

Can the neuroticism-willingness to communicate relationship across languages be explained by anxiety?

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Abstract

This study focuses on the role of neuroticism in shaping L1 and L2 users' communicative behaviour, as represented by the L1/L2 users' willingness to communicate (WTC). It was expected that this relationship could be explained by language-specific forms of anxiety: communication apprehension (CA) in L1 communication, and language anxiety (LA) in L2 communication. The participants were 621 Polish secondary grammar school students at the intermediate to upper-intermediate levels of English proficiency. Two mediation analyses revealed that for L1 communication, neuroticism was significantly related to WTC, with CA mediating this relationship. For L2 communication, in contrast, this relationship could be observed only when controlling for LA, which suppressed the link between neuroticism and WTC. These findings suggest that the effect of neuroticism on the willingness to communicate is indirect in L2 communication, and detectable with the mediation of language anxiety. It can thus be concluded that the link between personality and aspects of communicative behaviour is likely to be language-dependent, suggesting that it may be necessary to apply more refined research models when assessing L2 effects.

Key words: personality, neuroticism, communication apprehension, language anxiety, willingness to communicate

1. Introduction

People behave in radically different ways. In the communication domain, concerning both first (L1) and second (L2) language, there is a profound interest in how individual differences may affect the very process of language learning. Even though it has been demonstrated that some broad personality traits influence various aspects of interpersonal communication (e.g., Dewaele & Furnham 2000, Frederickx & Hofmans 2014), there is still relatively little research concerning the link between personality and how people use various languages in their repertoires. This article addresses this gap by researching the relationship between the personality trait of neuroticism and language-specific forms of willingness to communicate (WTC), i.e., L1 and L2 WTC. This question is triggered by the fact that a link between neuroticism and WTC has been observed in L1 contexts, but so far, L2 studies have not been able to unanimously confirm it (e.g., Adelifar et al.

2016, Pavičić Takač & Požega 2012, Oz 2014). For this reason, the basic aim of this study is to further investigate the relationship between neuroticism and L1/L2 WTC by means of independent mediation models. In this study, the role of mediating variables is assigned to language-specific forms of anxiety (communication apprehension – CA referring to the L1 context, and language anxiety referring to L2–LA). We suspect that anxiety may meaningfully explain the link between neuroticism and WTC due to the anxiety-related nature of all the researched concepts: neuroticism, L1/L2 WTC, CA and LA. To our knowledge, there have been no studies comparing these factors across L1 and L2 contexts with the use of mediation analysis. Since it allows for capturing relationships that otherwise might be undetected, we hope that mediation analysis might offer a novel (at least in SLA) solution to old problems.

2. Neuroticism and L1 communication-related constructs

The personality trait of *neuroticism* is one of the five higher-order domains in the Five Factor Model (Costa & McCrae 1992). It is defined as “the general tendency to experience negative effects such as fear, sadness, embarrassment, anger, guilt, and disgust” (ibid.: 14). It is also described as an enduring tendency to experience negative emotional states (Widiger 2017) because it reflects “individual differences in tendencies toward negative affect (including sadness, anxiety, and anger)” (Tackett & Lahey 2017: 5). The six facets that define neuroticism are anxiety, hostility, depression, self-consciousness, impulsiveness and vulnerability (ibid.). The relationship between neuroticism and anxiety is strong and meticulously researched (Vittengl 2017) due to its debilitating effect on cognitive processing and attentional control (Berggren & Derakshan 2013). Consequently, neurotic people are more prone to experience negative emotions because they respond poorly to environmental stress and interpret many situations as threatening or overwhelming (Widiger 2009). They also report a variety of problems, such as apprehension, anxiety, and negative self-image (Weaver III 2005). In contrast, people with low levels of neuroticism are emotionally stable, calm, and able to cope well with stress (Haslam et al. 2017).

Neuroticism has also been observed to have certain effects on communication processes (Beatty et al. 1998). For example, it has been observed that neurotics communicate in a defensive and emotional way (de Vries et al. 2013), employing a self-deception that culminates in impatience, exaggeration, and awkwardness (Weaver III 2005).

When discussing communicative behaviour in L1, it is impossible not to mention one of the most influential variables directly influencing it, which is the *willingness to communicate* variable (WTC). This variable has been defined as “predisposition toward approaching or avoiding the initiation of communication” (McCroskey 1992: 16), i.e., referring to the tendency of an individual to begin communication when free to do so. This inclination to initiate or terminate communication is “a personality-based, trait-like predisposition which is relatively consistent across a variety of communication contexts and types of receivers” (McCroskey &

Richmond 1987: 129). What is more, as neurotic characteristics, such as worry, nervousness, irritability, volatility, and self-pity are likely to hamper one’s readiness to initiate communication, WTC has been found to be negatively associated with neuroticism (McCroskey et al. 2004).

