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Learner-internal psychological factors

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8.1 Introduction

A familiar question among second language learners and second language teachers is why the learning process is a such struggle, leading to limited proficiency for some learners, while others in the same situation seem to breeze through and attain high levels of proficiency in the L2. Instinctively, learners and teachers believe that the cause must be psychological, and that some hidden internal characteristic of the L2 learner predetermines a more or a less successful outcome. Much of the early research in individual differences in SLA has tried to unearth a single source of these differences in order to establish the profile of the good language learner (Naiman, Fröhlich, Stern and Todesco 1978; Rubin 1975). This quest has turned into a search for the holy grail for “researchers, like [King] Arthur’s knights, stumbling through the night, guided by a stubborn belief that something must be there, glimpsing tantalizing flashes of light from a distance, only to discover that their discoveries looked rather pale in the daylight” (Dewaele 2009a: 625).

While the search for psychological independent variables in SLA continues, more and more researchers accept that a dynamic perspective is necessary, acknowledging the complex interplay of independent variables in SLA (Dewaele and Furnham 1999; Dörnyei 2009a, b; Dörnyei and Ushioda 2009). The learner’s psychological profile may play a role, but only in a particular context. Learners have unique previous histories that may, for example, determine their reaction to an L2 class and shape their future trajectories. Research on variation in L2 learners’ performance at a given time and in their progress as learners and users has identified a wide range of factors linked to the individual’s language learning history, his/her current linguistic practices and particular language constellation, and the educational context and the wider sociopolitical context. The driving force behind individual

difference research is thus the quest to identify the interaction between learners' internal psychological characteristics and external factors. Doing so successfully might bring us closer to a Grand Unified Theory of Individual Differences (Dewaele 2009a: 625).

Personality psychology has been a source of inspiration for SLA researchers looking for variables that could be linked to various aspects of L2 learning and production. However, research on SLA and personality presents some obstacles, which might explain why – as we shall see – there are relatively few researchers working in this area. One problem facing both linguists and psychologists is finding an appropriate level of analysis for both the personality and the language variables (Furnham 1990: 92). There is an absence of:

parsimonious, consistent, fruitful theories described specifically for, or derived from, the personality markers of speech... the theories that do exist are frequently at an inappropriate level – too molecular in that they deal specifically with the relationship between a restricted number of selected variables or too molar in the sense that by being overinclusive they are either unverifiable or unfruitful in the extent to which they generate testable hypotheses.

Linguists might feel confused by the multiplicity of theories in the field of personality research, and have difficulty accessing the personality questionnaires because they are usually not available in the general domain. The few researchers who have ventured into this area of research have combined a wide variety of independent and dependent variables, often defined differently from study to study, which has produced mixed results and makes the interpretation of the findings difficult (Dörnyei 2005).

The present chapter is organized as follows: I will start by briefly reviewing the main findings in SLA research on attitudes and motivation, which could be described as a combination of learner-internal and learner-external factors. As this area of inquiry is vast, I will restrict myself to the major developments, without going into the specifics of individual studies (see Dörnyei and Ushioda 2009 for an excellent overview). I will then look at the SLA literature on learner-internal characteristics and focus on language talent and aptitude, working memory and short-term memory, and the transfer of first language skills to the L2. In the third and final section I will look in some detail at studies that have linked language production with personality traits: four so-called super-traits (Extraversion (which has attracted most attention in SLA research), Neuroticism, Conscientiousness and Openness-to-Experience) and two so-called lower-order personality traits connected to Foreign Language Anxiety (FLA, Trait Emotional Intelligence and Perfectionism). Finally, I will propose some tentative conclusions about the role of psychological factors in SLA research.

8.2 Language attitudes and motivation

SLA researchers point to concepts such as motivation (including attitude), investment or desire as being at the heart of success in foreign language learning. Yet these are not stable personality traits, as they might appear and disappear, even over a short time span. The work of Gardner and Lambert (1972) and Gardner (1985) is generally considered to be the seminal work in SLA (MacIntyre 2007). To begin with, Gardner (1985) defines attitude as “an evaluative reaction to some referent or attitude object, inferred on the basis of the individual beliefs or opinions about the referent” (1985: 9). Attitudes form part of language learning motivation, which is defined as “the combination of effort plus desire to achieve the goal of learning the language plus favorable attitudes toward learning the language” (Gardner 1985: 10). Gardner’s socio-educational model is grounded in the social environment: it articulates the impact of larger social forces such as intergroup attitudes, cultural identification and familial influence on the L2 learning process (Gardner 1985, 2010; MacIntyre, Clément, Dörnyei and Noels 1998). Learners’ motivation and levels thereof do not emerge in a vacuum; they originate, are influenced and are maintained by attitudes towards the learning situation and so-called integrative orientation, i.e. that which reflects “a sincere and personal interest in the people and culture represented by the other group” (Gardner and Lambert 1972: 132), which, combined with “favorable attitudes toward the language learning situation and a heightened motivation to learn the language” (Gardner 2010: 202) is argued to lead to better results in the L2 compared to peers with lower levels of integrativeness.

Motivation can also be supported by so-called instrumentality, i.e. “conditions where the language is being studied for practical or utilitarian purposes” (Gardner 2006: 249). Learners with high levels of instrumental orientation or motivation also tend to score better than those with lower such levels on L2 proficiency measures (Gardner 2006). It is the integrative motivation concept that has been most hotly debated in discussions on motivation with some researchers defending a strong version of the concept, namely social identification and integration and others defending a weak version, namely a sense of affiliation and interest.

Ideally, motivation should explain why a given person opts for certain actions, and how long and how hard that person is willing to persist at certain activities (Dörnyei and Skehan 2003: 614). Yet after three decades of research on motivation, Dörnyei (2001: 2) noted that it is “one of the most elusive concepts in the whole of social sciences” because it is a multifaceted, complex and composite construct: some components are more trait-like and others are more state-like and situation-specific (Dörnyei 2006: 50).¹ In the 1990s, a number of researchers had already started challenging aspects of Gardner’s model, defending a more situated approach

to the study of motivation (Crookes and Schmidt 1991; Dörnyei 1994; Oxford and Shearin 1994). Dörnyei argued for a stronger focus on the influence of the immediate learning context on learners' overall disposition and the effect of this motivation on concrete learning processes within a given classroom context (Dörnyei 1994). Towards the end of the 1990s, Dörnyei drew closer attention to the temporal/process aspects of motivation (Dörnyei and Otto 1998) and later presented motivation as a "dynamic system that displays continuous fluctuation, going through certain ebbs and flows" (Dörnyei 2006: 51).

