre (to appear) list 15 anxiety-reducing activities that FL teachers can use “to create a classroom comfort zone” (p. 13).

The finding that Neuroticism shares up to a quarter of variance with FLCA does not invalidate the results that MacIntyre and his colleagues have presented over the years have presented over the years with considerable support from diverse statistical analyses. However, it does raise the possibility that their findings might have been influenced by choices in the research design, including the selection of participants with similar language combinations, and by methodological and statistical choices in the treatment of the data.

The present study has a number of important limitations. The first is the choice of research instruments and the comparability of research results. Indeed researchers have defined and operationalised the constructs of General Anxiety and Neuroticism, Foreign Language Anxiety, and FLCA slightly differently, using a range of instruments. Although it could be argued that they broadly reflect the same dimensions, that the correlation between MacIntyre’s FLA and Horwitz’s FLCA should be extremely high, and that they should therefore display similar relationships with General Anxiety and Neuroticism, one could also argue that the devil is in the detail, and that subtle differences in formulation can have unexpectedly large statistical consequences. The specific choice of the EPQ-r rather than a complete “Big Five” personality questionnaire such as the *NEO Five-Factor Inventory* (Costa & McCrae, 1992) could also be questioned. The EPQ-r was preferred because it is short and allowed the calculation of a valid score for Neuroticism (reflecting general anxiety). Personality psychologists have underlined the

validity and reliability of the EPQ-r, which is widely used with different populations (Barrett et al., 1998), although some items and the scoring method may strike the layperson as a little odd. In the same vein, the FLCAS has been challenged, but it is still a widely recognized and respected instrument, which yields a valuable measure of FLCA. This allows a comparison with earlier research, and might provide an impetus for further research. An analysis of the factorial structure of the FLCAS was outside the scope of the present study, and was methodologically impossible. That said, SLA researchers should strive to develop better instruments to measure different types of language anxiety. Indeed, the FLCAS was less suited in the present study for languages that participants were no longer actively learning.

The second limitation is related to the relatively greater linguistic homogeneity of the Mallorca sample compared to the London sample. Although participants in both samples were multilinguals, those in the Mallorca sample had mostly Catalan and Spanish as simultaneous L1s or L2s. These two languages had been acquired in a bilingual setting. However, because students had typically also had instruction in these languages, they may have experienced less anxiety when using either language in the classroom. English was the L3 of most Mallorca participants, and could be described as the first truly foreign language. Participants in the London sample had a much greater variety of L1s, many had grown up in bilingual settings or in bilingual families, and functioned in English in a multilingual and multicultural capital. Over half had English as an L1, but no single language dominated the L2, L3, or L4. Many participants were also studying languages they had acquired and lost after immigration or after changes in personal and social relationships. In other words, it was impossible to determine exactly whether a language was a second or a foreign language for most of our participants. Most L2s, L3s, and L4s spoken by participants had been learnt in a classroom, but may also have been used outside school or

university. These languages had typically been acquired in different contexts and participants had different degrees of proficiency in them (about which, unfortunately, no information was gathered). The comparison of FLCA of the L2, L3, and L4 is thus perfectly possible, as chronology of acquisition has been shown to be a strong predictor of proficiency and language anxiety (Dewaele, 2010b), but it is obviously a generalization that hides a complex reality.

The third limitation is the use of the EPQ-r with participants having multiple first languages and culture backgrounds. The Eysenck Personality Questionnaire has been validated with homogeneous English and Spanish populations, but the participants of the present study are much more heterogeneous. The common characteristic of the participants is the European context, their relatively high proficiency in English, and hence their ability to understand the statements in the EPQ-r. Given increasing multilingualism and multiculturalism around the world, it will probably become increasingly difficult to obtain homogeneous and perfectly comparable samples, which should not stop psychologists from carrying out research on these heterogeneous populations.

The final limitation is linked to sample sizes. Because separate analyses were run for the London and Mallorca samples and because the numbers of participants who provided data for an L3 and an L4 were increasingly smaller, it was impossible to use more powerful MANOVAs, or run a Factor Analysis. In fact, this was precisely the word of caution raised earlier about MacIntyre and Gardner (1989, 1991b).

