『経営学論集』第28巻第２号，13-62頁，2017年11月
KYUSHU SANGYO UNIVERSITY, *KEIEIGAKU RONSHU*（*BUSINESS REVIEW*）Vol. 28, No. 2 , 13-62, 2017

〔Articles（論説）〕

Understanding Heart and Mind Interaction for Optimal Functioning in Foreign Languages and Cultures − A Focus on the Importance of Affect (Emotions)

Timothy Dean Keeley

Abstract

This paper focuses on the critical role affective factors (emotions) play in determining success or failure when functioning in foreign languages and cultures. Previous research by the author clearly demonstrated that the social, psychological and affective factors that facilitate adapting to foreign cultures also facilitate fluency in foreign languages when a sojourner must function in the host country language for such reasons as study or work (see Keeley, 2013, 2014a, 2014b and 2016). The research employed Kozai Group's Global Competencies Inventory[1] and two of the competencies dealing with emotions (affective factors), *Emotional Resilience* and *Emotional Sensitivity* are reported and discussed in this paper along with a wide-ranging multidisciplinary literature review.

Introduction

When it comes to foreign languages and foreign cultures people react in astoundingly different ways. You may have wondered why some people are frustrated in trying to learn even the basics of a foreign language while others speak multiple foreign languages fluently; or why some people seem to flourish in almost any culture while others quickly become overwhelmed and flounder. The main theme of this paper is the exploration of the social, psychological, and affective (SPA) factors (with the main emphasis on affective factors − metaphorically, the heart aspect) that demonstrate a strong impact on both cultural adaptation and foreign language acquisition (oral/aural fluency). Thus, the perspective is naturally an integration of both sociolinguistic and psycholinguistic perspectives. From a personal perspective, as a polyglot who has been a learner and user of additional languages in the societies/cultures where the languages are spoken, the importance of the social/cultural context and how we react emotionally has always been obvious to me. I have experienced the simultaneous development of the ability to function in diverse cultures and

[1] http://www.kozaigroup.com/global-competencies-inventory-gci/

languages and this integrative approach seems natural.

Assimilation of a foreign culture in terms of acceptance (not feeling awkward or estranged when functioning in the foreign culture) takes the study of the corresponding foreign language beyond meta-linguistic knowledge (understanding of semantics, grammatical rules, syntax, phonology, etc.) to a level of acquisition that enables a high level of performance in the target language. In other words, in such a state it does not feel unnatural to participate in the culture and speak the language. There is no feeling of being a traitor to your identity associated with your mother tongue and the culture of your upbringing. Thus, I hypothesized that the social, psychological, and affective (SPA) factors of individuals who demonstrate successful cultural adaptation (living, working, or studying and functioning in a foreign culture) may also facilitate acquiring a foreign language in the terms of high-level performance defined as approximating that of a native speaker in oral communication. I specify oral communication because that requires interaction with others, usually native speakers of the target language. In such interaction the foreigner usually also has to deal with cultural differences. Furthermore, our emotions are engaged to a much greater extent in a conversation compared to using the language in another form that does not involve direct on-the-spot communication, such as reading and writing.

This hypothesis was tested using Kozai Group's Global Competency Inventory (GCI)[2], which was employed to measure various social, psychological, and affective (SPA) factors that facilitate cultural adaptation (independent variables). The dependent variable was oral fluency in Japanese. The study participants were Chinese students studying at Kyushu Sangyo University. There was a lot of homogeneity among the Chinese students in terms of demographic variables related to learning the target language, Japanese. Thus, it allowed for controlling for variables not under investigation that might influence their oral proficiency in Japanese. The results indicated that the SPA factors measured by the GCI were also strong predictors of level of fluency and the degree of native-like speech in the target language (Japanese). For more details please refer to Keeley (2013) and Keeley (2014b).

As for SPA factors in foreign language acquisition, it was not until Firth and Wagner (1997) published an article arguing that second language acquisition (SLA) research was too dominated by psycholinguistic thinking that SLA research began to more seriously consider sociolinguistic factors, i.e., the context

[2] http://www.kozaigroup.com/global-competencies-inventory-gci/

of acquisition and use. It is within such a context that the importance of the emotional side of the equation becomes conspicuously clear. Learning a foreign language does not happen just in the mind of the learner; rather it takes place in the interaction between the mind of the learner and the social context. Emotions are conceptualized as ongoing processes rooted in dynamic social contexts, which can shape both implicit and explicit emotional responses. Emotion interactions are therefore considered as continuously developing, thanks to the relationship between interactants and between them and the surrounding environment (Marinetti, Moore, Lucas & Parkinson, 2010).

This paper focuses on the affective or emotional aspect of functioning in foreign languages and cultures. Part 1 presents the results of the above mentioned research for two competencies from the Kozai Group's Global Competency Inventory, namely *Emotional Resilience* and *Emotional Sensitivity*. After discussing these competencies, Part 2 presents further topics that demonstrate the importance of affect (emotions) in foreign language acquisition and use, particularly in cross-cultural settings.

What is Affect in this Context?

In discussions related to foreign language acquisition, the term 'affect' is often used to refer to these human emotions that play an important part in cross-cultural adaptation and foreign language acquisition. Oatley and Jenkins (1996:124) commented, "The term 'feeling' is a synonym for emotion, although with a broader range. In the older psychology literature the term 'affect' was used. It is still used to imply an even wider range of phenomena that have anything to with emotions, moods, dispositions and preferences." In addition, Stevick (1999) stated,

> One's affect towards a particular thing or action or situation or experience is how that thing or that action or that situation or that experience fits in with one's needs or purposes, and its resulting effect on one's emotions The inclusion of emotion along with needs and purposes is not surprising when we consider that emotions are commonly responses to how one's various needs and purposes are or are not being met. (p. 44)

Arnold (1999) defines affect in terms of aspects of emotion, mood or attitude that condition behavior. Dickinson (1987:25) describes it as being concerned with the learner's attitude towards the target language and users of it, as well as the learner's emotional responses. According to Hurd (2008:219), "The cognitive and metacognitive domains of language learning have been a dominating force on the

second language acquisition (SLA) research agenda for at least three decades, while affective considerations have attracted less interest. Inspired by the work of Gardner and Lambert (1972), Gardner and MacIntyre (1993), Horwitz et al. (1986), and others, the 1990s, however, witnessed a growing interest in affect which has continued to gather momentum." Hurd goes on to assert that affect and cognition are increasingly seen as multidimensional overlapping and interdependent constructs. Arnold and Brown (1999:8) contend that "The way we feel about ourselves and our capabilities can either facilitate or impede our learning ... and underline the difficulty of isolating the cognitive, for at many points affect inevitably enters the picture." Subsequently Arnold (1999:1) claimed, "Neither the cognitive nor the affective has the last word, and, indeed, neither can be separated from the other."

Surely there are a multitude of factors that influence the process of acquiring the ability to speak a foreign language. Thus, it is not surprising that there is great variation in the ultimate success of learners. Such differences appear even when there are almost identical circumstances in which learners acquire a target language. SPA factors represent three broad but sometimes overlapping categories of factors. We can hypothesize that some factors are related to how the learners relate to the social environment in which the learning takes place (social factors), some factors are related to the individuals' psychological characteristics, and finally, there are differences in affective dynamics. Affect refers to emotion or feeling, mood, manner, attitude and so on. The affective domain is the emotional side of human behavior, and it may be contrasted to the cognitive side.

Affective factors, in a broad sense, are subsumed under psychological factors. However, in contrast to what might be considered psychological traits, affective factors are generally seen as being more volatile. Affective factors can be viewed broadly as psychological states related to underlying psychological traits. Ellis (1994: 483) stated, "Learners' affective factors are obviously of crucial importance in accounting for individual differences in learning outcomes. Whereas learners' beliefs about language learning are likely to be fairly stable, their affective states tend to be volatile, affecting not only overall progress but responses to particular learning activities on a day-by-day and even moment-by-moment basis."

Stern (1983:386) proposed three major concepts of affect (attitude, motivation, and personality). Stern claims "The affective component contributes at least as much and often more to language learning than the cognitive skills." Likewise, in her book on language learning strategies, Oxford (1990:140) asserts, "The affective

side of the learner is probably one of the very biggest influences on language learning success or failure ... negative feelings can stunt progress, even for the rare learner who fully understands all the technical aspects of how to learn a language. On the other hand, positive emotions and attitudes can make language learning far more effective and enjoyable."

In relation to foreign language acquisition, Dulay and Burt (1977) introduced the concept of the affective filter and later it became known as Krashen's (1982) fifth hypothesis. The five hypotheses of Krashen's theory of second language acquisition are: the acquisition-learning hypothesis, the monitor hypothesis, the natural order hypothesis, the input hypothesis and the affective filter hypothesis. In the affective filter hypothesis Krashen maintains that most of the affective variables can be placed into one of three categories. (1) Motivation: performers with high motivation generally do better in second language acquisition (usually, but not always, integrative motivation being the most important – referring to the desire to integrate into a culture). (2) Self-confidence: performers with self-confidence and a good self-image tend to do better in second language acquisition. (3) Anxiety: low anxiety appears to be conducive to second language acquisition, whether measured as personal or classroom anxiety. When the affective filter is activated it means it is blocking the acquisition of the target language due to one or more of these affective factors.

Research on the limbic system indicates that the amygdala, part of the limbic system in the temporal lobe, is one location of an affective filter in the brain (Willis, 2007a). When the amygdala senses threat it becomes overactive, delaying or blocking electrical activity conduction through the higher cognitive centers of the brain (Willis, 2007b). The amygdala can be considered to be where the heart meets the brain. For many years the amygdala has been implicated in emotional processing and has a significant effect on learning (Killcross, 1999). Books such as *Descartes' Error* by Antonio Damasio (1994) and the *Emotional Brain* by Joe LeDoux (1996) have popularized this view. Furthermore, Introini-Collison et al. (1991) used neuroimaging and neuroelectrical brain wave monitoring to demonstrate the connection between emotion and learning with a focus on what happens in the brain during stress.

When the amygdala is in the overactive metabolic state associated with stress, the rest of the brain's cortex does not show the usual fMRI or PET scan activation that represents the processing of data (Chugani, 1998; Pawlak et al., 2003). During periods of high stress or anxiety, fMRI studies show increased blood flow to this emotional portion of the limbic system. When the amygdala is in this

hyper-excitable state, neural activity through the amygdala to the higher learning and association centers in the rest of the brain is profoundly reduced (Xiao & Barbas, 2002; Pawlak et al., 2003). This implies that new information coming through the sensory intake areas of the brain cannot pass as efficiently through the amygdala's affective filter to gain access to the brain's cognitive processing and memory storage areas, such as the left prefrontal cortex.

Cross-Cultural Adaptability and Foreign Language Ability

Cross-cultural interactions have greatly increased with the globalization of business. From a globalized business environment perspective, some people observe that cultural differences are sometimes suppressed as norms and values of individuals in the business community become more homogenous, (Bird & Stevens, 2003). However, this is usually only the case when all the participants have significant experience in global business; even in such a situation cultural differences are still bound to influence interaction among the participants from different cultures. Thus, it is important to be aware of the conditions in which cultural differences need to be recognized and dealt with effectively in order to avoid undesired outcomes. In other words, individuals need to be aware of the conditions under which cultural differences play an important role. The ability to recognize such conditions in a cross-cultural environment is greatly enhanced by learning the languages of the cultures.

Cross-cultural competence has been defined in terms of knowledge or cultural literacy, skills and abilities, including foreign language competence, stress management and attitudes, which encompass personal traits such as curiosity and tolerance for ambiguity (Johnson, Lenartowicz & Apud, 2006). In addition to adaptability, a critical component of a successful international professional career is learning a foreign language (Andreason, 2003; Graf, 2004). Cross-cultural adaptability has been rated as the number one criterion for international managers, above job, technical, and management skills (Flynn, 1995). Furthermore, foreign language competence, adaptability, and respect for cultural differences have been rated as crucial skills for expatriate managers, along with intercultural communication skills and sensitivity (Graf, 2004).

Neyer and Harzing (2008) studied the impact of culture on interactions and found that previous experience with culturally determined behavior and experience working in a foreign language fosters norms that reduce conflict based on cross-cultural differences. They also concluded that experience working

in a foreign language helps individuals to identify appropriate culturally determined behavior and, thus, to adapt to specific characteristics of the foreign culture. Their study supports previous findings that suggest that individuals who learn a foreign language might be subconsciously influenced by the culture embedded in that language and so acquire some of its characteristics (Yang & Bond, 1980).

Neyer and Harzing (2008) assert that the more experience individuals have in working in a foreign language, the more they are able to understand the nuances of culturally determined behavior. They develop a greater awareness of cultural differences,

> Individuals who are aware of the culturally determined nuances in language, which reflect a particular culturally-determined behavior expected by the counterpart, are more likely to avoid conflicts by using the appropriate wording and expressions ... In contrast, if people are not very experienced in working in a foreign language, language barriers can give rise to a large number of negative consequences: uncertainty and suspicion, deterioration of trust, and a polarization of perspectives, perceptions and cognitions. (p. 14)

In a study including language variables on work adaptation of expatriate women in Japan, Taylor and Napier (1996) found language skills and age to be the most important personal attributes for successful adjustment. Language skills are an important determining factor of an expatriate's ability to interact with host country nationals and learn from interactions, refining his or her cognitive maps and behaviors. In a separate study, Haslberger (2005) also found that language skills (ability in the host country language) are positively related to cognitive and emotional adaptation in a foreign culture.

Working in a culturally different environment is always a challenge, so it is not surprising that the lack of cultural knowledge and language ability, as well as a difficulty to adjust to the local culture, are major factors contributing to expatriate failure (Briscoe & Schuler, 2004; Dowling & Welch, 2004). Knowledge of a host-country's language is also very important for successful international assignments, no matter what positions the expatriates take up (Dowling et al., 1999). Expatriates who speak English and at least one other language are far better placed than managers restricted to English (Mead, 1998). Language education is also an effective indirect method of learning about a country, and perhaps the best way to make an international assignment successful (Ronen, 1986).