Another communication-related concept is *communication apprehension* (CA). CA is understood as “a broad-based fear or anxiety associated with either real or anticipated communication with another person or persons” (McCroskey 1984: 13), encompassing all communication modes. From the point of view of the trait-state perspective, CA can be viewed as relatively stable across various kinds of situations (Beatty et al. 1998). As such, it is a personality feature associated with higher levels of anxiety in communicative situations (Biggers & Masterson 1984; Wrench et al. 2009). According to McCroskey et al. (1976), high communication apprehensive people are those for whom apprehension about participating in communication outweighs the projected gain from communicating in a given situation. CA is also accompanied by more negative thinking, a greater concern about evaluation, performance, and other self-related issues (McCroskey 2009).

3. Neuroticism and L2 communication-related constructs

Although “communication in foreign languages broadly shares the main skill dimensions of communication in the mother tongue” (European Union 2006), a change of language imposes a ‘dramatic’ transformation on the communication setting (MacIntyre et al. 1998: 546). The powerful interplay of acquiring various communicative, intercultural and social aspects of another language may induce a feeling of lack of control, generating strong feelings of discomfort and anxiety, and making foreign language learning “an emotionally loaded experience” (Dörnyei & Ryan 2015: 10).

Supposing that personality predicts overall patterns of behaviour (Sherman et al. 2010), a likely assumption is that the context of learning and using a foreign language should reflect general behavioural tendencies. Nevertheless, the study of the role of neuroticism in the Second Language Acquisition (SLA) field demonstrates inconclusive results regarding differences between L1 and L2 use. On the one hand, some studies suggest that effects associated with neuroticism are more accentuated in L2 speech (Zárate-Sánchez 2017). Neurotics lack self-confidence, which has been shown to affect their foreign language use (Khany & Ghoreyshi 2013) and effective strategy implementation, regardless of age (Ghyasi et al. 2013; Nikolov & Djigunovic 2006). It has also been found that neurotic students have problems concerning foreign language learning self-regulation (Studenska 2011), which hinders their motivation and learning. On the other hand, there are also studies that fail to prove the negative role of the trait in the SLA domain, such as the one by Dewaele (2007a), where no significant effect of Neuroticism on L2, L3 and L4 foreign language grades (i.e., composite measures of written and oral performance) has been detected.

As in L1 communication, people vary in their readiness to engage in conversation. For this reason, L2 WTC, defined as “a readiness to enter into

discourse at a particular time with a specific person or persons, using a L2”, is now considered an extremely influential variable underlying second and foreign language learning processes (MacIntyre et al. 1998: 547). An important point here is that despite the apparent similarity between L1 and L2 WTC concepts, they are independent constructs.

Regardless of the trait-like nature of the L1 WTC construct, L2 WTC can also be conceptualized at both state and trait levels. The state perspective has gained momentum recently due to the popularity of the dynamic systems approach, which requires the application of a specific per-second timescale, catering for rapid changes caused by combined immediate influences (MacIntyre 2020). However, for the purpose of this research, which was designed for a different timescale (a long-term process), L2 WTC is conceptualized as a stable communication tendency that might be identified over time with a class of situations (i.e., learning and using a foreign language in the classroom context). This stable communication tendency points to its trait-like character, rooted in personality, as clearly seen in the pyramid model of L2 WTC (MacIntyre et al. 1998).

It is unclear what dimensions of personality might be linked to willingness to communicate (Ożańska-Ponikwia & Dewaele 2012), yet it can be expected that an individual’s personality profile exerts a “permanent and unwavering, though subtle effect on L2 WTC” (Piechurska-Kuciel 2018: 191). As far as the relationship between neuroticism and L2 WTC is concerned, scarce research results can be found in the literature of the field. Both a direct and positive (Adelifar et al. 2016), as well as indirect relationship has been reported (MacIntyre et al. 1999). Emotional stability (the opposite end of the neuroticism continuum) has been found to be related to WTC through CA and perceived language competence (MacIntyre et al. 1999). Similarly, MacIntyre and Charos (1996) have demonstrated a relationship between the two constructs through perceived language competence, CA, and motivation. To complicate matters further, Pavičić Takač and Požega (2012), like Oz (2014), found that neuroticism was not related to L2 WTC in Croatian and Turkish samples. It is also worth noting that in the study by Zhang, Beckman and Beckman (2020), no significant correlations between neuroticism and L1/L2 WTC were established.