<A>CONCLUSION

It is unlikely that the present study will radically alter researchers' perception that FLA/FLCA is a "curious variable" (Dörnyei, 2009, p. 183). The aim was to improve "the

broader categorization of the concept” (p. 183) and to cast a critical eye on the pioneering work by MacIntyre and Gardner (1989, 1991b). This showed that early results may have been affected by methodological and design choices, and that the conclusions had remained unchallenged in SLA for more than 20 years. The present finding that FLCA and Neuroticism (used here as a proxy for trait anxiety) are not orthogonal, i.e., completely independent dimensions of anxiety, contributes to a slightly clearer picture of FLCA and its relationship with personality traits.

The significant relationship between FLCA and Neuroticism (sharing between 9% and 25% of variance) in the second, third, and fourth languages of adult students in Mallorca and in London suggests that variation in learners’ level of FLCA in various FLs is less idiosyncratic than previously thought. It suggests that learners who are naturally inclined to worry (high-N) will also worry more about their communication in the FL class. Other personality traits were found to be linked to FLCA, but not in both locations and not in all FLs. Learners from Mallorca who scored higher on Psychoticism and Extraversion tended to suffer less from FLCA in their English L3 and while the patterns existed for the other languages, they failed to reach significance.

The number of languages known turned out to have a much more limited effect compared to previous studies (Dewaele, 2010a, 2010b) as the London multilinguals only scored significantly lower on FLCA in their L2.

The present study is the first to my knowledge to have considered FLCA in the three FLs of participants. As much of the work on FLCA has focused on monolinguals learning a FL (typically English L1, French L2), it was impossible for researchers to determine how stable FLCA was (see however Rodriguez & Abreu, 2003). Local factors, such as inter-group attitudes, or a dislike of particular teaching methods, or even a particular teacher, can affect FLCA. By

considering FLCA in three FLs of students in two different countries, with different language combinations, the effect of local factors could be limited and more general patterns could emerge. Strong correlations of levels of FLCA across languages suggest that FLCA is a stable construct. In other words, the ranking of students according to FLCA in one FL class is very likely to be very similar to the ranking in other FL classes. This also reinforces the point that, if FLCA is strongly linked to Neuroticism, it is logical for it to be equally strong in various FLs. However, it is important to remain careful. A number of limitations linked to the choice of research instruments, of the heterogeneity of samples as well as sample size have to be kept in mind when the results are interpreted. I am convinced that FLA/FLCA, in interaction with complex situational and sociobiographical factors, are linked to other personality traits. Further exploration is needed of this intriguing area of research, with bigger samples and better designs.

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NOTES

¹ I am considering FLCA as being nested within FLA.

² This is the main reason Factor Analysis was avoided in the present study and correlation analyses were preferred, as they can be used with smaller samples.

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TABLE 1

Correlation Analysis Between Psychoticism, Extraversion, Neuroticism, and FLCA in the L2, L3, and L4 of the London Group (Pearson r)

	L2 ($n = 86$)	L3 ($n = 66$)	L4 ($n = 34$)
Psychoticism	-.177	-.080	-.174
Extraversion	-.108	-.085	-.018
Neuroticism	.306**	.273*	.300

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

TABLE 2

Correlation Analysis Between Psychoticism, Extraversion, Neuroticism, and FLCA in the L2, L3, and L4 of the Mallorca Group (Pearson r)

	L2 ($n = 62$)	L3 ($n = 62$)	L4 ($n = 32$)
Psychoticism	-.063	-.262*	.042
Extraversion	-.207	-.285*	-.012
Neuroticism	.339**	.502***	.506**