Since the mid 2000s, Dörnyei has turned to new approaches to attitudes and motivation, abandoning Gardner's concept of integrativeness. This was prompted by the realization that the concept of integrative orientation is hard to apply when there is no specific group of speakers (Ushioda and Dörnyei 2009: 3), and that at least for English as a global lingua franca, it no longer belongs to the different groups of native speakers of English. An alternative interpretation would be that the recognition of English's role as a lingua franca did not fit conventional understandings of integrativeness and came as a result of continued efforts to reconsider integrativeness, rather than being the spur for those efforts. Ushioda and Dörnyei point to Yashima's (2002) revised notion of integrativeness, namely "international posture," as being better adapted to the new status of English. She defines it with reference to Japanese learners of English as "interest in foreign or international affairs, willingness to go overseas to stay or work, readiness to interact with intercultural partners, and . . . openness or a non-ethnocentric attitude toward different cultures" (Yashima 2002: 57). Kormos and Csizér (2008) conclude that integrativeness is also a problematic construct in Hungary, where very few learners have direct contact with native speakers of English and instead learners' attitudes and motivation are shaped through media products and through the perceived importance of contact with foreigners (Csizér and Kormos 2008).

Dörnyei and colleagues have drawn on the psychological theory of "possible selves" to focus more on the learner's self-concept and identification aspects (Csizér and Dörnyei 2005; Dörnyei 2005). A learner imagines an Ideal L2 Self, which is the representation of all the attributes that that person would like to possess, including the mastery of an L2. The learner also develops an Ought-to L2 Self, having the attributes that that person believes one should possess. L2 motivation can then be seen as the desire to reduce the perceived discrepancies between the learner's actual self and his/her ideal or ought-to L2 selves: "A basic hypothesis is that if proficiency in the target language is part and parcel of one's ideal or ought-to self, this will serve as a powerful motivator to learn the language because of our psychological desire to reduce the discrepancy between our current and possible future selves" (Ushioda and Dörnyei 2009: 4). Motivation is also linked to a third dimension,

L2 Learning Experience, which concerns situation-specific motives related to the immediate learning environment and experience (Dörnyei 2006).

While most work on attitude and motivation has been carried out with a cross-sectional design using quantitative methodology, some researchers, such as Ushioda (2001), have carried out longitudinal qualitative studies. The latter have shown that motivation for learning a foreign language is linked to various dimensions such as academic interest, language-related enjoyment, desired levels of L2 competence, personal goals, positive learning history, personal satisfaction, feelings about countries or people where the L2 is spoken as well as to external pressures. Ushioda (2001) thus sees motivation not as a cause or the product of specific learning experiences but rather an ongoing, dynamic process. Indeed, learners' preferences for specific teachers or methods can affect their motivation over a period of years and the need for more such longitudinal research into motivation has been noted by Woodrow (2012). Woodrow thus argues that "to get a deep insight into the dynamic and shifting nature of motivation longitudinal and in-depth qualitative studies are necessary." In addition, successful L2 learners typically engage more often in intrinsic motivational processes, rather than being externally regulated by the teacher. They take control of their affective learning experience, see themselves as agents of the processes that shape their motivation to sustain their involvement in language learning (Ushioda 2001, 2008). This finding echoes Rubin's (2008) observation that the good language learner is able to self-manage. Less successful learners focus more on external incentives and blame factors beyond their control for their lack of progress (Ushioda 2001, 2008). A related concept is self-efficacy, i.e. people's beliefs in their capabilities to perform in ways that give them some control over events that affect their lives (Bandura 1999). Self-efficacy has been described as an important component of motivation (Hu and Reiterer 2009; Ushioda 2012).

Several researchers working in the postmodernist tradition have criticized traditional social psychological L2 motivation research (see also [Chapter 11](#), this volume). Norton (2000: 4) argues in favor of a comprehensive theory of identity that integrates the language learner and the language learning context. She proposes the notion of investment of learners in an L2, their effort being sustained by the understanding that the acquisition of a wider range of symbolic and material resources will enhance their cultural capital, their identity and their desires for the future. Pavlenko (2002) has criticized the monolingual and monocultural bias of social psychological approaches to L2 motivation which imply a view of the world in terms of "homogeneous and monolingual cultures, or in-groups and out-groups, and of individuals who move from one group to another" (Pavlenko 2002: 279). Kramsch (2009a) argues that more attention needs to be devoted to the subjective aspects of SLA where for some learners the desire to learn a new language reflects "the urge to escape from a state of tedious conformity with one's present

environment to a state of plenitude and enhanced power” (2009a: 14). Other learners, however, have “a deep desire not to challenge the language of their environment but to find in the foreign words a confirmation of the meaning they express in their mother tongue” (2009a: 15).

Dewaele (2010: 132) reported the importance of random events in triggering the desire or motivation to learn a new language. The fictional character, originally published in German in 2004 and in English in 2008, Raimund Gregorius (in Pascal Mercier’s *Night Train to Lisbon*), a Swiss-German teacher of Latin, ancient Greek and Hebrew with little interest in modern languages, experiences such an unexpected trigger event one morning on his way to school. A mysterious woman is about to jump off a bridge in the driving rain. He manages to bring her to her senses and after a short conversation in French, he finds out that she is a native speaker of Portuguese. The way she pronounces “*Português*” enchants him: “The *o* she pronounced surprisingly as a *u*; the rising, strangely constrained lightness of the *é* and the soft *sh* at the end came together in a melody that sounded much longer than it really was, and that he could have listened to all day long” (2008: 7). His infatuation with Portuguese starts right there. He hones his nascent skills at home with a record of a Portuguese language course, repeating “the same sentences again and again to narrow the distance between his stolid enunciation and the twinkling voice on the record” (2008: 22). His rapid progress triggers a second epiphany: “*Português*. How different the word sounded now! Before it had possessed the magic of a jewel from a distant inaccessible land and now it was like one of a thousand gems in a palace whose door he had just pushed open” (2008: 23). Gregorius takes the night train to Lisbon, where he is forced to rely entirely on his beginner’s Portuguese in order to trace the author of a book he bought earlier in his hometown. He controls his communicative anxiety in Portuguese and becomes both braver and wiser in the process. His sudden passion for Portuguese could be described as a desire, an investment, a high motivation, combined with a social and geographical displacement. The enthusiasm at his new-found skills liberates him from self-imposed limitation and alters his sense of self.