Understandably, anxiety represented by CA is quite stable across various language-speaking contexts (Jung & McCroskey 2004), which points to its universal, trait-like character. However, the specific situation of learning and using a foreign language leads to the emergence of another, unique type of anxiety (situation-specific), i.e., foreign language anxiety (LA), which is “defined over time within a situation” (MacIntyre 2007, p. 565). This anxiety type can be conceptualized as “a distinct complex of self-perceptions, beliefs, feelings and behaviors related to classroom learning arising from the uniqueness of the language learning process” (Horwitz, Horwitz, & Cope 1986: 128). This definition points to the situation-specific character of LA, which is constructed as an effect of repeated episodes of state anxiety experienced in the long-term process of foreign language learning that solidify into an independent anxiety type that might not be experienced

in other types of situations.

MacIntyre and Charos (1996) noted that the individuals with lower emotional stability might be more prone to language anxiety. Some other studies (Dewaele 2002, 2007b, 2013) have also reported a link between neuroticism and foreign language anxiety. In line with previous studies, Şimşek and Dörnyei (2017) confirmed a strong positive link between neuroticism and language anxiety variables, which indicated that the stronger someone's general anxiety tendency is, the more likely he/she is to realize it in the language classroom setting. In other words, emotionally stable individuals likely suffer less from language anxiety. One of the studies (Wang 2010) that focused on the effect of personality variables on LA found that learners with higher levels of English-speaking anxiety scored higher on trait anxiety (which is one of six specific facets of neuroticism), as well as on an unwillingness to communicate with others. As noted by Daubney, Dewaele & Gkonou (2017), the effects of language anxiety are numerous and grievous; from raising self-doubt, and lowering competence and self-esteem, through diminishing enthusiasm and motivation, to hindering academic success, and weakening WTC, as presented in Dewaele and Pavelescu (2019) (for a thorough overview of the empirical research on language anxiety see Dewaele 2017).

4. Research rationale

Given the relative lack and inconsistency of research on the role of personality in the L2 context, this article contributes to shedding light on the role of neuroticism in foreign language learning. The main aim of the paper is to investigate the role of neuroticism in shaping L1 and L2 users' communicative behaviour, represented by the factors of communication apprehension and WTC in the mother tongue. In order to explore this link across languages, the role of anxiety as an affective basis of neuroticism and WTC is acknowledged.

Neuroticism is characterized by a lack of ability to manage emotions. As such, it may further hinder directing attention to ways of facilitating smooth communication, as well as to the social interactions itself (Guo et al. 2018). Individuals with high neuroticism levels may consider such situations as a source of threat and unpredictability, which leads to greater negative affect represented by anxiety, which may in turn induce a tendency to avoid communication. It follows that neuroticism may be regarded as a universal risk factor for experiencing elevated levels of anxiety reactions at inter- and intra-individual levels concerning communicative situations (Hong 2010). Consequently, anxiety is considered an important basis of this personality trait (Pervin 1989), and a meaningful indicator of WTC because the willingness to initiate free communication is closely associated with lack of anxiety (McCroskey et al. 2001). Based on these assumptions, we expect that the relationship between neuroticism and WTC can be meaningfully explained by the mediation of anxiety.

In the case of L1 communication anxiety, defined as communication apprehension (CA), this concept is mainly connected to neuroticism through its fear and anxiety component (Neuliep et al. 2003). It has also been pointed out that the

level of an individual’s communication apprehension is “probably the single best predictor of his or her willingness to communicate” (McCroskey & Richmond 1987: 142), as well as “the most potent of the antecedents of willingness to communicate” (ibid.). Nevertheless, WTC and CA are not mutually exclusive concepts – they overlap to a certain extent, though WTC has been seen as the direct opposite of communication apprehension (Wrench et al. 2008).

In this study, we expect that the mediating role of CA in the neuroticism-WTC relationship will confirm the negative impact of this personality trait by exposing the input of anxiety. Our first hypothesis is as follows:

H1: *The relationship between neuroticism and L1 WTC is mediated by communication apprehension.*

Aside from addressing this hypothesis, our study also aims to examine the specific effect of neuroticism on the L2 communication-related factor of WTC. We expect that the genuine impact of neuroticism on L2 WTC may be detected by the mediating effect of language anxiety. As described earlier in this article, the research results observed in the L1 context have not been replicated in L2, where only subtle (if any) effects of neuroticism on L2 WTC have been detected (Piechurska-Kuciel 2018). Moreover, it is important to highlight that, to date, no form of anxiety has been controlled for in most L2 studies investigating various aspects of neuroticism (e.g., Adelifar et al. 2016, Pavičić Takač & Požega 2012, Oz 2014), which has possibly prevented detecting a possible ‘ripple effect’ of neuroticism on foreign language learning attributed to the activation of anxiety (Kao et al. 2015). Assuming that the impact of personality traits on behaviour is ubiquitous and stable (Roberts et al. 2007), it appears that the change of language may significantly reduce the chance to observe this relationship. For this reason, we expect that even when the real impact of neuroticism on L2 WTC cannot be detected directly, it can be exposed with the help of a language-specific form of anxiety (language anxiety). That is, given the strong anxiety-related basis of both concepts, the anxiety-related properties of neuroticism may show pronounced links with language anxiety affecting the quantity and quality of L2 output (i.e., L2 WTC). Hence, the direct negative influence of language anxiety on communicative behaviour (Tóth 2017) may also be revealed in the predictive value of LA for L2 WTC levels (Piechurska-Kuciel 2015), which leads us to our second hypothesis:

H2: *The relationship between neuroticism and L2 WTC is mediated by language anxiety.*

5. Method

5.1 Participants

The participants in this study were 621 students from 23 randomly selected classes of six secondary grammar schools in Poland. The cohort was composed of 396 girls and 225 boys (mean age: 18.50, range: 18–21, SD=.53). When the research project commenced, these students were in first grade, with three to six hours a week of compulsory English instruction. At the end of their secondary school education, their level of proficiency was intermediate to upper intermediate, reflecting the B1+

level of competence in the Common European Framework of Reference for Languages (CEFR). The average length of their English language experience amounted to almost 11 years, the vast majority (above 90%) studying for 7 to 17 years. Apart from English, the students also studied another compulsory foreign language: French or German (2 to 4 lessons a week). The participants came from different residential locations, mostly urban (259 of them from a city in the south-west of Poland, 103 from neighbouring towns), with 133 students from rural areas.

5.2 Instruments

The basic instrument adopted was a questionnaire with demographic variables: age, gender (1 – *male*, 2 – *female*), and place of residence (1 – *village: up to 2,500 inhabitants*, 2 – *town: from 2,500 to 50,000 inhabitants*, 3 – *city: over 50,000 inhabitants*).

The participants' neuroticism was measured with the 20-item International Personality Item Pool representation of the Goldberg's markers for the Big-Five factor structure, called the IPIP scale (Goldberg 1992). The IPIP scale consists of 20 items with ten positively and ten negatively worded items, which were then key-reversed. Responses were given on a 5-point Likert scale, ranging from 1 – *strongly disagree* to 5 – *strongly agree*. The minimum number of points on the scale was 20, while the maximum was 100. The scale's reliability was measured in terms of Cronbach's alpha, ranging the level of .90 (see Appendix 1).

The study also assessed communication apprehension by means of *The Personal Report of Communication Apprehension* (PRCA-24) (McCroskey 1982 in McCroskey et al. 1985) which features 24 items assessing participants' apprehension in the four communication contexts: public speaking, speaking in meetings, small groups, and in dyads. The participants of the study indicated the degree to which they agree with each statement on a Likert scale from 1 – *I strongly agree* to 5 – *I strongly disagree*. The scale's reliability was $\alpha=.82$ in this study (Appendix 2).

Another variable assessed in the present study was willingness to communicate. The scale measuring *Willingness to communicate* in L1 (McCroskey 1997) consisted of 20 items depicting situations in which an individual may choose whether to communicate or not, having a free choice, like talking in a large meeting of strangers or in a small group of friends. The participants indicated what percentage of time they would choose to communicate on a scale of 0-100. The overall WTC score is an average value of the measurement of WTC for strangers, acquaintances and friends together. The scale's reliability in this study was $\alpha=.74$ (Appendix 3).

The informants' *Willingness to communicate* in L2 was measured by means of two scales later aggregated and averaged to assess the global L2 WTC level: *Willingness to communicate in the classroom* and *Willingness to communicate outside the classroom* (MacIntyre et al. 2001). The scales mentioned assessed the students' willingness to engage in communication tasks during class time and outside the classroom in the four skill areas by means of 54 items. The participants

indicated their answers on a Likert scale, within a range from 1 to 5, indicating how willing they would be to communicate in given contexts. 1 indicated *almost never willing*, 2 – *sometimes willing*, 3 – *willing half of the time*, 4 – *usually willing*, and 5 – *almost always willing*. The minimum number of points on the global scale was 27, while the maximum was 135. The scales’ reliability was measured in terms of Cronbach’s alpha, ranging the level of .94 (Appendix 4).

The participants’ L2 anxiety was assessed by means of the *Foreign Language Classroom Anxiety Scale* (Horwitz et al. 1986), which estimated the degree to which students felt anxious during language classes. The Likert scale used ranged from 1 – *I totally disagree* to 5 – *I totally agree*. The minimum number of points was 33, the maximum was 165. The scale’s reliability in this study was $\alpha=.94$ (Appendix 5).

5.3 Procedure

The data collection procedure took place in six grammar schools. After consent had been given by the schools’ headmasters, the classes were randomly selected from the list of eligible classes (three to four in each school depending on availability). In each class, the students were informed about the purpose of the research and granted full confidentiality. They could withdraw from the study at any time, without any consequences. All the participants gave their oral consent and were then asked to fill in the questionnaire. The time given for the activity was 15 to 45 minutes. The participants were instructed to give sincere answers without taking excessive time to think. A short statement introducing a new set of items in an unobtrusive manner preceded each part of the questionnaire.