Having total command of the language is not necessary, however, any

attempt to speak the language, even if only parts of local phrases, shows that the expatriate is making a symbolic effort to communicate and to connect with the host nationals. The opposite, a resolute unwillingness to speak the language may be seen as a sign of contempt for the host nationals (Schneider & Barsoux, 1997). Not making a sufficient effort to learn the local language may reflect a degree of ethnocentrism, which is when one believes that one's culture is superior to other cultures (Dowling & Welch, 2004). This attitude can easily develop in the case of speakers of English (both native and non-native speakers) since English is often considered the lingua franca of international business. Furthermore, lacking ability in the host country language has strategic and operational implications as it limits the multinational's ability to monitor and process important information.

Neal (1998) carried out interviews with French expatriates in Britain and identified language problems as the major source of frustration, dissatisfaction, and friction between them and their British colleagues. The language barrier increased the French expatriates' feelings of being outsiders. In addition, the lack of expatriate language ability has been found to contribute to problems with interpersonal relations between Americans and Mexicans (Sargent & Mathews, 1998), as well as between Americans and Japanese (Wiseman & Shutter, 1994).

Selmer (2006) tested three hypotheses focusing on the relationship between language ability and cross-cultural adjustment. Namely, (1) language ability has a positive association with interaction adjustment; (2) language ability has a positive association with general adjustment; and (3) language ability has a positive association with work adjustment. The study involved Western expatriate adjustment in China. Controlling for the time expatriates had spent in China, it was found that their language ability had a positive association with all adjustment variables. This positive relationship was strongest for interaction adjustment (obviously language ability in Chinese is an important factor when interacting with Chinese who have limited foreign language ability) and the weakest for work adjustment.

Foreign language ability and understanding local cultural norms and practices are also important competencies in business negotiations. Language is one the major issues when it comes to negotiations with trade partners from other countries (Tayeb, 1998). The ability to speak a foreign language can improve the expatriate's effectiveness and negotiating ability (Dowling & Welch, 2004).

Part 1 Competencies of the GCI Related to Affect or Emotions

Emotional Resilience

This dimension measures your level of emotional strength and your ability to cope favorably with irritations, setbacks, frustrations and failures. It also assesses capacity to recover quickly from psychologically and emotionally challenging situations.

5-point Likert scale anchored with 1 = "Strongly Disagree" and 5 = "Strongly Agree"
Overall Scale Reliability = 0.81 – Cronbach's Alpha

Sample Questions:

- ✧ It takes time to get over a particularly stressful experience.
- ✧ I find that little things often bother me.
- ✧ I have never been good at coping with negative emotions.

(Note that some questions are reversed-coded in calculating the dimension score.)

Kozai Group's Description of the Emotional Resilience (ER) Competency

Emotional Resilience refers to the extent to which a person has emotional strength and resilience to cope with challenging cross-cultural situations. Emotional resilience reflects the psychological hardiness that allows a global manager to carry on through difficult challenges. Individuals who can manage and control their emotions are also better equipped to deploy other global competencies than those who are low in emotional resilience.

This competency emerged in Mendenhall & Osland's 2002 review of the global leadership literature, where they labeled it "hardiness." It similarly emerged from the ION review of global competencies (Bird & Osland, 2004). Emotional resilience is a common indicator of intercultural effectiveness in the expatriate literature as well, Arthur & Bennett (1995, 1997); Caligiuri (2000); Kealey (1996); Ronen (1989). Kelley and Meyers (1992) assert from their research that the emotionally resilient person has the ability to deal with stress feelings in a constructive way and to 'bounce back' from them. Emotionally resilient people have confidence in their ability to cope with ambiguity and have a positive sense of humor and self-regard.

The ability to carry on, perseverance, is described by Kealey (1996) in his review of the literature as being an important attribute of working in foreign cultures. He classifies it as being a key predictor of success in a cross-cultural/

global work setting.

High scorers have the ability to respond with extraordinary emotional resilience to potentially challenging and frustrating situations; as a result they also recover very quickly from difficult or challenging experiences. Low scorers find it extremely difficult to handle psychologically and emotionally challenging experiences and their recovery from such experiences takes a long time or may never be fully achieved.

Emotional Resilience & Foreign Language Acquisition

"Be like water making its way through cracks. Do not be assertive, but adjust to the object, and you shall find a way round or through it. If nothing within you stays rigid, outward things will disclose themselves. Empty your mind, be formless. Shapeless, like water. If you put water into a cup, it becomes the cup. You put water into a bottle and it becomes the bottle. You put it in a teapot it becomes the teapot. Now, water can flow or it can crash. Be water my friend." – Bruce Lee

Results for the GCI Self-Management Variable Emotional Resilience

In a quantitative study carried out using Kozai Group's Global Competencies Inventory (Keeley, 2014a; Keeley 2014b; Keeley, 2013) 86 Chinese students, studying at a Japanese university in various disciplines, were separated into 5 groups according to their relative performance ratings in 'Japanese Ability' (oral/aural communication).[3] The participants filled out a Chinese version of the GCI. Thereafter, their scores on the GCI were examined in relation to their ratings in 'Japanese Ability'. The results of the ANOVA for *Emotional Resilience* yielded an F Value of 15.29 (Sig. = 0.000) between the 'Top 17' and 'Bottom 17'. Furthermore, the F Value for all five groups was 3.64 (Sig. = 0.009). These high F Values confirm the validity of the correlation and difference of means analyses. Table 1 shows that the correlation between *Emotional Resilience* scores and 'Japanese Ability' are significant for the 'Top 17' and 'Bottom 17' as well as for all 86 participants.

Table 1: Emotional Resilience & 'Japanese Ability' Correlation

Scale	Pearson Correlation	Significance (2-Tailed)	Subjects
Emotional Resilience	0.508/0.349	0.002/0.001	34/86

[3] See Keeley (2013) for the method used to rate the students' 'Japanese Ability'.

Additionally, there is a significant difference between the mean of the 'Top 17' subgroup's scores for *Emotional Resilience* and that of the 'Bottom 17' subgroup as can be seen in Table 2.

Table 2: Differences of Means for Emotional Resilience Scores

Optimism	N	Mean	Std. Deviation	Std. Error Mean	Sig. 2-tailed	Mean Difference	Interval 95% Conf.
'Top 17'	17	3.4779	0.4244	0.1029	0.000	0.4926	0.2361 to
'Bottom 17'	17	2.9853	0.29853	0.0726			0.7492

Defining Emotional Resilience

It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change. – Charles Darwin

Resilience is the ability to work with adversity in such a way that one comes through it unharmed or even better for the experience. Resilience means facing life's difficulties with courage and patience, always refusing to give up. It is the quality of character that allows a person to rebound from misfortune and traumas. Resilience is rooted in a tenacity of spirit. It is a determination to embrace all that makes life worth living even in the face of overwhelming odds. When we have a clear sense of identity and purpose, we are more resilient. We can hold fast to our vision of a better future. Much of our resilience comes from community – from the relationships that allow us to lean on each other when we need it. By helping others get through hard times we create resilience in ourselves. [i]

The Neurobiology of Emotional Resilience

The left prefrontal cortex sends inhibitory signals to the amygdala that can quiet the amygdala down when an individual is confronted with negative feelings such as disgust, horror, anger, fear, etc. People with less activation in certain zones of the prefrontal cortex demonstrate more lasting activity of the amygdala in the wake of an experience that evokes negative emotions. Signals from the prefrontal cortex to the amygdala, and from the amygdala to the prefrontal cortex, determine how quickly the brain will recover from an upsetting experience. People with low emotional resilience (great difficulty in bouncing back from adversity) have fewer signals travelling from the prefrontal cortex to the

amygdala. This can be a result of low activity in the prefrontal cortex itself or from a paucity of connections between the left prefrontal cortex and the amygdala. Conversely, people who are quick to recover from adversity or negative experiences show strong connections between the prefrontal cortex and the amygdala. By down regulating the activity of the amygdala, the prefrontal cortex quiets the signals associated with negative emotions, allowing the brain to plan and act effectively without distraction from negative emotions (Davidson, 2012).

Our social environment dictates that there should be a balance between being highly emotionally resilient and responding to other people's emotions – demonstrating empathy. Davidson (2012) recommends mindfulness meditation as a way to strengthen the neural connections between the prefrontal cortex (particularly the left side) and the amygdala. Cognitive reappraisal training can also be effective. This technique teaches people to reframe adversity and negative experiences in such a way that they do not appear so extreme and enduring. It can be clearly demonstrated using fMRI that people can consciously and willingly regulate the activity of the amygdala using these types of cognitive strategies. This training directly engages the prefrontal cortex, resulting in increased prefrontal cortex inhibition of the amygdala – the pattern associated with increased emotional resilience. The activation of the in the left amygdala decreases as the activation of the ventromedial prefrontal cortex (vmPFC) increases. The result is the reduction of negative affect (Schaefer et al., 2002).

Graham (2010) also recommends mindfulness as a method of strengthening the neurological foundation of emotional resilience. We can observe what is happening in our mind and body, or the external environment, without reactivity or judgment, without moving to fix or running away. Mindfulness breaks the automaticity of our habitual reactions. The prefrontal cortex offers response flexibility, the capacity to stop, hold the experience, and regulate the emotional response from the amygdala to allow for thought, reflection and evaluation. Graham considers response flexibility to be the fulcrum of emotional resilience (Graham, 2010).

One method of increasing response flexibility is the S.O.B.E.R. protocol suggested by Alan Marlatt, former founder and director of the Addictive Behaviors Research Center at University of Washington. STOP – or pause the reactive emotional system. Sometimes just counting to ten or deep breaths affords time for the prefrontal cortex to down regulate the automatic response of the autonomic nerve system and the amygdala. OBSERVE – this is where

mindfulness can break the automaticity of our habitual reactions. BREATHE – deep breathing calms down the nervous system. EXPAND PERSPECTIVE – see the event in the broader context of your life. RESPOND WISELY – through the development of insight and knowledge about our emotions and habitual reactions. [ii]These techniques can also be applied to reduce negative effect of anxiety that some people experience while interacting in foreign languages and/or stress inducing cross-cultural situations.

Emotions – The Enabler and Disabler

This topic is closely related to the discussion of the GCI competencies *Non-Stress Tendency*, in which I focus on anxiety in relation to language learning and performance, as well as *Stress Management*, in which I concentrate on concrete strategies for managing anxiety and stress (See Keeley, 2013 & 2014). Here the focus is mainly on the relationship between emotional states, cross-cultural adaptation, and language acquisition. Emotional states can greatly influence one's ability to acquire the target language when functioning in a foreign culture. Emotional resilience is associated with maintaining positive attitudinal states conducive to acquisition. As previously mentioned in relation to affect in foreign language acquisition, Dickinson (1987) describes it as being concerned with the learner's attitude towards the target language and users of it, and with his/her emotional responses. The development of negative attitudes towards a target language, the culture of the target language, and/or its native speakers can be expected to lower motivation to acquire the language and to mimic the communicative behavioral traits of native speakers.

We can expand our examination of additional effects produced by increased activation of the prefrontal cortex in down-regulating the activity of the amygdala in response to negative emotions in order to biologically demonstrate why *Emotional Resilience* is related to *Non-Stress Tendency* and *Stress Management*. Cortisol is an important factor in stress neurobiology. In the morning cortisol is normally at peak levels and the levels naturally decrease during the day. However, there are individual differences in terms of the downward slope of mean cortisol levels during the day. Individuals good at reducing negative affect (higher activity of the vmPFC leading to decreased activation of the amygdala) have steeper slopes in the line of the graph indicating the reduction of cortisol during the day than individuals demonstrating lower vmPFC activity and less reduction of amygdala activation. Individuals with flatter slopes in the reduction

of cortisol tend to have a larger waist circumference (tendency toward obesity), poorer performance on explicit memory tasks, lower perceived social support, and higher perceived stress (Locke et al., 2009). In other words, low *Emotional Resilience* is neurobiologically associated with *Non-Stress Tendency* (as seen in the steeper slopes of mean cortisol reduction during the day) and *Stress Management* (as seen in the effective use of cognitive strategies to lower amygdala activation in response to negative emotions).

Additionally, if there are high levels of cortisol still present when we go to bed, our sleep, dreams, and memory consolidation may be negatively affected (Payne & Nadel, 2004). The concentration of cortisol escalates over the course of the night's sleep in ways that change the nature of dreams across the dream cycle. However, high mean base levels of cortisol upon going to bed can lead to higher concentration of cortisol during the natural cycle of cortisol escalation during the night. High levels of cortisol during REM interfere with hippocampal-neocortical interactions, disrupting the consolidation of episodic material and altering the episodic coherence of dreams. Memory consolidation involves both the strengthening of traces representing the episodic details of experience, and the parallel integration of information extracted from experience with previously acquired semantic knowledge. In other words, we are integrating knowledge gained from (mainly recent) new experiences with the existing state of knowledge that is a product of this type of integration associated with other past experiences (Payne & Nadel, 2004).

High cortisol levels exert a negative influence on the primary output field of the hippocampus and as a result, disconnected fragments, stored in dispersed neocortical regions, become activated in the absence of the spatial and temporal contexts that situate them in episodic memories. Episodic memory formation is disrupted. Clinical evidence suggests that memory for stressful experience lacks coherence, context, and episodic detail − it is experienced as fragmented. High levels of cortisol can lead to false memories and fragmentation in dreams that leads to bizarre narratives we attempt to make sense of upon awakening (Stickgold et al., 2001). In summary, consistently high mean levels of cortisol not only negatively affect memory during the day, they also affect memory consolidation at night. So improve your emotional resilience or be ready for poor memory and really bizarre dreams as your norm!

Additionally, sleep and dreams are so important in your journey to becoming fluent in foreign languages, particularly when in an immersion context. There are so many new experiences in such a situation increasing the importance of getting

sufficient sleep. Without adequate rest, the brain's ability to function quickly deteriorates impacting concentration, consolidation of memories, and the learning of new motor skills.