Postmodernists (and others) point out that moving to the target language country is not sufficient in itself to boost learners’ language skills. For example, the uniqueness of the study abroad experience is linked to very different linguistic outcomes. Kinginger (2008, 2009) found that the huge interindividual differences in grammatical and sociolinguistic competence of her American students’ after their stay in France were linked to material conditions (lodged in dormitories with other foreign students or housed with guest families) but also to their life histories, aspirations, commitment and psychological factors such as gregariousness and self-image.

In sum, postmodernist researchers reject what they perceive to be the simplistic explanations of complex phenomena in SLA by social psychologists, and they defend a more socially situated, emic perspective, where learners are crucial witnesses of their own learning process over a period of time. It

is this perspective that helps researchers understand individual differences in language learning achievement.

One question that arises from the observation of large amounts of variation in levels of L2 motivation/investment is whether this is linked to nature or nurture. Krashen (1981) argued in favor of nature, postulating that personality variables are linked to motivational variables under his Affective Filter. Learners with an analytic orientation are expected to have a more favorable attitude toward the general learning context and Krashen also predicted that learners with an outgoing personality, high self-esteem and low anxiety would be more successful in SLA (lowering the Filter). The latter was confirmed by Ożańska-Ponikwia and Dewaele (2012). No link seems to exist between L2 motivation and personality (Dewaele 2005b: 127), but it is possible that some aspects of personality might make learners more or less prone to experience a trigger event that might ignite a sudden passion for a new language. Such an event could be the fortuitous encounter with a speaker of a foreign language (such as Gregorius' encounter with Portuguese described above), or any cultural object that suddenly sparks an interest in that language and culture.

8.3 Language talent and language aptitude

8.3.1 The talented L2 learner

Jilka (2009) notes that the idea that a certain talent is innate and therefore reflected in a person's biological makeup is relatively straightforward when it refers to purely physical talent (see [Chapter 20](#), this volume). However, the idea that non-physical abilities such as L2 learning could be linked to the brain is not as widely accepted, despite being a logical extension of this line of reasoning (Jilka 2009: 2). Do some people have a gift for languages? Dörnyei and Skehan (2003: 590) define language learning aptitude as a "specific talent for learning . . . languages which exhibits considerable variation between learners." The problem is that compared, for example, to musical, logical or spatial talent, foreign language talent consists of different independent linguistic skills and cannot be measured by a single instrument (see [Chapter 6](#), this volume). Having language talent might involve a number of seemingly unrelated cognitive factors that interact and determine a learner's overall capacity to master a second language (Dörnyei 2006: 46). Language aptitude in itself does not predict whether or not a person is able to learn a second language, it merely predicts "the rate of progress the individual is likely to make in learning" (Dörnyei 2006: 43) under optimal conditions. When the conditions are good, learners with higher levels of talent or ability will be more successful language learners (Gardner 2006: 241). Robinson (2002c) has focused specifically on the interaction between an individual's aptitude (defined as the sum of lower-level abilities, so-called aptitude complexes,

which can be grouped into higher-order cognitive abilities) and the learning situation/conditions:

Profiling individual differences in cognitive abilities, and matching these profiles to effective instructional options, such as types of pedagogic tasks, interventionist focus on form techniques, and more broadly defined learning conditions, is a major aim of pedagogically oriented language aptitude research. (Robinson 2002c: 113)

Robinson thus views L2 learning aptitude as a highly complex and dynamic construct where clusters of learner variables interact with a range of L2 learning tasks and teaching techniques.

A number of neurobiologists in the late 1980s started looking for physical and chemical evidence of language talent in the brain of exceptional language learners. Geschwind and Galaburda (1985), for example, linked pathological (exceptional) language talent to the increased growth of particular brain areas (triggered by the delayed growth of others). Schneiderman and Desmarais (1988) argued that superior neurocognitive flexibility is helpful in SLA because the system established for L1 must be bypassed by the learner. To acquire L2 pronunciation, for example, learners need to bypass established motor pathways in order to control articulatory movements. Language talent has also been linked to specific brain anatomy or greater brain plasticity in talented individuals (de Bot 2006). Mechelli *et al.* (2004) and Golestani, Molko, Dehaene, LeBihan and Pallier (2006) have reported physical differences between the brains of bilingual learners and those of monolingual controls. Bilingual learners had greater grey matter density in the inferior left parietal cortex, a region of the brain which has been shown by functional imaging to become activated during verbal-fluency tasks. However, it is unclear whether this is the consequence of the learning of a new language, or a pre-existing characteristic of the brain affecting aptitude. Hu and Reiterer (2009) are confident that future brain imaging research on the relationship between personality and language aptitude will “provide the chance to directly map brain anatomy and activities onto psychological phenomena” (2009: 102).

Other cognitive abilities may play a role in SLA. Slevc and Miyake (2006) looked at the effect of musical ability on SLA. Their dependent variables represented four domains of L2 ability: receptive phonology, productive phonology, syntax and lexical knowledge. The independent variables included age of L2 immersion, patterns of language use and exposure, and phonological short-term memory. The authors used hierarchical regression analyses to determine if musical ability explained any unique variance in each domain of L2 ability after controlling for other relevant factors. They found that musical ability predicted L2 phonological ability (both receptive and productive) even when controlling for other factors, but did not explain unique variance in L2 syntax or lexical knowledge. L2 learners with musical skills may thus only have an advantage in the acquisition of L2 sound structure.