The data were analysed with IBM SPSS STATISTICS v.25. Descriptive analyses aimed to identify the basic level of the variable analysed. Spearman’s ρ test was used to determine the relationships between the variables. In order to verify the hypothesis 1 about the mediating role of communication apprehension in the relationship between Neuroticism and L1 WTC, and the hypothesis 2 about the mediating role of language anxiety in the relationship between Neuroticism and L2 WTC, two mediation analyses using the PROCESS v3.2 macro (Hayes 2017) were performed. To estimate the mediation effects, the bootstrap method was used for 5000 trials. Bootstrapping is a resampling method, replicating the original sample with replacement in order to create many simulated samples. This procedure allows to perform hypothesis testing of many possible values in the population in a broader context, increasing the reliability of the results. Moreover, the obtained confidence intervals were bias corrected. A heteroscedasticity consistent standard error and covariance matrix estimator (HC3) was used. Independent variables were centred before analysis. Missing data were omitted in all the analyses, with statistical significance set at .05.

6. Results

The preliminary analysis of the data showed that all the variable analysed reached average values for the measured indicators (Table 1).

Table 1. Descriptive statistics

	N	Min	Max	Mean	SD
CA	621	32.00	103.00	64.34	12.20
Neuroticism	531	20.00	96.00	54.22	15.28
LA	503	36.00	155.00	79.92	22.46
L1 WTC	534	0.00	103.83	62.61	18.04
L2 WTC	491	54.00	283.00	162.46	45.80

Note. CA—Communication Apprehension, LA—Language anxiety, WTC—Willingness to Communicate

In the next step, a correlation analysis was performed.

Table 2. Correlations

	N	(2)	(3)	(4)	(5)
(1) Neuroticism	531	.23**	-.21**	.28**	-.02
(2) CA	621	---	-.30**	.28**	-.19**
(3) L1 WTC	534	---	---	-.21**	.26**
(4) LA	503	---	---	---	-.30**
(5) L2 WTC	491	---	---	---	---

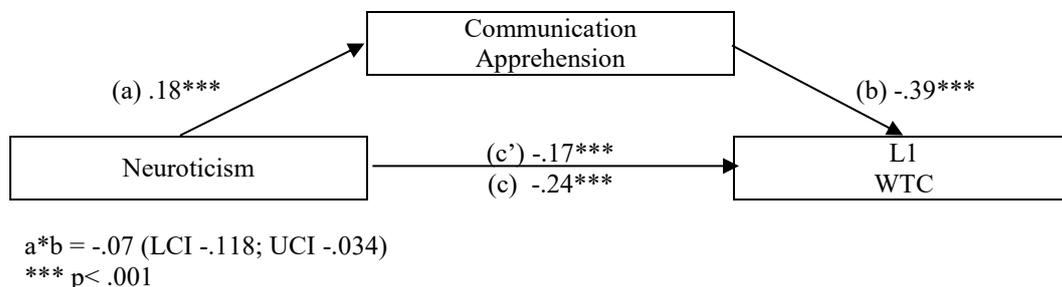
Note. CA—Communication Apprehension, LA—Language anxiety, WTC—Willingness to Communicate

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

As shown in Table 2, communication apprehension (CA) and language anxiety (LA) were significantly and positively connected with neuroticism, which means that higher levels of neuroticism were related to higher levels of CA and LA. However, this link was relatively weak. Further, higher levels of neuroticism were related to lower L1 WTC but, again, this relationship was relatively weak, though significant. Communication apprehension (CA) was negatively connected with L1 and L2 WTC. The participants with higher levels of CA demonstrated lower evaluation of the variables mentioned. The only positive, though relatively weak, relationship was between CA and LA. Language anxiety (LA) had negative links with almost all of the analysed factors. The participants with a higher level of LA demonstrated lower levels of L1 and L2 WTC.

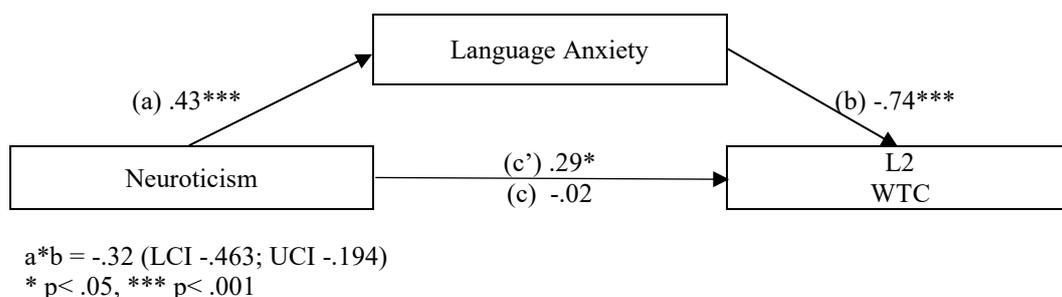
Another step in the data analysis focused on implementing the mediation model concerning the role of communication apprehension in the relationship between neuroticism and L1 WTC. The investigation of H1 concerning the mediating role of communication apprehension (CA) in the relationship between neuroticism and L1 WTC showed that CA was a significant mediator (c'). The influence of neuroticism on L1 WTC was not direct but was mediated by CA with a significant but small effect size (see Fig. 1 for a summary of the results).