Schumann's Stimulus Appraisal Model in Learning

In discussing the neurobiology of affect in language Schumann (1997:xv) states that emotion underlies most, if not all cognition, and he argues that variable success in SLA is emotionally driven. Fundamentally, Schumann is referring to the observation that the amygdala assesses the motivational significance and emotional relevance of stimuli. It is on the basis of such appraisals that the brain allocates attention and memory resources to various problems, and the variability is such allocations affects learning. Thus, in his book *The Neurobiology of Affect in Language*, Schumann (1997) presents how the psychology and neurobiology of stimulus appraisal influence variability in SLA, and he extends the notion of affect, which is widely recognized as an important factor in primary language acquisition and cognition in general. First, he develops the notions of value, emotional memory, and stimulus appraisal. He then suggests that the neural system consisting of the amygdala, the orbitofrontal cortex, the body proper, and the connections among them subserve these psychological constructs relating emotions with memory and learning. Thereafter, he offers evidence for the idea that stimulus appraisal constitutes the affective basis for motivation in SLA and for all sustained deep learning.

Schumann bases his discussion of learning in the 'biological notion of value'. Value is the basis for all activity; we perceive, move, cognize and feel on the basis of value (Schumann & Wood, 2004). In relation to the biological basis of motivation in human activity, including language learning, it is important to consider three innate systems that underlie the value system with which stimuli are appraised: the homeostatic system, the sociostatic system, and the somatic system. The homeostatic system deals with maintaining homeostasis in the body for the purpose of ensuring survival. The sociostatic system regulates our interaction with others and motivates humans to seek feelings of attachment and group affiliation. Despite the fact that the homeostatic and sociostatic systems are considered to be innate systems of regulation, everyone develops an individual and unique system of somatic values or somatic system of preferences and aversions. In contrast to the former systems, the somatic system is not inherited, but rather it develops over one's lifetime. This somatic system acts as an

appraisal system of stimuli we encounter in our lives. Stimulus situations that enhance homeostatic and sociostatic regulation will be preferred and those that frustrate them will receive negative appraisals (Schumann, 1997).

Schumann (1997) examined various well-known motivational questionnaires associated with foreign language learning in terms of value appraisals. The analyses of appraisals were made mainly along three dimensions: goal significance, appealingness (pleasantness) of agents, activities, or objects, and coping potential. The goal significance relates to the value of the learning and emotional resilience helps keep goals in focus and overcome obstacles. Though some of the activities and experiences encountered in achieving the goals may not be evaluated positively, the overall positive appraisal of the goals associated with success in learning the language may provide the motivation to deal with these negative appraisals. The appealingness of the agents (e.g. teachers or people with whom we interact in the target language) is important in the sense that the somatic value system expands by associations. For example, if we have a strong negative or positive experience with a native speaker of a foreign language or the culture of a foreign language then we are apt to associate these feelings with the language in question. Positive feelings can increase motivation to learn the language, while negative feelings can have the opposite effect.

Emotional resilience represents the degree to which we are able to overcome such negative experiences or feelings and how long it takes us to do so. It is associated with the coping potential in the foreign language learning process. When we face setbacks or other situations, which are judged as negative in terms of how they affect our homeostatic and/or sociostatic regulation, the likelihood of avoidance increases if we are not able to quickly overcome the negative emotional impact. In a cross-cultural situation in which language acquisition is also taking place, the maintenance of positive emotional states becomes an important factor in determining our ability to adapt to the culture and acquire the target language. Positive emotional states facilitate positive evaluations of stimuli, while negative emotional states facilitate negative evaluations. Furthermore, people function better when in a positive emotional state compared to a negative emotional state.

Developing an Emotional Passport

Family therapist and clinical psychologist, Janice Abarbanel talks in terms of having an 'emotional passport', which refers to acquiring the skills to regulate

emotional challenges in cultural transitions.[iii] Abarbanel points out how the intercultural field misses opportunities to prepare learners for the emotional highs and lows of cultural exchange, relying instead on catastrophe ('culture shock') and crises preparation. Instead she suggests we can teach strategies to help regulate the normal stressors that come with crossing cultures. She argues that the best learners could be described as those who have a capacity for emotional resilience (the 'emotional passport'). Many of the arguments she makes with regard to the importance of emotional resilience in cross-cultural effectiveness also hold for effectiveness in acquiring the language of the cultures involved. This is especially true if the language acquisition is taking place in the foreign culture rather than in a classroom setting in one's home country.

Abarbanel describes the 'emotional passport' as a dynamic toolbox of skills learned and practiced during the full-circle of intercultural exchange: pre-departure, on site, and re-entry. In order to build the necessary emotional resilience people must recognize that moving between cultures can contribute to high emotional arousal (discomfort, irritability, anger, homesickness, sadness) and understand that disengaging from emotional overload to quiet the mind will contribute to improved focus. She believes that tolerance of ambiguity, a skill most noted as a building block for mastering intercultural transitions, is at the core of the emotional passport. Emotional resilience is described as the capacity to calm down or self-regulate in the face of strong reactions to uncomfortable or perhaps even disturbing events. It is a dynamic process. The challenge is to deal with negative thoughts and feelings and possible feelings of discomfort in the face of cultural differences (and I would add in the face of difficulties of communicating in a foreign language, particularly at the early stages of acquisition), and to embrace multiple points of view. Thus, sojourners need to acquire healthy strategies to understand and regulate intense emotional experiences.

With high levels of arousal, the language/problem-solving center of the brain's left hemisphere goes 'off line', and the right hemisphere, the seat of emotional expression, without language, takes over (metaphorically speaking – the center for language can also be in the brain's right hemisphere, especially in left-handed individuals). When people are frightened or aroused the frontal areas of the brain, which analyze an experience and associate it with other knowledge, are deactivated. If a sojourner abroad begins to feel the effects of overstimulation or high arousal then the solution is informed temporary disengagement. Informed temporary disengagement does not mean total withdrawal, rather it should be viewed as a time to recharge one's emotional battery and cognitive functions that

are at their best in times of emotional stability accompanied by a positive attitude and outlook – optimism. There must be a periodic calming of the mind. Psychologists Loehr and Schwartz (2004) point out that maximum performance requires periods of emotional disengagement. After a period of concentration, the brain needs to recover, and then another focused period can begin. As a result of intense and new learning experiences, fatigue sends our body signals to disengage.

Other Ways to Strengthen Emotional Resilience

Besides informed temporary disengagement, there is a substantial amount of information concerning other strategies to strengthen emotional resilience in the literature on positive psychology. It is helpful in this discussion to observe some of the characteristics of emotionally resilient people since any efforts to strengthen these characteristics should build emotional resilience. Though one could make a considerable longer list, here I present five characteristics, all of which are integrated into the GCI. First, they tend to have a high level of emotional awareness, which is related to the GCI competencies of *Emotional Sensitivity* and *Self-Awareness*. Second, they tend to have a great deal of perseverance, which may be a product of emotional resilience rather then a contributor. Third, the tend to have a strong internal locus of control, which allows them to see that they have a choice in most situations and are not victims of things beyond their control, which may lead to fatalism. Fourth, they tend to be optimistic, which testifies to the relationship between the GCI *Emotional Resilience* and *Optimism* competencies. Fifth, they understand the value of social support, which is related to the GCI *Relationship Management Domain*.

The American Psychological Association offers ten ways to build emotional resilience, [iv] which are summarized here with an indication of how some of them relate to the GCI. (1) Make connections. Accepting help and support from those who care about you and will listen to you strengthens resilience (*Relationship Management*). (2) Avoid seeing crises as insurmountable problems.You can't change the fact that highly stressful events happen, but you can change how you interpret and respond to these events (*Stress Management*). (3) Accept that change is a part of living. Accepting circumstances that cannot be changed can help you focus on circumstances that you can alter (*Tolerance of Ambiguity*). (4) Move toward your goals. (5) Take decisive actions rather than detaching completely from problems and stresses and wishing they would just go away (*Stress Management*). (6) Look for opportunities for self-discovery and grow from

facing adversity (*Self-Awareness*). (7) Nurture a positive view of yourself (*Self-Confidence*). (8) Keep things in perspective (*Stress Management*). (9) Maintain a hopeful outlook (*Optimism*). (10) Take care of your physical, mental, and emotional well-being (*Stress Management*). All of these strategies can also prove to be very effective in maintaining the ability to function at a high level when interacting in foreign languages in foreign cultures.

Emotional Sensitivity

This dimension measures the capacity to accurately read and comprehend the emotions of others and to understand their feelings from their perspective. It also measures how well one is able to listen genuinely and respond with empathy to the circumstances and challenges they face.

5-point Likert scale anchored with 1 = "Strongly Disagree" and 5 = "Strongly Agree"
Overall Scale Reliability = 0.73 − Cronbach's Alpha

Sample Questions:

✧ I am normally sensitive to even the slightest change in the facial expression of the person I am talking with.

✧ Before acting, I like to think through how it will impact others.

✧ People often come to me because they feel I am understanding of their challenges and problems.

(Note that some questions are reversed-coded in calculating the dimension score.)

Kozai Group's Description of the Emotional Sensitivity (ES) Competency

Emotional Sensitivity refers to the extent to which people have an awareness of, and sensitivity to, the emotions and feelings of others. People high in emotional sensitivity can assess and respond appropriately to the emotional and psychological needs of people around them. Emotional sensitivity is akin to the Big Five personality factor of *Agreeableness*, which refers to a prosocial and communal orientation towards others without antagonism, (John and Srivastava, 1999); (Shaffer et al., 2006), and displaying courtesy and tact, empathy, kindness, and respect (Ones & Viswesvaran, 1997); (Shaffer et al., 2006). Mol and his colleagues (2005) found in their meta-analysis of the expatriate literature that *Agreeableness* is a predictor of expatriate job performance. Similarly, Shaffer et al. (2006) found it to be a key predictor of

interaction adjustment.

Research in both the global leadership and expatriate literatures have found that emotional sensitivity is critical to intercultural effectiveness as it contributes to an individual's ability to: Show appropriate respect to others.[v] Display both interpersonal and cultural empathy.[vi] Show tolerance for differences in others.[vii]

High scorers report being very aware of and sensitive to the emotions and feelings of others; they are also highly attentive to how people feel and very likely to respond with empathy. Low scorers report little interest or awareness of how others are feeling or what they are thinking, and rarely attempt to consider the situations or challenges others may face.

Results for the GCI Self-Management Variable Emotional Sensitivity

In a quantitative study carried out using Kozai Group's Global Competencies Inventory (Keeley, 2014a; Keeley 2014b; Keeley, 2013) 86 Chinese students, studying at a Japanese university in various disciplines, were separated into 5 groups according to their relative performance ratings in 'Japanese Ability' (oral/aural communication).[4] The participants filled out a Chinese version of the GCI. Thereafter, their scores on the GCI were examined in relation to their ratings in 'Japanese Ability'. The results of the ANOVA for *Emotional Resilience* yielded an F Value of 33.28 (Sig. = 0.000) between the 'Top 17' and 'Bottom 17'. Furthermore, the F Value for all five groups was 11.910 (Sig. = 0.000). These high F Values confirm the validity of the correlation and difference of means analyses. Table 3 shows that the correlation between *Emotional Resilience* scores and 'Japanese Ability' are significant for the 'Top 17' and 'Bottom 17' as well as for all 86 participants.

Table 3: Emotional Sensitivity & 'Japanese Ability' Correlation

Scale	Pearson Correlation	Significance (2-Tailed)	Subjects
Emotional Sensitivity	0.707/0.535	0.000/0.000	34/86

Additionally, there is a significant difference between the mean of the 'Top 17' subgroup's scores for *Emotional Sensitivity* and that of the 'Bottom 17' subgroup as can be seen in Table 4.

[4] See Keeley (2013) for the method used to rate the students' 'Japanese Ability'.

Table 4: Differences of Means for Emotional Sensitivity Scores

Optimism	N	Mean	Std. Deviation	Std. Error Mean	Sig. 2-tailed	Mean Difference	Interval 95% Conf.
'Top 17'	17	3.8382	0.4755	0.1153	0.000	0.7721	0.4995 to
'Bottom 17'	17	3.0663	0.2799	0.0679			1.0447

Emotional Sensitivity & Foreign Language Acquisition

"It is axiomatic that we should all think of ourselves as being more sensitive than other people because, when we are insensitive in our dealings with others, we cannot be aware of it all the time: conscious insensitivity is a self–contradiction." – W. H. Auden

The three attributes associated with *Emotional Sensitivity* leading to intercultural effectiveness mentioned above (showing appropriate respect for others, displaying both interpersonal and cultural empathy, and showing tolerance for differences in others) can also be seen to be associated with creating contexts where interaction with native speakers facilitates language acquisition if the sojourner is motivated and seeking to learn the target language. All three attributes set the stage for increased interaction with the native speaker and may help gain the native speaker's assistance in the learning and acquisition process. These attributes are essential skills for effective interpersonal engagement.

Neurobiology of Emotional Sensitivity in Relation to Social Cognition/Behavior

Emotional sensitivity is a central competence in the social cognition. In other words, in this context emotional sensitivity and social cognition/behavior refer to reading and understanding the emotional state of people with whom you are interacting and then adopting the appropriate behavior. The fusiform gyrus and amygdala form a system, sometimes referred to as the fusiform-amygdala system, that plays a key role in emotional sensitivity and social cognition/behavior. The fusiform-amygdala system is central to emotional face-processing performance that allows us to understand the emotional state of others (Dziobek, Bahnemann, Convit & Heekeren, 2010). Low sensitivity to the emotions expressed in other people's faces is correlated with low activity in the fusiform gyrus and high activity in the amygdala. The amygdala is involved in interpreting the 'genuineness' of facial recognition and a disruption of the system may cause

Capgras delusion – the patient believes that a relative or close friend is an identical-looking imposter.