Nardo and Reiterer (2009) have also investigated the link between musicality and phonetic language aptitude. Statistical analyses revealed significant positive correlations between musicality and L2 productive phonetic talent (as measured by a pronunciation talent score) as well as the aptitude for grammatical sensitivity (as measured by the Modern Language Aptitude Test). The rhythm subscore, followed by the pitch discrimination score and the self-evaluated singing scores correlated positively with all the language measures.

8.3.2 Working memory and short-term memory

Dörnyei (2005) has described the SLA research into the relationship between working memory (WM) (which involves “the temporary storage and manipulation of information that is assumed to be necessary for a wide range of complex activities” (Baddeley 2003: 189)) and learning as “one of the most promising current directions in language aptitude studies” (Dörnyei 2005: 56; see also [Chapter 6](#), this volume). Dörnyei (2005) singles out the verbal component of Baddeley’s model of WM, namely the phonological loop, which he considers “to be an ideally suited memory construct for SLA” (Dörnyei 2005: 55). WM is typically operationalized as the ability to mentally maintain information in an active and readily accessible state while concurrently and selectively processing new information. Short-term memory (STM) is often operationalized as a sort of static memory that holds information for a short period of time (less than 20 seconds). It is the mechanisms of executive control that differentiate WM from STM (Baddeley 2003).

Both Robinson (2003) and Skehan (1998) have concluded that memory ability plays a crucial role in SLA after reviewing the literature on “good” to “exceptional” language learners: “Exceptionally successful foreign language learners consistently seem to be characterised by the possession of unusual memories, particularly for the retention of verbal material” (Skehan 1998: 233). Indeed, capacity in WM is the central component of language aptitude according to Miyake and Friedman (1998: 339). They point to the literature showing a link between L1 WM capacity and both L2 WM capacity and L2 language comprehension skills and acquisition. Their own empirical study with native speakers of Japanese who were advanced learners of English showed that a higher WM capacity was linked to the acquisition of appropriate linguistic cues and better comprehension of complex sentence structures in the L2 (1998: 361). Robinson (2002c) has also underlined the striking correlation between WM capacity and L2 proficiency.

To illustrate how this works, we can refer to Biedroń and Szczepaniak (2009), who present a cognitive profile of “Ann,” a highly talented 21-year-old trilingual Polish learner of Japanese. The results show particularly high scores in the area of phonological, analytical and memory abilities. She did not prefer any particular learning strategy but had very positive attitudes towards Japanese, was highly motivated and she did not feel anxious, or

inhibited when speaking a foreign language (2009: 15). Biedroń (to appear) then investigated the link between aptitude and WM–STM among Polish foreign language learners. She compared the results of twenty-three high-ability learners (who knew between three and ten languages) with the scores of thirty-six first-year English students who had been learning English for seven to ten years before university. The research revealed that STM and WM scores of the highly able learners were significantly higher than those of the first-year students. The differences were especially great for memory tests based on linguistic material, in particular for the (Polish) WM test, which could not be influenced by the knowledge of English. This suggests that L1 aptitude might be transferable to the L2. Similarly, Towell and Dewaele (2005) discovered significant positive correlations between speaking rate in English L1 and speaking rate in the French L2 production of twelve students before and after a period abroad. However, no significant relationship emerged between shadowing rates (the percentage of text produced on the recording that had been repeated by participants; linked to WM) in both languages.

8.3.3 Transfer of L1 aptitude to L2

One interesting avenue of aptitude research is the link between L1 and L2 language aptitude. It seems that 13- and 14-year-old children who score highly on verbal tests in their L1 do equally well in their L2, which could be evidence of an innate aptitude for languages (Skehan 1989). However, Skehan also emphasized that the L1 could only explain part of the variance because aptitude also reflects the ability to handle decontextualized language material. Dewaele (2007a) reported strong positive correlations between language grades obtained by Flemish high-school students for the L1 (Dutch) and their grades in the L2, L3 and L4 (French, English and Spanish). The same individuals thus tended to get the highest scores in all language classes, which could be related to cognitive or social factors, or to a combination of both.

Sparks, Patton, Ganschow and Humbach (2009) defend the view that a long-term crosslinguistic transfer from L1 to L2 exists. In this study the authors investigated the relationship of L1 skills in primary school and L2 learning in secondary school. Fifty-four students from a rural school district in the US were classified as high-, average-, and low-proficiency L2 learners (2009: 203). The three groups were compared on L1 achievement measures of reading, spelling, vocabulary, phonological awareness and listening comprehension administered at ages 6, 8 and 10 (2009: 203). The L2 aptitude measures were word-decoding and spelling measures while the outcome measures were oral and written L2 proficiency measures in Spanish, French and German administered at the end of two years of L2 study (2009: 203). Results showed significant differences between the three proficiency

groups in the L1 achievement measures, with the high-proficiency L2 learners exhibiting stronger L1 skills and L2 aptitude than the average- and low-proficiency L2 learners. The authors conclude that: “students’ early L1 skills are strongly related to their L2 learning several years later and . . . L1 skills may be an important source of individual differences among L2 learners” (2009: 226–27).

8.4 Personality traits

Personality traits “refer to consistent patterns in the way individuals behave, feel and think” (Pervin and Cervone 2010: 228). They thus “summarize a person’s typical behavior” (2010: 229). There is widespread agreement in the psychological community that individual differences can be organized in a simple coherent taxonomy consisting of five broad, bipolar dimensions, the so-called Big Five (2010: 228). Participants who rate themselves in personality questionnaires get scores on the various dimensions.

The dimensions are Extraversion vs. Introversion; Neuroticism vs. Emotional Stability; Conscientiousness vs. Lack of Direction; Agreeableness vs. Antagonism; and Openness to new Experience vs. Closedness (Pervin and Cervone 2010: 262). Factors similar to the Big Five have been found in languages across the world and this has been interpreted by some psychologists as evidence that “the Big Five personality structure is a human universal” (2010: 265). Indeed McCrae *et al.* (2000) argue that the Big Five have a biological basis and are not influenced directly by the environment. However, Pervin and Cervone (2010) point to studies that have demonstrated an effect of sociocultural and historical changes on personality trait scores. It is not entirely clear either whether “each and every individual in the population possesses each of the five factors” (2010: 273).