Figure 1. The mediation model of CA on the relationship between neuroticism and L1WTC



In order to investigate the role of language anxiety (LA) in the relationship between neuroticism and L2 WTC (H2), another mediation analysis was performed (Fig.2).

Fig. 2. The mediation model of LA on the relationship between neuroticism and L2 WTC



The results of the analysis showed that LA was a significant suppressor of this relationship (classical suppression) which demonstrated that the relation of neuroticism with L2 WTC became significant only when LA was included in the model (an indirect effect) with a significant medium effect size.

7. Discussion

The main aim of this study was to examine the role of neuroticism in L1 and L2 willingness to communicate, when mediated by language-specific forms of anxiety (CA and LA, respectively). According to the first hypothesis formulated in reference to the L1 context, *the relationship between neuroticism and L1 WTC is mediated by communication apprehension*. The results fully support the hypothesis. The regression results showed that in the mother tongue context, the researched individuals with higher levels of neuroticism displayed less willingness to communicate (see c-path beta value in Fig. 1). In order to explain the mechanism underpinning the link between the personality trait and L1 WTC, the third variable of communication apprehension was included in the model. The results revealed that there was a significant link between the personality trait and L1 WTC, which was partially explained by communication apprehension (c'-path beta value in Fig. 1). The inclusion of CA in the mediation model pointed to the fact that the

participants' unwillingness was partly caused by communication apprehension. Altogether, these study outcomes confirm previous research, according to which neuroticism is related to CA and L1 WTC through its impact on the anxiety component that constitutes a common denominator for the three researched variables (e.g., Wrench et al. 2009).

The hypothesis formulated for the purpose of researching the L2 context proposed that *the relationship between neuroticism and L2 WTC is mediated by language anxiety*. The results do not immediately support this hypothesis. No direct impact of neuroticism on L2 WTC was identified (see c-path beta value in Fig. 2), which suggests that neuroticism is unrelated to the dependent variable (L2 WTC). However, the inclusion of language anxiety in the mediation model demonstrated that a certain type of mediation came into play; in this model it was suppression (c'-path beta value in Fig. 2). The mediation variable augmented the predictive value of the independent variable on the dependent one. Thus, controlling for LA allowed us to estimate the genuine relationship between the independent and dependent variables, and to observe how higher levels of neuroticism were related to a greater impact of LA on WTC. The examination of the relationship between neuroticism and L2 WTC, simultaneously with that of LA and L2 WTC thus suggests an indirect link between the personality trait and L2 WTC, enhanced by the inclusion of LA in the model. It appears then that, in spite of the apparent lack of relationship between neuroticism and L2 WTC, students with higher levels of neuroticism were found less likely to initiate communication in L2 (lower levels of L2 WTC) due to their language anxiety levels. Hence, LA could be regarded as one of the main variables responsible for exposing the indirect role of neuroticism in readiness to initiate communication in the foreign language.

In sum, the main aim of this research was to expose the influential role of neuroticism in shaping L2 learners' communicative behaviour as represented by their willingness to communicate, considering the explanatory role of anxiety. It is worth pointing out that this influence, though overt in L1, may not be easily detected in the SLA process. Unsurprisingly then, the change of language of communication may obscure the observation of universal and direct relationships, such as the one between neuroticism and L1 WTC. In this study, however, a third variable (language anxiety) is used to explain the observed relationship in the L2 context, which might otherwise seem non-existent (c-path beta value in Fig. 1).

The study is not free from limitations. Although the mediation model applied in this research is regarded as causal, no causality inferences can be drawn on its basis because the design was descriptive and not experimental. Also, the potential for generalizability is low. It should also be pointed out that WTC may largely be culture-dependent, so conclusions drawn for reticent cultures (e.g., Chinese) may be tainted. The nature of the L1-L2 relationship may also have a significant influence on the magnitude of WTC. Also, neuroticism may have a geographical or cultural orientation (Eap et al. 2008), while its measurement with the IPIP scale still requires standardization. The study would greatly benefit from applying the perspective of a complex, dynamic approach that offers interesting insights on

individual behaviour in particular situations, revealing an intricate web of individual and social factors (MacIntyre 2020).