The emotional sensitivity and social cognitive functions of the fusiform-amygdala system can be enhanced. We can create more mindful awareness of how we may be deficient in this competency. We can exercise and improve the efficacy of our awareness by learning more about micro expressions and practice how to read them more effectively. Haggard and Isaacs were the first to discover these Micromomentary expressions (Haggard & Isaacs, 1966). Later Paul Ekman found a high agreement across diverse Western and Eastern cultures on selecting emotional labels that fit facial expressions (Ekman, 1972). He claims that the expression found to be universal included those signifying anger, disgust, fear, happiness, sadness, and surprise. Ekman and Friesen demonstrated that there are culture-specific rules about who can show which emotions to whom and when (Ekman & Friesen, 1971). These display rules may be responsible for how cultural differences may conceal the universal effect of expression. Learning about these cultural differences in display rules is part of the process of enhancing one's ability to interact effectively in cross-cultural situations.

Sensitivity to the 'Personality' of a Language and Culture

All languages and their corresponding cultures can be metaphorically considered to have a personality and the perception of the personality is comprised of factors that move towards objectivity (shared by many) and those that move towards subjectivity (shared by few). The objective-oriented factors stem from the characteristics of the language as well as from the cultural characteristics of the native speakers of the language. The subjective-oriented factors stem from how an individual perceives these traits as a result of use of the language and interaction its speakers. For example, if you ask a dozen multilinguals who speak both German and Brazilian Portuguese to describe the personality or traits of these two languages and cultures, you are most likely to get agreement on a number of traits. The agreed upon traits represent objective-oriented traits and the subjective-oriented traits are those on which the agreement is not as high. However, the important factor is to what extent a language learner develops a perception of a distinct personality for a target language and culture. This becomes an even more important factor as you learn more and more foreign languages.

I find that if my perception of the personality of a target language is robust

and distinct, this perception can assist me in keeping the language separate from other languages or prevent unwanted interference from other languages. Furthermore, the greater the assimilation of the diverse aspects associated with a particular language and its culture (accent, body language, modes of interaction, worldview, etc.) the greater the facilitation of native-like command of the language in active-use. Developing a distinct impression of the personality of a language and culture as well as the assimilation of the above diverse aspects of the language and culture are expressions of emotional sensitivity towards the collective and individual representatives of a target language and culture.

Emotional Sensitivity toward Whom

In the context here, cross-cultural adaptation and foreign language acquisition, the important point is not simply if someone has high emotional sensitivity. We must also consider toward which people the person demonstrates emotional sensitivity. We are primed for empathy (here considered to be synonymous with emotional sensitivity) by strong attachment relationships during the early years of life. There is a natural tendency to be emotionally sensitive toward or emphasize with those people with whom we identify the most. We tend to have more empathy for in-group members than out-group members (Wang, Wu, Liu, Wu & Han, 2015). If you carefully study the bodily reactions of people in a movie theater watching a film, you will notice that people demonstrate differences in the degree and manner that they react to what is happening with different characters in the story. After gathering some evidence from their reactions you can make very educated guesses about whom they identify with the most and for whom they have the most empathy. Notice how you react to different characters in a film, play, or novel. What are the characteristics of the persons with whom you identify the most and toward whom you have the most empathy? Can you imagine taking the point of view of a character if you do not naturally feel a high degree of empathy toward the character?

There are considerable differences among individuals concerning the willingness to expand the circle of people to whom they are emotionally sensitive. Highly emphatic people tend to have an insatiable curiosity about strangers and thus a greater degree of interpersonal engagement. They are willing to strike up conversations with people waiting for a train, in an elevator, while in a queue, etc.[viii] Curiosity can expand our empathy when we get to know people outside our usual social circles and exposes us to new worldviews. When you get to know

people more deeply the possibility of greater empathy occurs. There are examples of people overcoming racial hatred by developing emotional sensitivity towards the despised group through structured interaction. Seligman (1991) identifies curiosity as a key character strength that can enhance life satisfaction. Highly emphatic people are willing to challenge the assumptions they have of other groups and discover commonalities.

Experiential empathy is the most challenging and potentially rewarding. George Orwell (1933) famously dressed up as a tramp to experience the life of the under class in East London. The results of his experiences are recorded in his book *Down and Out in Paris and London*. Orwell experienced a radical change in his beliefs, priorities, and relationships. He developed new friendships and shifted his views on inequality. In the process of learning a new language and experiencing the associated culture we can also benefit in the same way Orwell did. The experience can make us more emotionally sensitive to different types of people and people from different cultures.

We can also develop our emotional sensitivity by being an emphatic conversationalist. This requires listening carefully to others and seeking to understand their emotional states and needs. Furthermore, we need to make ourselves vulnerable. If we are willing to reveal our feelings to someone it will facilitate the creation of a strong emphatic bond. Here we can see the reciprocity of empathy. Israeli-Palestinian reconciliation programs have put this into practice by bringing together families from each side of the conflict that have lost family members in battles. By sharing their stories they realize both groups have suffered the same kind of pain and loss; this results in creating a great deal of empathy between the two groups (Furman, 2013).

Mirror Neurons & Language

Marco Iacoboni and his colleagues at the Transcranial Magnetic Stimulation Lab at UCLA used fMRI to investigate how written phrases describing actions performed by the mouth or the hand influenced mirror neurons that are activated by the sight of those same actions (Rizzolatti, Fogassi & Gallese, (2001). For example, when individuals read literal phrases such as “biting the peach” or “grasping a pen,” certain cortical areas were activated that were also stimulated when the same participants later viewed videos of fruit being bitten or a pen being grasped. Together, the findings suggest that mirror neurons play a key role in the mental ‘re-enactment’ of actions when linguistic descriptions of those

actions are conceptually processed. Their data suggests that we use mirror neurons not only to interpret the actions of other people but also to interpret the meaning of sentences describing the same action.

Researchers have hypothesized that mirror neurons contribute to enabling skills such as empathy, socialized behavior, and language acquisition.[ix] The embodiment of metaphors is also a possible example of the function of mirror neurons in the process of language-related comprehension. Iacoboni has joined the growing number of neurologists exploring the possible relevance of mirror neurons in understanding language disorders in autism (Gallese, Rochat, Cossu & Sinigaglia, 2009). Essentially it points to the connection between autism and deficits in empathy, making it difficult for autistic individuals to understand the emotions of other people leading to language problems. The communication impairment in autism appears to reflect a lack of understanding of the mind. *Theory of mind* refers to the ability to understand another person's mental state, including their beliefs, intents and desires, separate from one's own thoughts, experiences and behaviors (Peterson, 2005). This inability to understand others' intentions and behaviors may help to explain why language is delayed in autistic children, and why a significant portion of them never acquire language at all.

This argument is related to the type of imitation involved in Tomasello's (2003) social-cognitive model of language acquisition. This type of imitation requires translating another person's actions into one's own as a precursor of language development. It is the process by which children first comprehend and use verbal language and it involves understanding the intentions of others. As explained in Tomasello's social-cognitive model, the development of theory of mind typically begins in infancy toward the end of the first year of life, with the emergence of intentional communication such as joint attention (interaction with one another in regard to a stimulus via nonverbal means), simple requesting, and sharing. In particular, joint attention may reflect the child's motivation to communicate, which is an important prerequisite for social interaction (Sigman & Ruskin, 1999). Theory of mind thus relates to the development of language and social communication. It is an essential element in the development of the fundamental ability to understand actions and intentions of others, and to communicate with them effectively.

Tomasello's theory is supported by research that has demonstrated a relationship between joint attention and language development in children with autism. In a longitudinal study reported by Sigman and Ruskin (1999), children with autism were first assessed between 2 and 6 years of age, and assessed again

approximately 8 years later. The results revealed that one of the strongest predictors for subsequent language acquisition and expressive language abilities was responsiveness to bids for joint attention at initial assessment. This observation demonstrates the importance of joint attention in the development of language and communication. In regard to the discussion at hand in this section, developing the ability of joint attention may be seen as related to mirror neurons and emotional sensitivity or empathy. Joint attention is not simply a matter of following specific gestures such as pointing. It also involves comprehension of emotions that express the intention of the interlocutor.

Empathy and Imagination

When you start to develop your powers of empathy and imagination, the whole world opens up to you. – Susan Sarandon

Imagination is a powerful human facility. Albert Einstein said, "Imagination is more important than knowledge. For knowledge is limited to all we now know and understand, while imagination embraces the entire world, and all there ever will be to know and understand." [x] Thus, we can see that imagination can take us beyond our present boundaries of knowledge and perception. The power of imagination is also the ultimate creative power. Practicing the piano in your head creates the same type of neurological changes as real physical practice. We also have seen that mirror neurons facilitate understanding of others' experiences, learning, and mimicking.

Imagination is also a source of the power of empathy. There may be multiple definitions of empathy but one common ingredient is usually the idea that empathy is or essentially involves a special kind of imagining, an imaginative experience that can be described variously as role taking, perspective taking, and imaginative identification. At a very early age we are able to mimic others' emotional responses and experience them as our own, share the gaze of others to a common object, establish mutual relationships, etc. As we mature, the capacity to imagine others' situations and mental states becomes essential to our understanding of the thoughts and feelings that facilitate our interactions with them. The philosopher David Hume based his approach to ethics on the idea of empathy. Hume argues that when you see someone suffering in the act of imagining it you experience the suffering too. [xi] He thought that such sentiments provide the basic motive for acting in an ethical manner towards others. In times

of conflict and cruelty we shut empathy off so we can do things that are unimaginable.

Rabinowitz and Heinborn (1984) examined the relationship between empathy and imagination in an experiment using the daydreaming and night-dreaming scales of the Imaginal Processes Inventory to measure imagination and the Accurate Empathy Scale to rate empathy. They found the greater an individual's imagination, the more empathy the individual will show. On the other hand, individuals with autism typically display a trio of impairments known as 'Wing's triad': problems in social competence, communication, and imagination. Autistic children do not engage in spontaneous play, as non-autistic children tend to do. Instead they engage in repetitive and sometimes obsessional activities. Adults with autism often show little interest in fiction. These observations indicate a deficit in the ability to use human imagination. Autism is often characterized by a delay or lack of development in speech and a failure to respond to the speech of others. Children with autism also display an inability to share and direct attention, to engage in imitation, and to recognize affect. Thus, we see a correspondence between imagination, empathy, social competence, and communication – the acquisition and use of language. With empathy we can develop social competence leading to more effective communication (Rabinowitz & Heinborn, 1984).

Foreign Accents and Empathy – The Weakness of the Critical Period Hypothesis

Flege (1987:162) maintains "an examination of the exiting empirical and theoretical literature leads to the conclusion that there is no conclusive support for the existence of a critical period for human speech learning, and that assuming a critical period does exist may inhibit the search for testable hypotheses concerning the basis for observed adult-child differences in L 2 pronunciation." As Flege is pointing out, there is evidence for adult-child difference in pronunciation of foreign languages but assuming that it is a human ontological limitation blinds us from exploring other explanations that, unlike the critical period hypothesis (CPH), can account for the multitude of counter evidence, in other words that adults can be successful. The results of my quantitative study presented here clearly demonstrate the existence of numerous salient factors not directly related to the concept of a critical period that can account for these differences. Emotional sensitivity, especially in terms of the sensitivity that develops when one identifies with the reference group or individuals of the target foreign language, is one of these important factors.

An alternative to the CPH explanation for differences in accent among learners is derived from the field of sociolinguistics, which claims that socio-affective elements have an effect on accent and that the second language constitutes an image label for the speaker in the presence of a majority group. This is the basis of the observation made above about the personality of a language and the associated culture. I have always noticed that the more I identified with native speakers of a language I am learning the easier it is for me to mimic a native accent and body language. This identification is a form of empathy. The two concepts of identity and empathy are closely related. Think of the phrase 'put yourself in their shoes', for which we could substitute 'have empathy,' 'feel what they feel,' or 'identify with them'. I have also noticed that if I am comfortable mimicking the body language it is easier to mimic the accent.

Among the foreigners who often appear on TV in Japan in the role of 'gaijin' (foreign) commentators, the ones considered to be very fluent in Japanese closely mimic not only the accent and body language but also the way of reacting of the Japanese commentators on the shows. By 'way of reacting', I mean such things as sucking air in noisily and groaning slightly before disagreeing with someone in order to prepare them emotionally for a contrary statement. David Spector is one of the best examples. You can observe him on YouTube and it will be quite clear, even if you cannot speak Japanese. Recently I was discussing these thoughts with a foreigner who has lived in Japan for 13 years already but still has very limited ability in Japanese. I mentioned the example of Spector imitating the Japanese and he said "doesn't it make you want to just slap him?" Unquestionably the attitude he expressed by his reaction accounts for his lack of progress in Japanese.

Accents in Hebrew – Identity and Empathy

The above observations are supported by research carried out in Israel by Ibrahim, Leikin, and Eviatar (2008) at the University of Haifa. Basically, they conclude that the more empathy one has for the native speakers of the foreign language one is speaking, the lighter the accent will be in that language. The researchers also indicated that in addition to personal-affective factors, it has been found that the 'language ego' is also influenced by the sociopolitical position of the speaker towards the majority group. Israel offers a perfect location for exploring SLA due to that fact that, besides the core group of native Hebrew speakers, the population of the country is composed of many immigrants who learn Hebrew. There is also an ethnic minority of Arabs, some of whom learn Hebrew from an

early age and others who learn the language as mature adults.

The participants in the study (students from the University of Haifa) were divided into three groups: 20 native Hebrew speakers, 20 Arabic speakers who learned Hebrew at the age of 7-8, and 20 Russian immigrants who learned Hebrew after the age of 13. The participants' socioeconomic characteristics were identical. All were asked to read out a section from a report in Hebrew, and then to describe – in Hebrew – an image that was shown to them. The pieces were recorded and divided into two-minute sections. Additionally, the participants filled out a questionnaire composed of 29 statements to measure their empathetic abilities. Thereafter, 20 other native speakers of Hebrew listened to the pieces that had been recorded and rated each piece according to accent 'heaviness'. Thus, each participant received a score on the weight of his or her accent and another score for level of empathy. This experimental design was similar to that of the quantitative study I carried out with the GCI and am partially reporting here.