Some personality questionnaires use “yes/no” feedback in response to a statement such as “Can you get a party going?” or “Are you a talkative person?” Every dimension typically has about ten items that probe typical behavior linked to that dimension. The two previous statements refer to extraversion. A participant may answer “no” to the first statement and “yes” to the second one. The score on a dimension represents the sum of ticks (“yes” or “no” depending on the direction of the question). Other personality questionnaires invite participants to choose a numerical value on a Likert scale, ranging from “disagree completely” to “agree completely.” Traits are continuous dimensions of variability on some trait and they are normally distributed. In other words, more participants are situated in the middle of a dimension rather than at its extremes. It means, for example, that there are more ambiverts than either extraverts or introverts. The Big Five personality traits are situated at the summit of the hierarchy; there are many narrower facets, also called “lower-order” personality traits, that are often correlated with Big Five traits but also explain

unique variance. While there is little doubt that the “super-traits” or the Big Five and “lower-order” traits determine behavior in general, it is less clear to what extent they affect foreign language behavior. I will also present a short overview of some of the SLA research linked to three personality traits, namely emotional intelligence, foreign language anxiety and perfectionism.

8.4.1 Extraversion vs. introversion

According to Eysenck and Eysenck (1985), variation on this dimension is linked to the amount of cortical arousal, which in turn leads to different behaviors. While extraverts are under-aroused, introverts are over-aroused. The consequence of this is that extraverts compensate for their suboptimal arousal levels by tending towards activities that involve greater sensory stimulation while introverts will instead try to avoid over-arousing situations. Eysenck also developed an objective measure of the extraversion dimension, namely the “lemon drop test”: extraverts were found to produce more saliva than introverts when a fixed amount of juice was placed on their tongue (Pervin and Cervone 2010: 250).

Eysenck and Eysenck (1964: 8) described a typical extravert as someone who “is sociable, likes parties, has many friends, needs to have many people to talk to . . . craves excitement, takes chances, often sticks his neck out, acts on the spur of the moment, and is generally an impulsive individual.” On the other hand, a typical introvert is someone who “is a quiet, retiring sort of person, introspective, fond of books rather than people: he is reserved and distant except to intimate friends. He tends to plan ahead, ‘looks before he leaps,’ and distrusts the impulse of the moment. He does not ‘like excitement’” (Eysenck and Eysenck 1964: 8).

Extraverts’ low autonomic arousability and the insensitivity to punishment signals thus make them more stress-resistant while introverts have higher levels of the neurotransmitter dopamine (Lieberman 2000). Stress releases extra dopamine, which might push individuals over the very narrow range of optimal innervation in the dorsolateral prefrontal cortex and impair attentional and WM processes (Lieberman and Rosenthal 2001). This neurological difference between extraverts and introverts might explain why extraverts are superior to introverts in STM and WM (Lieberman 2000). The combination of extraverts’ speed of retrieval of information from memory and their higher degree of physiological stress resistance would explain their better performance in high-stimulation environments such as a foreign language classroom.

Linguists have focused their attention on the possible effect of extraversion on success in L2 learning, the expectation being that the more talkative, gregarious extravert learners have a natural advantage in the acquisition of the L2 compared to their more introverted peers. However, studies where

extraversion scores were correlated with language test scores revealed inconsistent results. In a review of SLA research that included extraversion as an independent variable, Dewaele and Furnham (1999) point out that the extraversion variable became “unloved” by researchers because of a single partially flawed study by Naiman, Fröhlich, Stern and Todesco (1978) on personality and language learning. The authors expected good language learners, i.e. Canadian secondary-school students learning French as an L2 who scored highest on the Listening Test of French Achievement and an Imitation Test, to have a distinctive psychological profile. The research was inspired by Rubin’s insightful observation that “the good language learner is...comfortable with uncertainty...and willing to try out his guesses” (Rubin 1975: 45). This seems to fit the description of an extravert learner, hence the expectation of Naiman and his co-authors to find a positive correlation between extraversion and test scores. When the link failed to materialize, they questioned the construct validity of the Eysenck Personality Inventory/EPI, which was used to calculate extraversion scores (Naiman *et al.* 1978: 67), rather than wondering whether their choice of dependent variables might have affected the unexpected result. The resulting negative publicity for extraversion was so strong that researchers have generally turned away from it.

Dewaele and Furnham (1999) suggested that if Naiman *et al.* (1978) had used a wider variety of more sophisticated linguistic variables, covering not only written language but also natural communicative oral language, they might have found that the construct validity of the EPI was not to blame for the lack of expected relationships. Indeed, the few studies that have correlated extraversion scores with oral fluency measures did report significant effects. For example, Rossier (1976) found that extraverts were more fluent than introverts on a pictorial stimulus test, and Vogel and Vogel (1986) reported that more introverted German students had longer pauses – indicating a lower level of fluency – in their oral French interlanguage. Extraverts have been found to be more fluent in oral L2 production, speaking faster with fewer filled pauses (Dewaele 1998; Wakamoto 2000).

Dewaele and Furnham (2000) found significant correlations between extraversion scores of Flemish university students producing French interlanguage in dyadic conversations and the values of linguistic variables reflecting style choice, fluency and accuracy. Extraversion was not significantly linked to morpholexical accuracy rates. While the extraverts were found to have higher speech rates and fewer filled pauses, they also exhibited lower values of lexical richness, more implicit/deictical speech styles and shorter utterances than the introverts, especially in a stressful formal exam situation. We speculated that these differences are linked to the fact that L2 production is less automatic (i.e. less based on implicit knowledge) than L1 production and relies more on declarative knowledge which requires more STM capacity (Dewaele 2002b). This could be particularly problematic for introvert L2 users who have less STM capacity. Reduced STM capacity

means that units of linguistic information would have to queue before being processed, causing a slowdown in processing and in fluency. Dewaele (2002b) compares the stacking of linguistic information to a bottleneck in an airport control tower, forcing planes to fly in circles above the runway. Extravert L2 users experience less disruption in the functioning of the STM and WM, allowing them to remain flexible and fluent. Extraverts are able to allocate extra resources to task completion and message preparation while taking contextual cues into account in order to readjust their speech pragmatically.