$p < .05$, ** $p < .01$, *** $p < .0001$

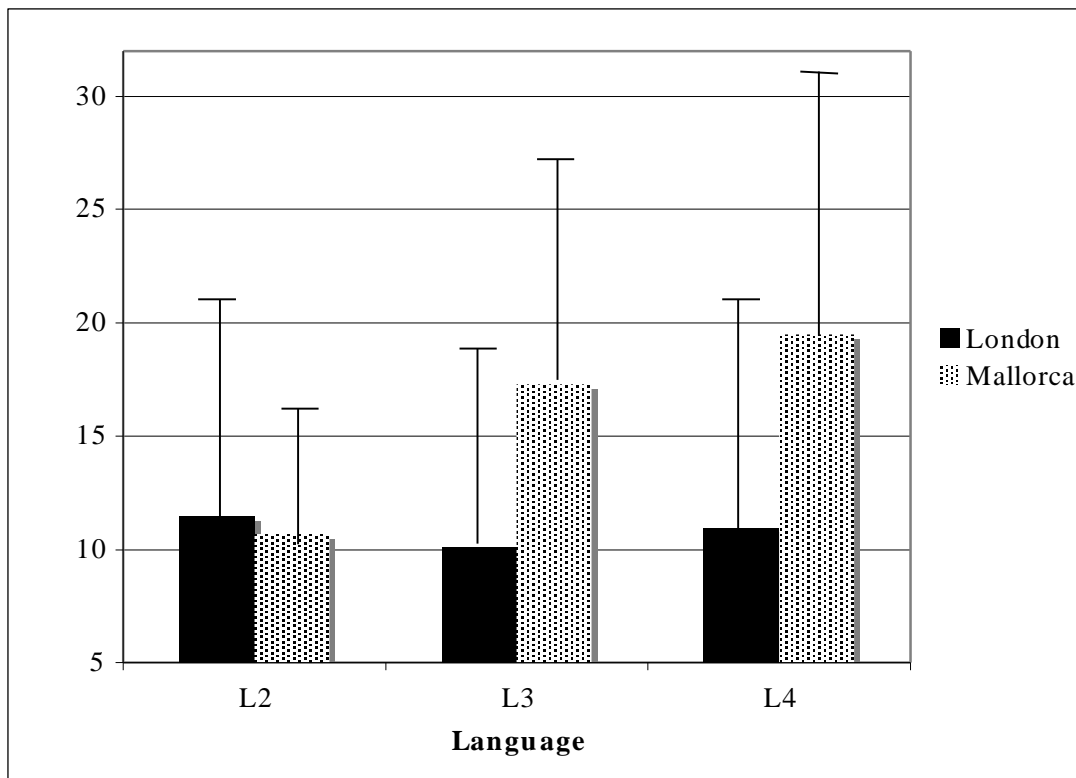


FIGURE 1

Mean Scores and *SDs* for FLCA in the L2, L3, and L4 of Participants in London and Mallorca

FIGURE 2

Correlation: Neuroticism Against FLCA in the L3 of the London Sample

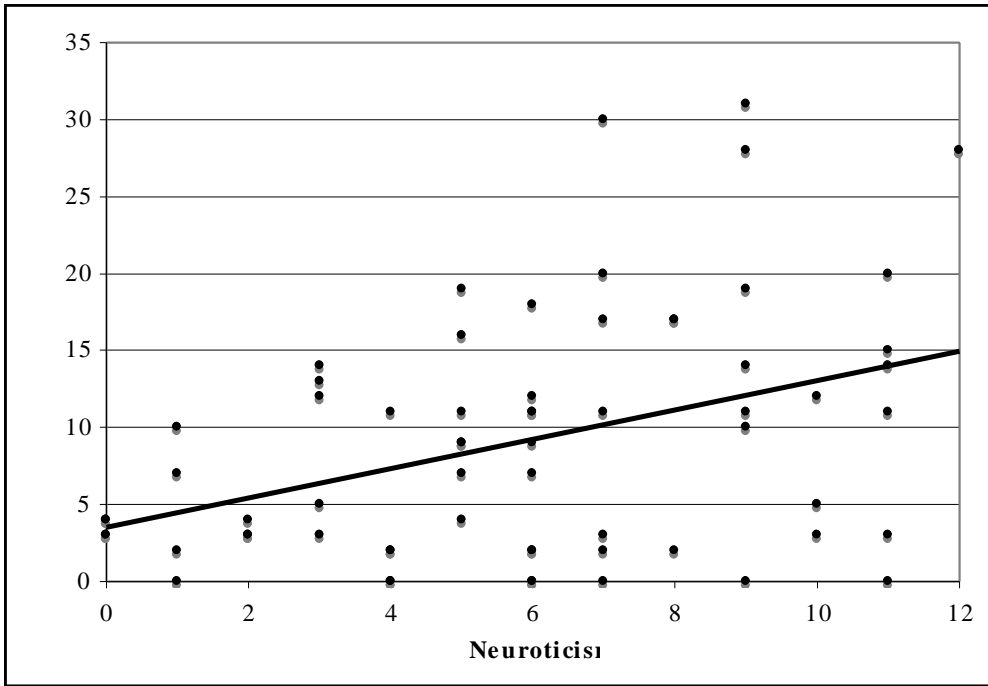


FIGURE 3

Correlation: Neuroticism Against FLCA in the L3 of the Mallorca Sample