The study showed that the accent level of Russian immigrants and of native Arabic speakers was similar. It also revealed that for the Russian immigrants, there is a direct link between the two measures: the higher the ability to exhibit empathy for others, the weaker the accent. Amongst the Arabic speakers, however, no such link – either positive or negative – between level of empathy and heaviness of accent could be seen. The researchers' hypothesis is that in the group of Arabic speakers, a new factor enters the 'language ego' equation: sociopolitical position. The researchers believe that the pattern among Arabic speakers demonstrates their sentiment toward the Hebrew-speaking majority group, and the Arabs consider their accent as something that distinguishes them from the majority. The research shows that both personal and sociopolitical aspects influence accents additional languages. For identity-based reasons some people do not seek to mimic accents when speaking in a foreign language such as in the case of the native speakers of Arabic. When identity issues are not limiting the mimicking of accents we can see that empathy towards the native speakers of the target language can clearly account for individual differences – such as in the case of Russian speakers of Hebrew.

More on Empathy, Identity, & Accent

Empathy is also predicted to be relevant to acquisition in that the empathic person may be the one who is able to identify more easily with speakers of a

target language and thus accept their input for language acquisition (lowered affective filter). Guiora developed the notion that empathy can be conceptualized as a comprehending modality alongside inference, and intuition. According to Guiora (1965:780), "Empathy is the process of comprehending in which a temporary fusion of self-object boundaries, as in the earliest pattern of object relations, permits an immediate emotional apprehension of the affective experience of another, this sensing being used by the cognitive functions to gain and understanding of the other." Language behavior is a unique and complex attribute of man, not only in the evolutionary sense, but also in the developmental psychology history of each individual. Language behavior evolves within the context of a more general psychological growth. It is reasonable to speculate that even certain structural aspects of language are in part shaped by and express the broader personality context from which they have emerged (Guiora, 1968).

Guiora and his colleagues have suggested that empathy might play a significant role in a learner's relative ability to acquire authenticity or pronunciation in a second language. Along with his colleagues, Guiora studied this relationship with the aid of a test for Micromomentary Expressions (MMEs) to measure the quality of empathy Guiora et al. (1972). The study confirms the original hypothesis that empathy as measured by the test for MMEs is positively related to the ability to authentically pronounce a second language. More empathetic individuals tend to be better listeners and better attuned to the native features of speech; therefore, empathetic individuals tend to acquire a more native-like proficiency in pronunciation. Second language learning exerts a very specific demand with regard to self-representation since a change in accent signals a change in linguistic/cultural identity. The most sensitive index of the ability to take on a new identity (the degree of permeability of the language ego boundaries) is the ability to achieve native-like pronunciation. Empathic capacity is also dependent upon the ability to give up one's separateness of identity. Individual differences in the ability to pronounce a second language should reflect individual differences in empathic ability Guiora et al. (1972).

The most salient determining factors of developing native-like accents in additional languages are not necessarily age-related or age-dependent. They include the degree of relationship interest, flexibility of identity or ego permeability, curiosity, interpersonal engagement, and empathy. Infants are strongly driven by the interactional instinct and once caregivers basically satisfy this need the desire to seek more interaction can wane or be maintained depending on an individual's traits and experiences. People learn to communicate

to satisfy their needs. As people develop a feeling of belonging to specific groups they conform to the modes of communication used by those groups. This will not only determine their accent(s) but also the way they express themselves in terms of numerous aspects of verbal and non-verbal communication.

Schumann (1975) also studied empathy through hypnosis of individuals and concluded that empathy was more than a factor in pronunciation in an L2 and had a positive relationship to overall success in L2 acquisition. Schumann also maintains that emphatic capacity or ego flexibility, particularly as operationalized under the concept of lowering of inhibitions, is best regarded as an essential factor in the overall ability to acquire a second language, rather than simply in the ability to acquire native-like pronunciation. Thus, the concept that lowering inhibitions is an important part for SLA in general is seen in both Schumann's and Guiora's experiments.

Stevick (1978) views learner reluctance to imitate sound patterns of a target foreign language in terms of how the positive effects of empathy may be limited by socio-cultural factors – identity issues. In particular, for a person whose upbringing and previous social development have left him uncomfortable with the people of a certain culture, any success at mimicry of the language of that people will set up conflicts with the self-image he has come to depend on. This observation was evident in the experiment involving Arabs speaking Hebrew in Israel. Concerning pronunciation, Stevick claims that the learner's attitude towards the target culture may be the most significant factor in the level reached (Stevick, 1978). If a learner's own cultural heritage reference group does not approve of the foreign culture of the target language then the learner will have to choose between two alternatives: submit to the pressure of the reference group or defy that pressure and attempt to acquire native-like pronunciation of the target language.

Stevick contends that the subtle 'subphonemic' and 'suprasegmental' aspects of pronunciation, precisely because they are less necessary for intelligibility or for 'academic correctness', are the parts of pronunciation which carry the greatest amount of information about the student's loyalty to his native group or his openness to the target culture (Stevick, 1978). I believe this can also hold true even when there is not a specific target culture associated with the foreign language learning activity. In the case of Japan the main stumbling block is the fear of not sounding like a member of their native linguistic/cultural community when they are studying English in school. Japanese students who have acquired a native-like accent while overseas are quick to hide their ability to sound like a

native in English classes back in Japan for fear being bullied for their differences. Mimicking a native accent in English is often interpreted as an indication of being a traitor to Japanese identity.

Empathy and identity are also elements of Gardner and Lambert's (1959, 1972) integrative orientation for explaining motivational factors. In particular, integrative motivation can facilitate native-like pronunciation and accent. The very existence of high integrative motivation suggests empathy and openness towards the target language native speakers or in the case of ill-defined groups, such as learning English as a lingua franca, empathy and openness towards others not belonging to the learner's heritage language/culture. A person who does not progress in mimicking a native speaker of a target language may be resisting what seems to him/her to be an encroachment on his/her personality. As we have seen identity issues can suppress the power of empathy to facilitate mimicking of accents. We can conceptualize empathy as engendering or promoting somatic experience in the learner of the native speaker's communicative actions. Depending on the degree of successful mimicking, the body will reflect the native speaker at least in the movements of the body associated with vocalization and more comprehensively in all the associated non-verbal communicative embodied actions.

The accumulation of the experience of successfully acquiring additional languages obviously empowers learners in many ways in their quest to learn more languages. One of these ways can be an increase in the ability to use empathy and identity in a facilitative manner − allowing empathy and identification with speakers of the target language. In this process you can lower your inhibitions to mimic their speech and other communicative patterns. You can develop greater empathic resonance in terms of the function of the appropriate mirror neuron circuits. That is to say, in a biological motor-response sense, empathy sets the stage for more sophisticated responses − a more complete mastery over verbal and non-verbal embodied communication responses.

Emotional Intelligence, Foreign Language Anxiety, and Awareness

Dewaele et al. (2008) found that higher levels of emotional intelligence correspond to significantly lower communicative anxiety and foreign language anxiety in all languages known by participants. They concluded that the constellation of emotion-related self-perceptions that trait emotional intelligence

encompasses is inversely related to communicative anxiety and foreign language anxiety levels. They speculated that highly emotionally intelligent multilinguals are better able to read the state of mind of the interlocutor leading to alleviation of their communicative anxiety and foreign language anxiety. Likewise, Schumann (1975:227) suggests that "... the natural factors that induce ego flexibility and lower inhibitions (assumed to relate to increased empathy) are those conditions which make the learner less anxious, make him feel accepted and make him form positive identifications with speakers of the target language."

Part 2: Further Discussion of Affective Factors

Neuroplasticity, Accents in Foreign Languages and Affective Factors

There are many reasons why an accent may sound like a foreign accent such as correct pronunciation of individual words, the quality of phonetic entities, prosody (rhythm, stress, intonation), etc. In relation to phonetic differences between the learner's native language (or other languages that the learner successfully pronounces) and the target foreign language, the ability to distinguish and produce sounds in a new target language that do not have distinct equivalents in one's language repertoire is an important factor. In order to understand variations in accents and pronunciation among fellow speakers of your native language there are neural mappings that subsume all the related sounds that are not important in determining meaning.

This phenomenon of neural mapping subsuming other neural cortex geography is not restricted to language. Merzenich et al. (1996) have described what they call 'brain traps,' that occur when two brain maps, meant to be separate, merge. One example they cite is that if monkey's fingers were sewn together and so forced to move at the same time, the corresponding neural maps for the separate fingers in the brain would fuse, because their neurons fired together and hence wired together. This also occurs when a musician uses two fingers together frequently so when the musician subsequently tries to move only one finger both fingers move. Merzenich claims that the same phenomenon occurs when sounds are not differentiated in a language. One common example is the difficulty of Japanese speakers in distinguishing the difference between *r* and *l*. Each time they are pronounced or not heard without distinction then the non-distinction is reinforced.

Since the basis of the problem is the absence of a differentiated auditory

cortex for certain sounds, the solution is to seek to create differentiation by first introducing exaggerated differences that are noticeable. Thereafter, the sounds are normalized progressively as the subjects successfully differentiate the sounds. The process requires that the speakers always pay close attention throughout the exercises, something not normally done when listening to normal speech. Merzenich concludes that it is possible to teach anyone to speak an accentless second language as an adult with proper training (Ibid).

I have observed this same phenomenon between many languages. In the case of a Korean speaking Japanese, it is not a problem of not being able to distinguish between the sounds represented by が (*ga*) か (*ka*) in Japanese. Koreans also produce and distinguish these two sounds when speaking Korean. However, the phonetic rules of Korean never allow for the '*ga*' sound to be the first sound of a word. On the other hand, Korean phonetics requires that the '*ka*' sound mutate to '*ga*' when it is preceded by another sound in a word (in other word when it is not the first syllable in a word). Thus, when saying the Japanese word for university (大学 – *daigaku*), Koreans can easily imitate the Japanese pronunciation. However, many Koreans do not pronounce the word for student (学生 – *gakusei*), in which the second sound of in the word university comes first, like Japanese native speakers pronounce it. Instead they say what sounds like '*kakusei*'.

Affective factors are playing a significant role in this case. There are Koreans who have been in Japan for more than 20 or 30 years who still fail to pronounce the sound '*ga*' like Japanese do when it is the first syllable of a word. Conversely, there are Koreans that have only been in Japan for a few years and imitate the Japanese pronunciation without difficulty. When observing the behavior of both groups in interaction with Japanese, I can sense a different affective relationship between the individuals from these two groups and the Japanese. The ones who do imitate Japanese pronunciation seem to express a greater affinity towards Japanese people in their behavior. This is evident in their willingness to imitate Japanese patterns of non-verbal communication (for example body language) when interacting with Japanese. They appear to have a more developed sense of a 'Japanese self' coexisting with their identity as a Korean. Their willingness to imitate appears to be accompanied by the development of the ability to notice the differences. When I bring this subject up with Koreans who do correctly imitate Japanese pronunciation they are invariably aware of how many other Koreans do not and confirm that they also sense a difference in affective stance of these Koreans towards the Japanese. As discussed above, recent neurological research

indicates that attention, mindfulness, and noticing are important in the process of developing neurological change – learning.

Foreign accent ultimately as a conscious and/or subconscious choice that is strongly tied to emotions related to identity as discussed in Keeley (2014) and more specifically in Keeley (2016). Of course there are neurological explanations as described above. However, all these limitations can be overcome given motivation and effective training, or even without explicit training when there is a certain threshold of affinity towards the target language group along with a flexibility allowing for the creation of additional linguistic and cultural identities. My own ability to imitate native accents is influenced by my attitudes towards the target group and target language. Actually, it is more willingness than ability. It is also modulated by my emotional state and general mental state at the time I am speaking.

The Effect of Stress & Anxiety on Performance

In the foreign language-learning context, people often talk about stress in terms of creating a stress-free learning environment and talk about anxiety in terms of foreign language anxiety or trait anxiety, etc. In general the exact differences between the terms stress and anxiety are not easily defined. Anxiety is often perceived as more of a short-term state while stress is sometimes seen as lasting for a more extended period of time. However, the symptoms of anxiety and stress are driven by the same set of chemical reactions in the body. In this sense, stress and anxiety are two different terms describing basically the same somatic experience of a higher heart rate, sweaty palms, constrained breathing, an uneasy feeling in the stomach, etc.[xiv]

Anxiety can impair performance especially when the task being performed is complex and demands that we focus our attention. Evidence supporting this generalization has been obtained both when anxiety is regarded as a personality dimension and when it is regarded as a temporary mood state. In Krashen's affective filter hypothesis, anxiety is the third category in which most affective variables can be placed. He asserts that low anxiety appears to be conducive to second language acquisition, whether measured as personal or classroom anxiety. On the other hand, as anxiety increases the affective filter is activated blocking the acquisition of the target language (Krashen, 1982). Furthermore, Macintyre and Gardner (1994) pointed out that some of the strongest correlations between affective variables and achievement measures involve anxiety.

Stress can come from a multitude of sources in cross-cultural environments, particularly when there is a foreign language involved. Anxiety about one's performance in the target language is one particular source of stress. Language anxiety can be defined as the feeling of tension and apprehension associated with second language contexts, including speaking, listening and learning (MacIntyre & Gardner, 1994). In addition to Krashen's affective filter hypotheses relating anxiety to acquisition, there is a substantial amount of research suggesting that anxiety causes cognitive interference in performing specific language-related tasks. For example, MacIntyre and Gardner (1989) found that anxious students learned a list of vocabulary items at a slower rate than less anxious students and had more difficulty in the recall of previously learned vocabulary items. Such cognitive interference, according to Eysenck (1979), is the result of the association between anxiety-arousal and distracting, self-related cognition such as excessive self-evaluation, worry over potential failure and concern over the opinions of others. In such a state, a person suffering from this type of anxiety has his or her attention divided between task-related cognition and self-related cognition, making cognitive performance less efficient. According to MacIntyre and Gardner (1994), this type of cognitive interference is able to explain the negative effects observed for language anxiety.