Smart, Elton and Burnett (1970) was one of the first studies to consider the link between extraversion and success in L2 learning (measured by grades and the Scholastic Aptitude Test/SAT). The authors report that in a group of eighty-four female American subjects, the thirteen with the best grades for intermediate French at secondary school and the highest academic aptitude scores were significantly more introverted. However, Chastain (1975) reported completely opposite results. He analyzed the relationship between the final grades of American university students learning French, Spanish and German in beginners' courses and personality variables including anxiety, outgoing personality/extraversion and creativity. While no clear link emerged between reserved and outgoing for the learners of French, a positive relationship emerged for the learners of Spanish and the learners of German. For no group did SAT verbal ability scores correlate significantly with any personality variable. Chastain admitted that course grades may have been calculated differently for the different languages and that grades are not the best measure of language achievement. Dewaele (2007a) found negative, but non-significant, correlations between extraversion and language grades in the Dutch L1, French L2, English L3 and German L4 of Flemish high-school students. This suggests that language students with higher grades tend to be more introverted. A separate study on the same sample showed that extraversion was also not linked to foreign language attitudes (Dewaele 2005b).

Vocabulary is the area where differences between extraverts and introverts are most likely. A weak negative relationship emerged between extraversion and vocabulary test performance in a group of EFL students in Indonesia (Carrell, Prince and Astika 1996). However, extraverts and introverts did not perform differently on tests measuring reading comprehension, grammar and writing. Clearer effects emerged in Kiani's (1997) study, which focused on the relationship between extraversion and scores on standard English proficiency tests (TOEFL, IELTS) among adult Iranian students learning English. Introverts scored higher on the subcomponent of reading comprehension and vocabulary. However, Morimoto's (2006) study of EFL learners in New Zealand failed to uncover statistically significant differences between extraverts and introverts in depth of knowledge of vocabulary and grammatical knowledge.

Level of stimulation may well play a role. For example, MacIntyre, Clément and Noels' (2007) study of the interaction between learning situation and

extraversion on vocabulary test scores of Canadian French L2 learners found that introverts were found to perform best after having studied in a very familiar situation, while the extraverts performed best in conditions involving a moderate degree of novelty (2007: 296). The researchers also found an interaction between person and situation in the trait “willingness to communicate,” which showed that not every extravert is more willing than an introvert to communicate. Finally, while Busch (1982) did not find a relationship between Japanese ELF learners’ extraversion scores and results of written vocabulary and grammar tests, cloze tests, dictation and oral comprehension tests, the extraverts were found to score lower on pronunciation scores.

Oya, Manalo and Greenwood (2004) looked at the link between the personality of Japanese students and their oral performance in English L2. The extraverts were not significantly more fluent or accurate and their speech was not more complex than introverts. However, extraverts were perceived to be more confident and better able to establish rapport with their audience, which resulted in higher global impressions scores.

Van Daele, Housen, Pierrard and Debrugh (2006) reported equally ambiguous findings on the link between extraversion and the development of fluency, complexity and accuracy in Flemish secondary school students’ L2 English and French. Extraverts scored higher on lexical complexity in both foreign languages, but the effect disappeared the following year. This could be the result of a methodological artefact, namely that the extraverts got bored with repeating the task a second time and made less of an effort (2006: 227).

One of the most in-depth studies on personality and success in SLA is Ehrman (2008), who used an updated good language learner design. She selected a sample of sixty-two language learners who had obtained a level 4 (i.e. “full professional proficiency, with few if any limitations on the person’s ability to function in the language and culture” (2008: 64)) on an oral interview test (out of more than 3000 learners), this top 2 percent thus represents “the true elite of good language learners” (2008: 61). She used the Myers-Briggs Type Indicator (MBTI) to establish personality types (four scales: extraversion–introversion, sensing–intuition, thinking–feeling, judging–perceiving; combining into sixteen possible four-letter types). As the variables were nominal, she used frequencies and crosstabs analyses to determine which personality type was most frequent among the level 4 participants. Only one type was significantly overrepresented, namely INTJ types (introverted–intuitive–thinking–judging) (2008: 64). She concludes that “the best language learners tend to have introverted personalities, a finding which runs contrary to much of the literature, and, even, to pedagogical intuition. The best learners are intuitive and they are logical and precise thinkers who are able to exercise judgment” (2008: 70).

Research linking extraversion with functional practice strategies in real communicative L2 situations has shown some interesting results. Ehrman and Oxford (1990) found that extraverts tend to prefer social strategies,

like cooperation with others or asking for clarification, and also use more functional practice strategies such as seeking opportunities to use a foreign language outside the class environment. This finding was confirmed by Wakamoto (2000), who found a positive correlation between functional practice strategies, social-affective strategies and extraversion among Japanese learners of English. A similar finding emerged in Wakamoto (2009), based on a similar population, where more extraverted students reported using more metacognitive and social-affective strategies than introverted students (2009: 78). Observation of teacher-fronted classes revealed that extraverts, not introverts, were using social-affective strategies; however, the latter did use more social-affective strategies in group activities and individual learning (2009: 121).

Extraverts' inclination to take risks includes linguistic risks. For example, Jay (2009) found that swearing in L1 production is positively correlated with extraversion, and more extravert L2 learners tend to use more colloquial and emotional words than their more introverted peers (Dewaele 2004c; Dewaele and Pavlenko 2002). Extraverts were also found to use more mildly stigmatized sociolinguistic variants in their French L2 (Dewaele 2004c). The research suggests that extraverts are less reluctant to use stigmatized language and more willing to engage in potentially more "dangerous" emotion-laden topics. The more risky linguistic behavior of extraverts could be linked to a superior pragmatic competence and awareness. Li, Chen and Xiao (2009) reported that extravert Chinese English majors scored significantly higher than their more introverted peers on pragmatic competence in English L2.