To us, the findings of the study suggest at least two interesting avenues for future research. First, there is a need to examine the mediation processes of other influential variables that may explain the genuine impact of personality on the quality and quantity of the foreign language process. This approach may allow for reassessing the genuine role of such universal factors as personality. Second, a promising research path can be found in the incorporation of various operationalizations of foreign language attainment, like final grades, GPA, and other forms of summative and formative assessment.

8. Concluding remarks

It appears that the function of the personality factor of neuroticism in shaping communicative behavior in the mother tongue and foreign language cannot be regarded as equally defined. Consequently, the results of our findings may explain the reasons for the general confusion regarding the conflicting results (see Section 3 of this paper) connected with the impact of neuroticism on the process of foreign/second language acquisition. Despite the fact that the influence of personality on behaviour can be difficult to observe in general (Burns & Christiansen 2011), this study has shown that direct links of neuroticism with a willingness to communicate can be formulated. However, equally clear links could not be found for the L2 context. Instead, an indirect relationship could be established. This finding is in line with the pyramid model of L2 WTC proposed by MacIntyre, Dörnyei, Clément and Noels (1998), which places personality at the lowest and most distal layer of L2 WTC influences. It may be concluded that clear-cut relationships observed in the mother tongue context may appear less pronounced and explicit in L2 situations due to a plethora of other factors, among which the change of language may be regarded as crucial. It is also possible that personality factors may play a greater role in communication in L1 than in L2, but at the same time, it can be concluded that the relationships between L2 WTC and personality are more complex. This situation requires further research interest.

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Appendix 1

The 20-item International Personality Item Pool measuring Neuroticism (Goldberg 1992)

1. Often feel blue. (+keyed)
2. Dislike myself.
3. Am often down in the dumps.
4. Have frequent mood swings.
5. Panic easily.
6. Am filled with doubts about things.
7. Feel threatened easily.
8. Get stressed out easily.
9. Fear for the worst.
10. Worry about things.
11. Seldom feel blue. (– keyed)
12. Feel comfortable with myself.
13. Rarely get irritated.
14. Am not easily bothered by things.
15. Am very pleased with myself.
16. Am relaxed most of the time.
17. Seldom get mad.
18. Am not easily frustrated.
19. Remain calm under pressure.
20. Rarely lose my composure.

Appendix 2

The Personal Report of Communication Apprehension (PRCA-24) (McCroskey 1982 in McCroskey et al. 1985)

1. I dislike participating in group discussions.
2. Generally, I am comfortable while participating in group discussions.
3. I am tense and nervous while participating in group discussions.
4. I like to get involved in group discussions.
5. Engaging in a group discussion with new people makes me tense and nervous.
6. I am calm and relaxed while participating in group discussions.
7. Generally, I am nervous when I have to participate in a meeting.
8. Usually, I am comfortable when I have to participate in a meeting.
9. I am very calm and relaxed when I am called upon to express an opinion at a meeting.
10. I am afraid to express myself at meetings.
11. Communicating at meetings usually makes me uncomfortable.
12. I am very relaxed when answering questions at a meeting.
13. While participating in a conversation with a new acquaintance, I feel very nervous.
14. I have no fear of speaking up in conversations.

15. Ordinarily I am very tense and nervous in conversations.
16. Ordinarily I am very calm and relaxed in conversations.
17. While conversing with a new acquaintance, I feel very relaxed.
18. I'm afraid to speak up in conversations.
19. I have no fear of giving a speech.
20. Certain parts of my body feel very tense and rigid while giving a speech.
21. I feel relaxed while giving a speech.
22. My thoughts become confused and jumbled when I am giving a speech.
23. I face the prospect of giving a speech with confidence.
24. While giving a speech, I get so nervous I forget facts I really know.

Appendix 3

Willingness to communicate in L1 (McCroskey 1997)

How often are you willing to...

1. Talk with a service station attendant.
2. Talk with a physician.
3. Present a talk to a group of strangers.
4. Talk with an acquaintance while standing in line.
5. Talk with a salesperson in a store.
6. Talk in a large meeting of friends.
7. Talk with a police officer.
8. Talk in a small group of strangers.
9. Talk with a friend while standing in line.
10. Talk with a waiter/waitress in a restaurant.
11. Talk in a large meeting of acquaintances.
12. Talk with a stranger while standing in line.
13. Talk with a secretary.
14. Present a talk to a group of friends.
15. Talk in a small group of acquaintances.
16. Talk with a garbage collector.
17. Talk in a large meeting of strangers.
18. Talk with a spouse (or girl/boyfriend).
19. Talk in a small group of friends.
20. Present a talk to a group of acquaintances

Appendix 4

Willingness to communicate in the classroom (MacIntyre et al. 2001)

How often are you willing...