However, the absence of all language anxiety and the arousal that it generates is not necessarily the perfect condition for language acquisition and performance. McGrath (1982) has theorized that stress (anxiety) may function in a manner similar to that of the inverted-U model of arousal. The arousal model proposes that when arousal is low, performance is low. As arousal increases so does performance to an optimal point. As arousal increases beyond the optimal point then performance falls ultimately to zero (Lundberg, 1982). This suggests that a certain degree of stress (anxiety) may stimulate performance but when stress increases beyond a certain point, performance quickly collapses. Thus, it is possible to speak of facilitating and debilitating anxiety.

However, Williams (1991) believes that we should go beyond the idea of facilitating and debilitating anxiety and consider the Trait-State Anxiety Theory. This theory separates anxiety in a transitory state and a relatively stable personality trait. Anxiety may be conceptualized as a transitory emotional state or condition of the human organism that varies in intensity and fluctuates over time (Spielberger, Gorsuch, & Lushene, 1970). This condition is characterized by tension, apprehension, and activation of the autonomic nervous system. Trait anxiety refers to relatively stable individual differences in anxiety proneness, that

is, to differences between people in the tendency to respond to situations perceived as threating in state-anxiety intensity. Williams concludes that individuals high in trait anxiety may perceive a second language learning situation as more dangerous or threatening than individuals low in trait anxiety and may respond to this threating situation with state anxiety of greater intensity (Williams, 1991).

Some researchers argued that we should focus on anxiety specific to language in order to gain a clearer understanding of the issues (MacIntyre & Gardner, 1989). Horwitz et al. (1986) describe three components of foreign-language anxiety. The first is communication apprehension that occurs when students have mature thoughts and ideas but an immature second-language vocabulary with which to express them leading to frustration and apprehension. The second is fear of negative social evaluation that occurs when students feels that they are not able to make the proper social impression. The third is test anxiety, namely, apprehension over academic evaluation. Subsequently, MacIntyre and Gardner (1989) separated foreign-language anxiety from general anxiety by developing language-related anxiety scales. Their study demonstrated that a clear relationship exists between foreign-language anxiety and foreign-language proficiency. Furthermore, their analysis of the factors suggested that foreign-language anxiety is part of a more general communicative anxiety.

Anxiety related to oral performance can be also considered to be more narrowly defined 'situational anxiety'. There are indications that oral communication can be one of the highest forms of 'situational anxiety' in relation to foreign language usage. For example, S. Y. Kim (1998) found that students in a conversation class experienced higher anxiety levels than students in a reading class. Additionally, in a study of foreign language listening anxiety, J. H. Kim (2000) found a negative relationship between foreign language listening anxiety and listening proficiency in university level English learners in Korea. Numerous other researchers[xv] concur that anxiety in foreign language learning manifests itself primarily in listening and speaking in the foreign language. As previously discussed, oral/aural performance (interview format) was the measure chosen for this quantitative study since it is the foreign language usage that is most likely to reveal individual differences in performance in relation to such affective factors such as anxiety or stress.

Dewaele (2013) found a significant relationship between foreign language anxiety and neuroticism (used as a proxy for trait anxiety), which contradicts the view that foreign language anxiety is totally independent from trait anxiety as

suggested by MacIntyre and Gardner (1989) and indicates that the early finding by Horwitz (1986) of a link between foreign language anxiety and trait anxiety might have been more robust than previously thought. In Dewaele's study the significant relationship between foreign language anxiety and neuroticism was found in the second, third, and fourth languages of adult students in Mallorca and London. The findings suggest that learners who are naturally inclined to worry (high neuroticism) will also worry more about their communication in foreign language classes.

More about Anxiety & Cognitive Interference

Tobias (1986) proposes that cognitive interference may occur at three levels: input, processing, and output. At input, anxiety may cause attention deficits and poor initial processing of information. The less attention we pay to what is being said the less information is registered (input). In processing the input, people with higher anxiety seem easily distracted from the task because time is divided between the processing of emotion-related and task-related cognition. The more difficult the task becomes, relative to ability, the greater the effect of anxiety on processing. At output, anxiety may interfere with the retrieval of previously learned information as in the case of 'freezing' on a test. Overall, MacIntyre and Gardner's (1989) research supported both of these theories. Only test anxiety did not emerge as an important factor in their study.

According to Derakshan and Eysenck (2009) there are two major limitations with using cognitive interference to explain the adverse effects of anxiety on performance. First, the main prediction is that task-irrelevant processing in the form of worry causes anxious individuals to perform tasks worse than non-anxious individuals who are believed to experience fewer task-irrelevant thoughts. However, studies do not always show distinct differences between low-anxious and high-anxious groups. The problem is that the effects of anxiety on performance are not always directly related to worrying. It is an oversimplification to assume that the effects of anxiety on performance are a direct result of being worried. Second, interference theory does not provide a clear picture of the components of the cognitive system that are directly affected by worrying.

Processing efficiency theory addresses this first problem by distinguishing between performance effectiveness and processing efficiency. We can easily measure performance effectiveness in terms of the quality of the performance.

Processing efficiency refers to the relationship between the amount of effort and performance effectiveness. So while task-irrelevant thoughts such as worry and self-preoccupation may lower performance efficiency, they do not necessarily always lead to lower performance. Worrisome thoughts may enhance motivation in anxious individuals to minimize the adverse effects of anxiety. They may apply greater effort at the task – use additional processing resources. In other words, this observation suggests that anxiety impairs processing efficiency more than performance effectiveness (Ibid).

However, task-irrelevant processing (irrelevant thoughts that come to mind) affects the working memory system. Working memory is used most frequently to refer to a limited capacity system that is capable of briefly storing and manipulating information involved in the performance of complex cognitive tasks such as reasoning, comprehension and certain types of learning. Short-term memory refers to information storage without manipulation and is part of working memory. There are a variety of approaches in studying working memory depending on if the interest is neuropsychological, neurobiological, or psychometric (Baddeley and Hitch, 2010). Nevertheless, there is general agreement on a need to assume a role for some form of executive controller, probably of limited attentional capacity, aided by temporary storage systems, with visual and verbal storage probably operating separately (Miyake and Shah, 1999).

Thus, one concept of working memory includes an executive controller that interacts with separate short-term storage of auditory-verbal information (the phonological loop) and visuospatial information (the visuospatial sketchpad). Baddeley (2000) supplemented this initial three-component model with an episodic buffer to account for the way in which the various subsystems could work together and in particular, how they could interface with long-term memory. Since working memory is often subject to investigation in the study of individual differences in foreign language performance as well as central to Derakshan and Eysenck's (2009) discussion of anxiety, I want to take a closer look at it for the readers who may not be familiar with the details of the concept.

The phonological loop subsystem is based on experimental evidence for a temporary verbal or phonological memory system. The phonological loop may support the acquisition of language by providing a temporary means of storing new words while they are consolidated in phonological long-term memory (Baddeley, Gathercole and Papagno, 1998). Evidence for this observation is derived from a study of a patient with a very pure phonological short-term

memory deficit, who found it extremely hard to learn to link new foreign words to their meaning, while performing normally when learning to link pairs of words in her native language (Baddeley, Papagno & Vallar, 1988). This is also the subsystem that is assumed to hold digit sequences for immediate recall. It is also assumed to have two basic components; one is temporary speech-related acoustic store and a subvocal articulatory rehearsal process (Baddeley & Hitch, 2010).

The visuospatial sketchpad's principal function is to create and maintain a visuospatial representation that persists across the irregular pattern of eye movements that characterize our scanning of the visual world (Ibid). It also functions to create and maintain visual images like how to get somewhere in town or to imagine the layout of furniture in redecorating. Spatial tasks can interfere with spatial skills such as driving a car, while a more purely visual activity such as seeing a sequence of pictures or color patches may interfere with the capacity to remember objects or shapes. These observations along with clinical observations of brain-damaged patients lead to the assumption that information about space and about objects with their visual characteristics may be stored separately. It also appears that the sketchpad may be involved in the storage of movement sequences, suggesting a capacity to store kinesthetic information as well as visuospatial information (Ibid).

The central executive is assumed to be an attentional control system of limited processing capacity that has the role of controlling action. Norman and Shallice (1986) suggested that actions are controlled in two ways. First, it automatically controls routine and habitual behavior by a range of schemas and well-learned practices. An example is when you drive a familiar route and do not remember much about the journey upon arriving. When there is a disruption in your routine, such as having to take a different route home due to a road accident, then the second system called the Supervisory Attentional System (SAS) takes over. The SAS is capable of using long-term knowledge in order to set up possible solutions, and reflect on them before choosing the best.

In examining the results of experiments involving high-anxiety groups versus low anxiety groups, Derakshan and Eysenck (2009) suggest that anxiety reduces the available capacity of the central executive but has minimal effects on the phonological loop and visuospatial sketchpad. On the one hand, worry-related thoughts reduce the cognitive efficiency of carrying out tasks that require central executive involvement. On the other hand, concentrating on these tasks reduces worry-related thoughts. Derakshan and Eysenck propose the attentional control theory to specify which functions are more or less affected by anxiety. Among the

functions of the central executive is switching attention between tasks, selective attention and inhibition, updating working memory contents, and coding representations of time and place in working memory.

Note that selective attention and inhibition along with updating working memory contents are very important components of learning and functioning in additional languages. Bilingual/multilingual children tend to have greater executive control than their monolingual counterparts due to the necessity of inhibiting interference of the language system(s) that are not speaking at any given moment. Thus, we see executive control can be increased by successful acquisition and use of foreign languages and that the greater control is not limited to just managing the use of one's language systems.

Attentional control theory predicts that anxiety affects performance via its adverse affects on attention control, a key function of the central executive. It adopts the definition of attentional control in which there is a distinction between top-down goal driven or controlled processes and bottom-up driven processes. It is assumed that there are two attentional systems: one influenced by the individual's current goals, expectations, and knowledge (top-down goal driven system), and the other is the stimulus-driven system, influenced by salient stimuli. Attentional control theory postulates that anxiety disrupts the balance between these two systems by enhancing the influence of stimulus driven bottom-up processes over the efficient top-down goal driven processes. Anxiety is associated with enhanced amygdala activation and reduced recruitment of prefrontal cortical areas of the brain that are heavily involved in top-down regulation of attention especially when attentional focus is required for efficient task performance. In other words, anxiety affects attentional control: a key function of the central executive control component of working memory (Ibid). This discussion is closely related to Krashen's affective filter hypothesis and Schumann's view of the neurobiology of affect in language.

Though there is no consensus concerning the number and nature of functions of the central executive, extensive empirical evidence supports three functions: inhibition, shifting, and updating (Derakshan & Eysenck, 2009). We can examine these in how they may relate to oral performance in a foreign language. Inhibition involves using attentional control to resist disruption or interference from task-irrelevant stimuli or responses, which represents negative attentional control – for example, speaking in the target language and inhibition non-target language interference. Shifting involves using attentional control to shift attention flexibly to ensure that it remains on task-relevant stimuli of current importance,

which is using attentional control in a positive way to enhance task performance – for example, staying within the target language and promoting effective input in the target language. Updating involves updating and monitoring of working memory representations, which is concerned with transient storage of information involving mainly short-term memory rather than attentional control – for example holding words and structures of the target language in mind for use. Derakshan and Eysenck (2009) conclude that anxiety not only impairs processing efficiency more than performance effectiveness, it also impairs the inhibition function and the shifting function.

The adverse effects of anxiety under distraction conditions are greater when the task-irrelevant stimuli are threat-related rather than neutral (Bar-Haim et al., 2007). So, when you are speaking a foreign language and you are worried about how someone perceives your performance, in other words anxious about being perceived as a poor performer, then this anxiety has great potential to disrupt your working memory than if you do not have these ego-threatening distractions. Being anxious about performance is different than simply wanting to perform well. Threat-related stimuli can be external in terms of the situation in which you are speaking the foreign language, such as the people you are talking to, or internally generated such as negative thoughts about your ability. Anxious individuals have an attentional bias for threat-related stimuli and find it harder than non-anxious individuals to disengage from such stimuli (Ibid). In terms of managing anxiety, it is helpful to be aware that we can be in control of our reaction to external stimuli. In reality, we are responsible for our anxiety. To say that someone makes you nervous seems acceptable, but actually realizing that we allow someone to make us nervous gives us power to deal with it.

Concerning the finding that anxiety impairs the shifting function (Derakshan & Eysenck, 2009), I have personally witnessed how anxiety or stress can inhibit switching between languages many times in others and myself. One particular example stands out. I had been fasting, meditating, and practicing yoga in Thailand for two weeks and had just gotten out of the sauna at a Buddhist temple. I was in a state of extreme relaxation in terms of the lack of general stress and anxiety. In addition, I had been interacting in numerous languages during my stay there with the multitude of foreigners at the island in the Gulf of Thailand. A guy at the sauna heard me speaking Thai to some locals and he started speaking in Thai too. He then boasted in Thai that he spoke many languages. I correctly perceived he was German by his accent in Thai and I switched to German. I could see this immediately made him anxious that I had detected a specific influence in

his accent. So he started switching to other languages: French, Italian, Spanish, Russian and so on. Each time I immediately switched to the language he chose. He seemed to grow more anxious as we continued in our little game. His accent in the languages and ability to keep the languages separate began to deteriorate. He seemed to get even more frustrated when he could not find a language that I did not adjust to. At the end of our interaction he seemed fairly depleted of positive emotional energy. I felt a little bad about that but I rationalized that it was his responsibility and that it could prove to be a positive learning experience for him.

Conclusion

This paper has reviewed an extensive array of multidisciplinary literature demonstrating the important role of affective factors (emotions) in determining the degree of success (or failure) in functioning in foreign languages and cultures. In addition, the primary data presented along with related secondary sources of data indicates that our emotions play a significant role in either enhancing or diminishing our ability to speak foreign languages at high levels of proficiency with accents approaching native-like quality as well as our ability to function affectively in cross-cultural environments.

References

Andreason, A. W. (2003). Expatriate adjustment to foreign assignments. *International Journal* of *Commerce and Management*, 13: 42-60.

Arnold, J. (1999). *Affect in Language Learning*. Cambridge: Cambridge University Press.