To sum up, it seems that both extraverts and introverts have specific strengths and weaknesses in SLA and oral L2 production. Overall, these strengths and weaknesses cancel each other out, so that it is impossible to conclude which is the desirable end of the extraversion-introversion dimension for SLA and oral L2 production.

8.4.2 Neuroticism vs. emotional stability

People who score high on Neuroticism (N) tend to feel more "tense, nervous, unstable, discontented and emotional" (Pervin and Cervone 2010: 262). Those with low scores on N can be described as calm, contented and unemotional. Although personality traits are independent dimensions, some interaction can occur whereby neuroticism affects extraverts and introverts differently so that "neurotic introverts [are] . . . most likely to suffer . . . phobias, obsessional-compulsive rituals, anxiety states and neurotic depression. Neurotic extraverts, on the other hand, . . . [are] most susceptible to hysteria . . ." (Eysenck and Eysenck 1985: 312). As is the case for other dimensions, most people are situated in the middle of this dimension (Bell curve).

Chamorro-Premuzic, Furnham and Petrides (2006: 148) reported that low-N individuals scored significantly higher on verbal ability than high-N individuals. The authors suggest that higher levels of neuroticism may

impair cognitive performance, “thus moderating the effects of actual cognitive ability on tested intelligence – mainly because of their likelihood to elicit test anxiety and lack of confidence” (2006: 149). Two other studies on monolingual participants investigated the link between Neuroticism and language measures. Steer (1974) found no link between speech rate and neuroticism. However, Campbell and Rushton (1978) found that teacher ratings of Neuroticism correlated with pausing before responding during a conversation. No relationship was found between Neuroticism and foreign language attitudes of Flemish students (Dewaele 2007a), but high-N participants scored higher on Foreign Language Anxiety (FLA) (Dewaele 2002a). However, Neuroticism did not correlate with Flemish students’ foreign language grades (Dewaele 2007a).

8.4.3 Conscientiousness

Individuals who score high on this dimension are systematic, meticulous, efficient, organized, reliable, responsible and hard-working. Conscientiousness is further associated with persistence, self-discipline and achievement striving (Busato, Prins, Elshout and Hamaker 2000). Furnham and Chamorro-Premuzic (2006) reported that individuals with higher fluid intelligence may make less of an effort, resulting in more able individuals being less conscientious (2006: 81). However, their own study showed that conscientious people had higher General Knowledge scores (2006: 84). Highly conscientious L2 learners would be expected to be harder-working language learners, and Wilson (2008) provides evidence in support of the prediction: British students studying French at the Open University who scored higher on Conscientiousness – measured through the OCEAN Personality Assessment² – were more likely to complete the course successfully.

Ehrman’s (2008) description of participants who combine intuition and thinking fits the profile of high Conscientiousness. She describes them as being merciless with themselves, always trying to improve their competence and mastery of the target language. They are also more likely to be strategic thinkers, using metacognitive strategies (goal-setting, self-assessment, self-monitoring) (2008: 67). They have a penchant for analysis and love relatively fine distinctions (2008: 67). They also strive to be precise in their use of words, expressions and grammar (2008: 67).

8.4.4 Openness-to-Experience

Openness-to-Experience encompasses aspects of intellectual curiosity, creativity, imagination and aesthetic sensibility. Individuals with high scores on Openness-to-Experience would have “a greater predisposition to engage in intellectually stimulating activities that lead to higher knowledge acquisition” (Furnham and Chamorro-Premuzic 2006: 81). Openness-to-Experience is significantly related to intelligence (McCrae and Costa 1985). Young (2007)

found that open mindedness was a good predictor of foreign language learning achievement. Verhoeven and Vermeer (2002) reported that Openness-to-Experience and, to a lesser extent, Conscientiousness and Extraversion were linked to the buildup of basic organizational skills involving lexical, syntactic, discourse and functional abilities, the acquisition of pragmatic skills (involving sociocultural routines), and the development of monitoring strategies in second language learning children in the Netherlands. The authors found even stronger relationships between the Big Five personality variables and linguistic measures in the children's L1. Ehrman (2008) reported that openness is correlated with intuition in the MBTI. Learners who score high on this dimension "concentrate on meaning, possibilities, and usually accept constant change" (2008: 66). They are typically seeking hidden patterns, are high-ability readers, and can pick up nativelike ways of self-expression (2008: 66). Foreign language learners who score high on Openness-to-Experience should thrive in educational settings that promote and reward critical and original thought (Farsides and Woodfield 2003).

8.4.5 Risk-taking

Risk-taking is one facet of extraversion that could have a specific impact on SLA. Extraverts tend to take more risks in the L2 class (Ely 1986: 3). This behavior could also be linked to extraverts' optimism and self-confidence, making them less likely to fear stepping out in the linguistic unknown in the L2 class, with the potential risk of making errors and social embarrassment. Risk-takers have also been found to participate more in the L2 class and to score higher on proficiency measures (Ely 1986; Samimy and Tabuse 1992). This does not mean that risk-taking "always create[s] consistent results for all language learners" (Oxford 1992: 30). Risk-taking interacts with psychological factors such as Foreign Language Anxiety, self-esteem, motivation and learning styles (1992: 30). Moreover, only careful, calculated risk-taking is likely to stimulate foreign language learning (Oxford 1992).

8.4.6 Foreign language anxiety and trait emotional intelligence

One psychological variable that has received abundant attention in the SLA literature is communicative anxiety (CA), which includes Foreign Language Anxiety and the more specific Foreign Language Classroom Anxiety (FLCA). MacIntyre (2007) has argued that early research in this area confused levels of abstraction, more specifically the distinction between trait anxiety, situation-specific anxiety and state anxiety, "each of which provides a valuable, but somewhat different perspective on the processes under study" (2007: 565). An individual with a high level of trait anxiety is likely to feel anxious in a variety of situations. This causes a diversion of attentional resources of the central executive to the source of anxiety and the decision on how to react. The anxious person might thus be distracted from

his/her goals by internal (troubling thoughts) or external (threatening task-irrelevant distractors) stimuli (Eysenck, Derakshan, Santos and Calvo 2007).