Speaking in class, in English

1. Speaking in a group about your summer vacation.
2. Speaking to your teacher about your homework assignment.
3. A stranger enters the room you are in, how willing would you be to have a conversation if he talked to you first?

4. You are confused about a task you must complete, how willing are you to ask for instructions/clarification?
5. Talking to a friend while waiting in line.
6. How willing would you be to be an actor in a play?
7. Describe the rules of your favourite game.
8. Play a game in English.

Reading in class (to yourself, not out loud)

1. Read a novel.
2. Read an article in a paper.
3. Read letters from a pen pal written in native English.
4. Read personal letters or notes written to you in which the writer has deliberately used simple words and constructions.
5. Read an advertisement in the paper to find a good bicycle you can buy.
6. Read reviews for popular movies.

Writing in class, in English

1. Write an advertisement to sell an old bike.
2. Write down the instructions for your favourite hobby.
3. Write a report on your favourite animal and its habits.
4. Write a story.
5. Write a letter to a friend.
6. Write a newspaper article.
7. Write the answers to a “fun” quiz from a magazine.
8. Write down a list of things you must do tomorrow.

Comprehension in class

1. Listen to instructions and complete a task.
2. Bake a cake if instructions were not in Polish.
3. Fill out an application form.
4. Take directions from an English speaker.
5. Understand an English movie.

Willingness to communicate outside the classroom (MacIntyre et al. 2001)

How often are you willing...

Speaking outside the class, in English

1. Speaking in a group about your summer vacation.
2. Speaking to your teacher about your homework assignment.
3. A stranger enters the room you are in, how willing would you be to have a conversation if he talked to you first?
4. You are confused about a task you must complete, how willing are you to ask for instructions/clarification?
5. Talking to a friend while waiting in line.
6. How willing would you be to be an actor in a play?
7. Describe the rules of your favourite game.
8. Play a game in English.

Reading outside class, in English

1. Read a novel.

2. Read an article in a paper.
3. Read letters from a pen pal written in native English.
4. Read personal letters or notes written to you in which the writer has deliberately used simple words and constructions.
5. Read an advertisement in the paper to find a good bicycle you can buy.
6. Read reviews for popular movies.

Writing outside class, in English

1. Write an advertisement to sell an old bike.
2. Write down the instructions for your favourite hobby.
3. Write a report on your favourite animal and its habits.
4. Write a story.
5. Write a letter to a friend.
6. Write a newspaper article.
7. Write the answers to a “fun” quiz from a magazine.
8. Write down a list of things you must do tomorrow.

Comprehension outside class

1. Listen to instructions and complete a task.
2. Bake a cake if instructions were not in Persian.
3. Fill out an application form.
4. Take directions from an English speaker.
5. Understand an English movie.

Appendix 5

The *Foreign Language Classroom Anxiety Scale* (Horwitz et al. 1986)

1. I never feel quite sure of myself when I am speaking in my foreign language class.
2. I don't worry about making mistakes in language class.
3. I tremble when I know that I'm going to be called on in language class.
4. It frightens me when I don't understand what the teacher is saying in the foreign language.
5. It wouldn't bother me at all to take more foreign language classes.
6. During language class, I find myself thinking about things that have nothing to do with the course.
7. I keep thinking that the other students are better at languages than I am.
8. I am usually at ease during tests in my language class.
9. I start to panic when I have to speak without preparation in language class.
10. I worry about the consequences of failing my foreign language class.
11. I don't understand why some people get so upset over foreign language classes.
12. In language class, I can get so nervous I forget things I know.
13. It embarrasses me to volunteer answers in my language class.
14. I would not be nervous speaking the foreign language with native speakers.
15. I get upset when I don't understand what the teacher is correcting.
16. Even if I am well prepared for language class, I feel anxious about it.

17. I often feel like not going to my language class.
18. I feel confident when I speak in foreign language class.
19. I am afraid that my language teacher is ready to correct every mistake I make.
20. I can feel my heart pounding when I'm going to be called on in language class.
21. The more I study for a language test, the more confused I get.
22. I don't feel pressure to prepare very well for language class.
23. I always feel that the other students speak the foreign language better than I do.
24. I feel very self-conscious about speaking the foreign language in front of other students.
25. Language class moves so quickly I worry about getting left behind.
26. I feel more tense and nervous in my language class than in my other classes.
27. I get nervous and confused when I am speaking in my language class.
28. When I'm on my way to language class, I feel very sure and relaxed.
29. I get nervous when I don't understand every word the language teacher says.
30. I feel overwhelmed by the number of rules you have to learn to speak a foreign language.
31. I am afraid that the other students will laugh at me when I speak the foreign language.
32. I would probably feel comfortable around native speakers of the foreign language.
33. I get nervous when the language teacher asks questions which I haven't prepared in advance.