Arnold, J. & Brown, H. D. (1999). A map of the terrain. In J. Arnold (Ed.), *Affect in Language Learning:* 1-24. Cambridge: Cambridge University Press.

Arthur, W. Jr., & Bennett, W. Jr. (1995). The international assignee: The relative importance of factors perceived to contribute to success. *Personnel Psychology*, 48: 99-113.

Arthur, W. Jr., & Bennett, W. Jr., (1997). A comparative test of alternative models of international assignee job performance. In Z. Aycan (Ed.), *New Approaches to Employee Management. Expatriate Management: Theory and Research*, 4: 141-172. Greenwich, CT: JAI Press.

Baddeley, A. D. (2000). The episodic buffer: A new component of working memory? *Trends in Cognitive Sciences*, 4 (11): 417-423.

Baddeley, A. D., Gathercole, S. E. & Papagno, C. (1998). The phonological loop as a language learning device. *Psychological Review*, 105 (1): 158-173.

Baddeley, A. & Hitch, G. J. (2010). Working memory. *Scholarpedia*, 5 (2): 3015.

Baddeley, A. D., Papagno, C. & Vallar, G. (1988). When long-term learning depends on short-term storage. *Journal of Memory and Language*, 27: 586-595.

Bar-Haim, Y., Lamy, D., Pergamin, L., Bakermans-Kranenburg, M. J. & van Ijzendoorn, M. H. (2007). Threat-related attentional bias in anxious and nonanxious individuals: A meta-analytic study.

Psychological Bulletin, 133: 1-24.
Benet-Martinez, V., Lee, F. & Leu, J. (2006). Biculturalism and cognitive flexibility: Expertise in cultural representations. *Journal of Cross-Cultural Psychology*, 37: 386-407.
Bird, A. & Osland, J. (2004). Global competencies: An introduction. In H. Lane, M. Maznevski, M. Mendenhall & J. McNett (Eds.), *Handbook of Global Management*: 57-80. Oxford: Blackwell.
Bird, A. and Stevens, M. J. (2003). Toward an emergent global culture and the effects of globalization on obsolescing national cultures. *Journal of International Management*, 9 (4): 395-407.
Briscoe, D. R. & Schuler, R. S. (2004). *International Human Resource Management (2nd ed.)*. London: Routledge.
Caligiuri, P. M. (2000). The big five personality characteristics as predictors of expatriate's desire to terminate the assignment and supervisor-rated performance. *Personnel Psychology*, 53: 67-88.
Cui, G. & Awa, N. E. (1992). Measuring intercultural effectiveness: An integrative approach. *International Journal of Intercultural Relations*, 16 (3): 311-326.
Cui, G. & Van den Berg, S. (1991). Testing the construct validity of intercultural effectiveness. *International Journal of Intercultural Relations*, 15: 227-241.
Daly, J. A. (1991). Understanding communication apprehension: An introduction for language educators. In E. K. Horwitz & D. J. Young (Eds.), *Language Anxiety: From Theory and Research to Classroom Implications*: 3-13 Englewood Cliffs, NJ: Prentice Hall.
Damasio, A. R. (1994). *Descartes' Error*. New York: Grosset/Putman.
Damasio, A. R. (2000). *The Feeling of What Happens: Body and Emotion in the Making of Consciousness*. London: William Heinemann.
D'Andrade, R. G. (1984). Cultural meaning systems. In R. A. Shweder & R. A. LeVine (Eds.), *Cultural Theory: Essays on Mind, Self, and Emotion*: 88-119. Cambridge, UK: Cambridge University Press.
Davidson, R. J. (2012). *The Emotional Life or Your Brain*. New York: Plume.
Derakshan, N. & Eysenck, M. W. (2009). Anxiety, processing efficiency and cognitive performance: New developments from attentional control theory. *European Psychologist*, 14 (2): 168-176.
Dewaele, J.-M., Petrides, K. V. & Furnham, A. (2008). Effects of trait emotional intelligence and sociobiographical variables on communicative anxiety and foreign language anxiety among adult multilinguals: A review and empirical investigation. *Language Learning*, 58 (4): 911-960.
Dewaele, J.-M. (2013). The link between foreign language classroom anxiety and psychoticism, extraversion, and neuroticism among adult bi-and multilinguals. *The Modern Language Journal*, 97 (3) 670-684.
Dickinson, L. (1987). *Self-Instruction in Language Learning*. Cambridge. Cambridge University Press.
Dowling, P. J., Schuler, R. S. & Welch, D. E. (1999). *International Human Resource Management: Managing People in a Multinational Context (3rd ed.)*. Cincinnati (USA): South-Western College Publishing.
Dowling, P. J., & Welch, D. E. (2004). *International Human Resource Management: Managing people in an international context (4th ed.)*. London: Thompson learning.
Dulay, H., and M. Burt. (1977). Remarks on creativity in language acquisition. In M. Burt, H. Dulay & M. Finocchiaro (Eds.), *Viewpoints of English as a Second Language*: 95-126. New York: Regents Pub. Co.
Dziobek, I., Bahnemann, M., Convit, A. & Heekere, H. R. (2101). The role of the fusiform-amygdala system in the pathophysiology of autism. Archives of General Psychiatry, 67 (4): 397-405.
Ekman, P. (1972). Universals and cultural differences in facial expressions of emotion. In J. Cole (Ed.), *Nebraska Symposium of Motivation*, 1971 (19): 207-283. Lincoln: University of Nebraska Press.
Ekman, P. & Friesen, W. V. (1971). Constants across cultures in the face and emotion. *Journal of Personality and Social Psychology*, 17 (2): 124-129.
Ellis, R. (1994). *The Study of Second Language Acquisition*. Oxford: Oxford University Press.

Firth, A. & Wagner, J. (1997). On discourse, communication, and (some) fundamental concepts of SLA research. *The Modern Language Journal*, 81: 285-300.

Flege, J. E. (1987). A critical period for learning to pronounce foreign languages? *Applied Linguistics*, 8: 162-177.

Flynn, G. (1995). Expatriate success is no longer just a question of job skills. *Personnel Journal*, 74 (6): 29.

Fruhholz, S., Trost, W. & Grandjean, D. (1974). The role of the medial temporal limbic system in processing voice and music. *Progress in Neurobiology*, 1350: 1-17.

Furman, F. K. (2013). Bereavement, storytelling, and reconciliation: Peace building between Israelis and Palestinians. *Peace and Conflict Studies*, 20 (2):125-151.

Gallese, V., Rochat, M., Cossu, G. & Sinigaglia, C. (2009). Motor cognition and its role in the phylogeny and ontogeny of action understanding. *Developmental Psychology*, 45 (1): 103-113.

Gardner, R. C. (2001). Integrative motivation and second language acquisition. In Z. Dörnyei & R. Schmidt (Eds.), *Motivation and second language acquisition (Technical Report #23):* 422-459. Honolulu: University of Hawaii, Second Language Teaching and Curriculum Center.

Gardner, R. C. & Lambert, W. E. (1959). Motivational variables in second language acquisition. *Canadian Journal of Psychology*, 13: 266-272.

Gardner, R. C. & Lambert, W. E. (1972). *Attitudes and Motivation in Second Language Learning*. Rowley, MA: Newbury House.

Gardner, R. C. & MacIntyre, P. D. (1993). A student's contributions to second language learning: Part II. Affective variables. *Language Teaching, 26*, 1-11.

Gertsen, M. C. (1990). Intercultural competence and expatriates. *International Journal of Human Resource Management*, 3: 341-362.

Graf, A. (2004). Expatriate selection: An empirical study identifying significant skill profiles. *Thunderbird International Business Review*, 46: 667-685.

Graham, L. (2010). The neuroscience of resilience. *The Wise Brain Bulletin*, 4 (6): 2-15.

Guiora, A. Z. (1965). On clinical diagnosis and prediction. *Psychological Reports Journal*, 17: 784-799.

Guiora, A. Z. (1968). Toward a systematic study of empathy. *Comparative Psychiatry*, 8: 375-385.

Guiora, A. Z. (1972). Construct Validity and Transpositional Research: Toward an Empirical Study of Psychoanalytic Concepts. *Comprehensive Psychiatry*, 13: 139-150.

Guiora, A. Z., Acton, W. R., Erard, R. & Strickland, F. W. (1980). The effects of Benzodiazepine (Valium) on permeability of language ego boundaries. *Language Learning*, 30: 351-361.

Guiora, A., Beit-Hallahmi, B., Brannon, R. C. L., Dull, C. Y. & Scovel, T. (1972). The effect of experimentally induced changes in ego states on pronunciation ability in a second language: An exploratory study. *Comprehensive Psychiatry* 13: 421-438.

Guiora, A. Z., Brannon, R. C. & Dull, C. Y. (1972). Empathy and second language learning. *Language Learning*, 22 (1): 111-130.

Guiora, A. Z., Lane, H. L. & Bosworth, L. A. (1967). An exploration of some personality variables in authentic pronunciation of a second language. In H. L. Lane & E. M. Zale (Eds.), *Studies in Language and Language Behavior. Progress Report IV*. Ann Arbor, Mich. Center for Research on Language and Language Behavior.

Haggard, E. A. & Isaacs, K. S. (1966). Micro-momentary facial expressions as indicators of ego mechanisms in psychotherapy. In L. A. Gottschalk & A. H. Auerbach (Eds.), *Methods of Research in Psychotherapy*: 154-165. New York: Appleton-Century-Crofts.

Haslberger, A. (2005). Facets and dimensions of cross-cultural adaptation: refining the tools. *Personnel Review*, 34 (1): 85-109.

Hong, Y., Benet-Martínez, V., Chiu, C. & Morris, M. (2003). Boundaries of cultural influence: Construct activation as a mechanism for cultural differences in social perception. *Journal of Cross-Cultural*

Psychology, 34: 453-464.
Horwitz, E. K., Horwitz, M. B. & Cope, J. (1986). Foreign Language Classroom Anxiety. *The Modern Language Journal*, 70 (2): 125-132.
Hudson, S. & Inkson, K. (2006). Overseas development workers: "Big Five" personality scores. *Journal of Pacific Rim Psychology*, 1 (1): 5-9.
Hurd, S. (2008). Affect and strategy use in independent language learning. In S. Hurd & T. Lewis (Eds.), *Language Learning Strategies in Independent Settings. Second Language Acquisition*: 218-236. Bristol, UK: Multilingual Matters.
Ibrahim, R., Eviatar, Z. & Leikin, M. (2008). Speaking Hebrew with an accent: Emphatic capacity or other nonpersonal factors. *International Journal of Bilingualism*, 12:195-207.
Introini-Collison, I., Miyazaki, B. & McGaugh, J. (1991). Involvement of the amygdala in the memory-enhancing effects of clenbuterol. *Psychopharmacology*, 104: 541-544.
John, O. P., & Srivastava, S. (1999). The Big-Five trait taxonomy: History, measurement, and theoretical perspective. In L. Pervin & O. P. Johns (Eds.), *Handbook of personality: Theory and research (2nd Edition)*: 102-138. New York: Guilford.
Johnson, J. P., Lenartowicz, T. & Apud, S. (2006). Cross-cultural competence in international business: Toward a definition and a model. *Journal of International Business Studies*, 37: 525-543.
Jordan, J. & Cartwright, S. (1998). Selecting expatriate managers: Key traits and competencies. *Leadership and Organization Development Journal*, 19 (2): 89-96.
Kealey, D. J. (1989). A study of cross-cultural effectiveness: Theoretical issues, practical applications. *International Journal of Intercultural Relations*, 13: 387-428.
Kealey, D. J. (1994). *Overseas screening and selection: A survey of current practice and future trends*. Hull, Canada: CIDA.
Kealey, D. J. (1996). The challenge of international personnel selection. In D. Landis & R. S. Bhagat (Eds.), *Handbook of Intercultural Training (2nd edition)*: 81-105. Thousand Oaks, CA: Sage Publications.
Kealey, D. J., & Ruben, B. D. (1983). Cross-cultural personnel selection: Criteria, issues and methods. In D. Landis & R. W. Brislin (Eds.), *Handbook of Intercultural Training, (Vol. 1)*: 155-175. New York: Pergamon Press.
Keeley, T. D. (2013). "Kozai Group's Global Competency Inventory as a Predictor of Oral Performance in Foreign Languages." *Journal of Industry and Management of Industrial Management Institute*, Vol. 45: 13-34.
Keeley, T. D. (2014 a). The importance of self-identity and ego permeability in foreign culture adaptation and foreign language acquisition. Kyushu Sangyo University, Keieigaku Ronshu 25 (1): 65-104.
Keeley, T. D. (2014 b). "Psychological Traits Affecting Both Cultural Adaptation and Foreign Language Acquisition." In L. Jackson, D. Meiring, F. J. R. van de Vijver & E. Idemudia (Eds.), *Towards Sustainable Development through Nurturing Diversity*. IACCP ebooks. www.iaccp.org/drupal/ebooks.
Keeley, T. D. (2016). Is a native-like accent in a foreign language achievable? Kyushu Sangyo University, Keieigaku Ronshu 26 (4): 59-92.
Kelley, C. & Meyers, J. (1992). *The Cross-Cultural Adaptability Inventory*. Minneapolis: National Computer Systems, Inc.
Killcross, S. (2000). The amygdala, emotion and learning. *The Psychologist*, 13 (10): 502-508.
Kim, J. H. (2000). Foreign language listening anxiety: A study of Korean students learning English. *Unpublished doctoral dissertation*, The University of Texas, Austin.
Kim, S. Y. (1998). Affective experiences of Korean college students in different instructional contexts:

Anxiety and motivation in reading and conversation courses. *Unpublished doctoral dissertation*, The University of Texas, Austin.

Koester, J. & Olebe, M. (1988). The Behavioral Assessment Scale for Intercultural Communication Effectiveness. *International Journal of Intercultural Relations*, 12: 233-246.

Kühlmann, T. M. & Stahl, G. K. (1996). Fachkompetenz alien genügt nicht— Interkulturelle Assessment Center unterstützen die gezielte Personalauswahl. *Personalführung Plus*, 96: 22-24.