At the situation-specific level of conceptualization, “the concern is for concepts that are defined over time within a situation” (MacIntyre 2007: 565). The FLCA Scale developed by Horwitz, Horwitz and Cope (1986) measures this situation-specific anxiety. For Horwitz and colleagues 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” (1986: 128). FLCA is linked to any activity in the foreign language, but it is typically highest for speaking, and it affects foreign language learners at all levels and even non-native foreign language teachers (Horwitz 1986).

Finally, anxiety can exist at the state level, “the concern is for experiences rooted in a specific moment in time without much concern for how frequently those experiences occurred in the past or whether they might occur again in the future” (MacIntyre 2007: 565). Second language performance seems negatively correlated with higher levels of state anxiety (Gregersen 2003; MacIntyre and Gardner 1994). MacIntyre (2007) speculates that there are fewer studies on state anxiety in SLA because of the complicating factor that learners attempt “to cope with and compensate for the effects of anxiety” (2007: 565).

FLCA has been reported to interfere negatively with learning and performance (Horwitz 2001; Woodrow 2006) and high levels of FLCA in the classroom have been linked to students discontinuing their study of foreign languages (Dewaele and Thirtle 2009). FLA has been linked to introversion (MacIntyre and Charos 1996) and trait emotional intelligence (EI) – also called trait emotional self-efficacy. The construct of EI posits that “individuals differ in the extent to which they attend to, process and utilize affect-laden information of an intrapersonal (e.g. managing one’s own emotions) or interpersonal (e.g. managing others’ emotions) nature” (Petrides and Furnham 2003: 39). Trait EI is located at the lower levels of personality hierarchies and has been found to correlate negatively with Neuroticism, positively with Extraversion, Openness and Conscientiousness (Petrides and Furnham 2003: 48).

Dewaele, Petrides and Furnham (2008) investigated the link between levels of trait EI and levels of communicative anxiety (CA) in the L1, L2, L3 and L4 of adult multilinguals. A significant negative relationship was found between Foreign Language Anxiety in the different languages of the participants and their scores on trait Emotional Intelligence. The authors speculated that emotionally intelligent individuals are better able to gauge the emotional state of their interlocutor and feel more confident about their ability to communicate effectively. A recent study has shown that L2 users who scored highly on trait EI engaged more frequently in conversations in their L2 (Ożańska-Ponikwia 2010). In other words, a higher level of emotional intelligence might encourage L2 users to practice their L2 more regularly, which in turn increases self-confidence and boosts proficiency. Dewaele

et al. (2008) identified another independent variable linked to FLA, age of onset of learning, which was positively linked (see [Chapter 15](#), this volume). Participants who had learnt a language solely through classroom instruction suffered from higher levels of FLA compared to those who had also used their language outside the classroom. The knowledge of more languages was linked to lower levels of FLA, which confirmed an earlier study on multilinguals (Dewaele 2007b). A cluster of variables linked to current use of the target language (TL) was also linked to FLA: participants with a higher frequency of use of the TL who had a stronger socialization in the TL, who used the TL with a larger network of interlocutors and who felt more proficient in the TL reported lower levels of FLA (Dewaele 2010; Dewaele *et al.* 2008).

8.4.7 Perfectionism and foreign language anxiety

Perfectionism has been defined as a less exaggerated form of obsessive-compulsive disorder (Pittman 1987). Perfectionist L2 learners tend to make slower progress because the fear of making mistakes hinders their learning. They are inhibited about classroom participation, unwilling to volunteer a response to a question unless they are absolutely sure of the correct answer and they react badly to minor failures (Gregersen and Horwitz 2002). Moreover, they are counterproductively compulsive in their work habits and their productivity tends to be low because of procrastination (Brophy 1996).

Gregersen and Horwitz (2002) were struck by the similarities in the manifestations of foreign language anxiety and perfectionism and argued that the techniques developed to help overcome learners' perfectionism might also be useful in helping them overcome their FLA. The authors found that the main difference between four anxious and four non-anxious learners was their reaction to their performance. The anxious learners were found to be more perfectionist: they set themselves higher personal performance standards, procrastinated more, were more fearful of evaluation, and were more concerned about errors. The authors draw some pedagogical implications from their findings, namely that perfectionist learners should be told that their self-beliefs are hypotheses rather than facts (2002: 569), that they should try to remain calm and focus on continuing a conversation as a goal in itself, and not get side-tracked by errors (2002: 570).

8.5 Conclusion

Is there such thing as “a good language learner”? The answer seems to be positive, but no single independent variable, set of learner-internal variables or combination of learner-internal and learner-external variables can currently be put forward as the only cause behind successful SLA. One difficulty is the definition of success. Indeed, as Cook (2002b) points out, L2 users can be

perfectly successful communicators, while clearly not having nativelike performance in the L2. Physiological factors such as superior memory abilities, stress-resistance, musical ability and verbal ability in the L1 combined with various personality factors of the learner can result in more rapid processing and storage of input, higher levels of intrinsic motivation, self-efficacy and self-management, relatively low levels of FLA/FLCA and a willingness to use the L2. However, the effects of many of the previous variables are determined by a complex and dynamic interaction within a potentially infinitely varying or at least unpredictable learning context. L2 learners with similar personality profiles may differ enormously in their progress and ultimate attainment because of some random trigger event, such as unhappiness with a particular teacher, an encounter with a striking text or film in the L2, or even a sudden infatuation with a native speaker of the L2, that suddenly makes the learning of the L2 – and learning it well – an absolute priority for that individual. Other equally good learners may not have experienced such an event and therefore proceed gently without pushing themselves to the limit.

In sum, while it is reasonable to assume that some psychological traits or internal characteristics of learners will make them potentially good language learners, they will have to choose whether or not to fulfill that potential. Learners' choice will be influenced by the teaching environment, by the larger sociopolitical environment and by random life events. Once the choice has been made, learners will progress in the acquisition of the L2 while reminding themselves that they can be legitimate good L2 users and do not necessarily have to sound like native speakers in their L2.