Kühlmann, T.M., & Stahl, G. K. (1998). Diagnose interkultureller Kompetenz: Entwicklung und Evaluierung eines Assessment Centers. In C. Barmeyer & J. Bolten (Eds.), *Interkulturelle Personalorganisation:* 213-223. Berlin: Verlag Wissenschaft & Praxis.

Krashen, S. D. (1982). *Principles and Practice in Second Language Learning*. Oxford: Pergamon Press.

LeDoux, J. (1996). *The Emotional Brain*. New York: Simon and Shuster.

Locke, R. L., Davidson, R. J., Kalin, N. H. & Goldsmith, H. H. (2009). Children context inappropriate anger and salivary cortisol. *Developmental Psychology*, 45 (5): 1284-1297.

Luna, D., Ringberg, T. & Peracchio, L. A. (2008) One Individual, Two Identities: Frame-Switching Among Biculturals. *Journal of Consumer Research*, 35 (2): 279-293.

Lundberg, U., (1982). Psychophysiological aspects of performance and adjustment to stress. In K. W. Krohne & L. Laux (Eds.), *Achievement, Stress and Anxiety*: 75-91. New York: Hemisphere Publishing Corporation.

MacIntyre, P. D. & Gardner, R. C. (1989). Anxiety and second language learning: Toward a theoretical clarification. *Language Learning*, 39: 251-275.

Marian, V. & Neisser, U. (2000). Language-dependent recall of autobiographical memories. *Journal of Experimental Psychology: General*, 129 (3): 361-368.

Marinetti, C., Moore, P., Lucas, P. & Parkinson, B. (2010). "Emotions in social interactions: Unfolding Experience." *Emotional Oriented Systems*, pp. 31-46.

Martin, J. N., & Hammer, M. R. (1989). Behavioral categories of intercultural communication competence: Everyday communicators' perceptions. *International Journal of Intercultural Relations*, 13: 303-332.

McCall, M. W. Jr. & Hollenbeck, G. P. (2002). *Developing global executives*: *The lessons of international experience*. Boston: Harvard Business School Press.

McGrath, J. E., (1982). Methodological Problems in Research on Stress. In K. W. Krohne & L. Laux (Eds.), *Achievement, Stress and Anxiety*. New York: Hemisphere Publishing Corporation.

Mead, R. (1998). *International Management: Cross-Cultural Dimensions (2nd ed.)*. Oxford: Blackwell Publishing.

Mendenhall, M. & Osland. J. S. (2002). An overview of the extant global leadership research. *Symposium presentation at the Academy of International Business*, Puerto Rico, June 2002.

Merzenich M. M., de Charms C. (1996).Neural representations, experience and change, in *The Mind-Brain Continuum*, eds Llinas R., Churchland P., editors. (Boston, MA: MIT Press), 61-81.

Miyake, A., & Shah, P. (1999). *Models of Working Memory: Mechanisms of Active Maintenance and Executive Control*. New York: Cambridge University Press.

Mol, S. T., Born, M. P., Willemson, M. E. & Van der Molen, H. (2005). Predicting expatriate job performance for selection purposes: A quantitative review. *Journal of Cross-Cultural Psychology*, 36 (5): 590-620.

Moro Bueno, C. & Tubbs, S. (2004). Identifying global leadership competencies: An exploratory study. *Journal of American Academy of Business* 5 (1/2): 80-87.

Neal, M. (1998). *The Culture Factor: Cross National Management and the Foreign Venture*. Baskingstoke, UK: McMillan Press.

Neyer, A.-K. & Harzing, A.-W. (2008). Lessons learned from the European Commission. *European*

Management Journal, 26 (5): 325-334.

Norman, D. A. & Shallice, T. (1986). Attention to action: Willed and automatic control of behavior. In R. J. Davidson, G. E. Schwartz & D. Shapiro (Eds.), *Consciousness and self-regulation. Advances in research and theory,(Vol. 4):* 1-18. New York: Plenum Press.

Oatley K. & Jenkins, J. (1996). *Understanding Emotions*. Cambridge, MA: Blackwell.

Oguri, M., & Gudykunst, W.B. (2002). The influence of self-construals and communication styles on sojourners' psychological and socio-cultural adjustment. *International Journal of Intercultural Relations*, 26 (5): 577-593.

Olebe, M., & Koester, J. (1989). Exploring the cross-cultural equivalence of The Behavioral Assessment Scale for Intercultural Communication Effectiveness. *International Journal of Intercultural Relations*, 13: 333-347.

Ones, D.S. & Viswesvaran, C. (1997). Personality determinants in the prediction of aspects of expatriate job success. In Z. Aycan (Ed.), *New approaches to employee management*: 63-92 Greenwich, CT: JAI Press.

Orwell, G. (1933). *Down and Out in Paris and London*. London: Victor Gollancz Ltd.

Oxford, R. (1990). *Language Learning Strategies: What Every Teacher Should Know*. Harlow: Longman.

Ożańska-Ponikwia, K. (2012). What has personality and emotional intelligence do with 'feeling different' while using a foreign language? *International Journal of Bilingual Education and Bilingualism*, 15 (2): 217-234.

Payne, J. D. & Nadel L. (2004). Sleep, dreams, and memory consolidation: The role of the stress hormone cortisol. *Sleep & Memory*, 11: 671-678.

Peterson, C. C. (2005). Mind and body: concepts of human cognition, physiology and false belief in children with autism or typical development. *Journal of Autism Development Disorder*, 35: 487-497.

Price, M. L. (1991). The subjective experience of foreign language anxiety: Interviews with highly anxious students. In E. K. Horwitz & D. J. Young (Eds.), *Language anxiety: From Theory and Research to Classroom Implications*: 101-108. Upper Saddle River, NJ: Prentice Hall.

Rabinowitz, A. & Heinborn, L. (1984). Emapthy and imagination. *Imagination, Cognition and Personality*, 4 (3): 305-312.

Ramirez-Esparza, N., Gosling, S. D., Benet-Martinez, V., Potter, J. P. & Pennebaker, J. W. (2006). Do bilinguals have two personalities? A special case of cultural frame switching. *Journal of Research and Personality*, 40: 99-120.

Rizzolatti G., Fogassi L. & Gallese V. (2001). Neurophysiological mechanisms underlying the understanding and imitation of action. *Nature Reviews Neuroscience*, 2 (9): 661-670.

Ronen, S. (1986). *Comparative and Multinational Management (4th ed.)*. New York: John Wiley & Sons, Inc.

Ronen, S. (1989). Training the international assignee. In I. L. Goldsten (Ed.), *Training and development in organizations*: 417-453. San Francisco: Jossey-Bass.

Ruben, B. D. & Kealey, D. J. (1979). Behavioral assessment of communication competency and the prediction of cross-cultural adaptation. *International Journal of Intercultural Relations*, 3: 15-47.

Sargent, J., & Matthews, L. (1998). Expatriate reduction and mariachi circle trends in Mexico. *International Studies of Management and Organization*, 28 (2): 74-96.

Schaefer, S. M., Jackson, D. C., Davidson, R. J., Aguirre, G. K., Kimberg, D. Y. & Thompshon-Schill, S. L. (2002). Modulation of amygdalar activity by the conscious regulation of negative emotion. *Journal of Cognitive Neuroscience*, 14 (6): 913-921.

Schneider, S. C. & Barsoux, J-L. (1997). *Managing Across Cultures*. Great Britain: Biddles Ltd, Guildford and King's Lynn.

Schumann, J. H. (1975). Affective factors and the problem of age in second language acquisition.

Language Learning, 25: 209-35.

Schumann, J. H. (1976). Social distance as a factor in second language acquisition. *Language Learning*, 26 (1): 135-43.

Schumann, J. H. (1978). The acculturation model for second-language acquisition. In R. C. Gingras, (Ed.), *Second Language Acquisition and Foreign Language Teaching*. Washington, D.C.: Center for Applied Linguistics.

Schumann, J. H. (1986). Research on the acculturation model for second language acquisition. *Journal of Multilingual and Multicultural Development*, 7 (5): 379-392.

Schumann, J. H. (1997). *The Neurobiology of Affect in Language*. Oxford: Blackwell.

Schumann, J. H. & Wood, L. A. (2004). The neurobiology of motivation. In J. H. Schumann et al., *The Neurobiology of Learning: Perspectives from Second Language Acquisition:* 23-42. Mahwah, NJ: Lawrence Erlbaum.

Seligman, M. (1991). *Learned Optimism*. New York: Knopf.

Selmer, J. (1999). Career issues and international adjustment of business expatriates. *Career Development International*, 4 (2): 77-87.

Selmer, J. (2001). Psychological barriers to adjustment and how they affect coping strategies: Western business expatriates in China. *International Journal of Human Resource Management*, 12 (2): 151-165.

Selmer, J. (2006). Language ability and adjustment: Western expatriates in China. *Thunderbird International Business Review*, 48 (3): 347-368.

Shaffer, M. A., Harrison, D. A., Gregersen, H., Black, J. S., & Ferzandi, L. A. (2006). You can take it with you: Individual differences and expatriate effectiveness. *Journal of Applied Psychology*, 9(1): 109-125.

Sigman, M. & Ruskin, E. (1999). Continuity and change in the social competence of children with autism, Down syndrome, and developmental delays. *Monographs of the Society for Research in Child Development*, 64: 1-63.

Spielberger, C. D., Gorsuch, R. L., & Lushene, R. E. (1970). *Manual for the State-Trait Anxiety Inventory*. Palo Alto: Consulting Psychologist Press.

Stern, H. H. (1983). *Fundamental Concepts of Language Teaching*. Oxford: Oxford University Press.

Stevick, E. W. (1978). Toward a practical philosophy of pronunciation: Another View. *TESOL Quarterly*, 12 (2): 145-150.

Stevick, E. W. (1999). Affect in learning and memory: from alchemy to chemistry. In J. Arnold (Ed.) *Affect in Language Learning:* 43-57. Cambridge: Cambridge University Press.

Stickgold, R., Hobson, J. A., Fosse, R. & Fosse, M. (2001). Sleep, Learning, and Dreams: Off-line Memory Reprocessing. *Science*, 294 (5544): 1052-1057.

Sudweeks, S., Gudykunst, W. B., Ting-Toomey, S. & Nishida, T. (1990). Developmental themes in Japanese-North American interpersonal relationships. *International Journal of Intercultural Relations*, 14: 207-233.

Tayeb, M. (1998). *The Management of a Multicultural Workforce*. England: John Wiley & Sons.

Taylor, S. & Napier, N. (1996). Working in Japan: lessons from women expatriates. *Sloan Management Review*, Spring: 76-84.

Tobias, S. (1986). Anxiety and cognitive processing of instruction. In R. Schwarzer (Ed.) *Self-related Cognition in Anxiety and Motivation*: 35-54. Hillsdale, NJ: Lawrence Erlbaum Associates.

Tomasello, M. (2003). *Constructing a Language: A Usage-based Theory of Language Acquisition*. Cambridge: Harvard University Press.

Wang, C., Wu, B., Liu, Y., Wu, X. & Han, S.(2015). Challenging emotional prejudice by changing self-concept: priming independent self-construal reduces racial in-group bias in neural responses to other's pain. *Social Cognitive & Affective Neuroscience*, nsv005v2-nsv 005.

Williams, K. (1991). Anxiety and Formal Second/Foreign Language Learning. *RELC Journal*, 22:19.

Willis, J. (2007a). *Research-Based Strategies to Ignite Student Learning: Insights from a Neurologist and Classroom Teacher*. Alexandria, VA: Association for Supervision & Curriculum Deve.

Willis, J. (2007b). The gully in the 'brain glitch' theory. *Improving Instruction for Students with Learning Needs*, 64 (5): 68-73.

Wiseman, R. L. & Shuter, R. (1994). *Communicating in Multinational Organizations*. Thousand Oaks, CA: Sage.

Yang, K. S. & Bond, M. H. (1980). Ethnic affirmation by Chinese bilinguals. *Journal of Cross-Cultural Psychology*, 11 (4): 411-425.

Young, D. J. (1990). Creating a low-anxiety classroom environment: What does language anxiety research suggest? *The Modern Language Journal*, 75 (4): 426-437.

[i] http://www.wisdomcommons.org/virtues/108-resilience Accessed Mar. 15, 2017.

[ii] https://www.fammed.wisc.edu/research/external-funded/mindfulness-meditation-health Accessed Jan. 5 2017.

[iii] http://www.afs60.de/webcontent/files/MbM_Abarbanel.pdf, Accessed December 28, 2016.

[iv] http://www.apa.org/helpcenter/road-resilience.aspx#, Accessed December 29, 2016.

[v] Arthur and Bennett (1995, 1997); Cui & Awa (1992); Gertsen (1990); Hudson and Inkson (2006); Jordan and Cartwright (1998); Kealey (1994); Kealey and Ruben (1983); Koester & Olebe (1988); Moro Bueno & Tubbs (2004); Olebe and Koester (1989); Ronen (1989); Ruben & Kealey (1979).

[vi] Arthur and Bennett (1995, 1997); Cui & Awa (1992); Cui and Van Den Berg (1991); Gertsen (1990); Hechanova et al. (2003); Hudson and Inkson (2006); Jokinen (2005); Jordan & Cartwright (1998); Kealey (1994); Koester & Olebe (1988); Kühlmann & Stahl (1996, 1998); Martin & Hammer (1987); McCall and Hollenbeck (2002); Mendenhall and Osland (2002); Moro Bueno and Tubbs (2004); Oguri & Gudykunst (2002); Ruben & Kealey (1979); Ronen (1989); Sudweeks, Gudykunst, Ting-Toomey, & Nishida (1990).

[vii] Arthur and Bennett (1995, 1997); Cui & Awa (1992); Gertsen (1990); Hudson & Inkson (2006); Jordan & Cartwright (1998); Kealey (1994); Kealey & Ruben (1983); Ronen (1989); Selmer (1999, 2001).

[viii] https://coachingconrucopia.wordpress.com/category/personal-development/ Accessed April 1, 2017.

[ix] http://phys.org/news 78073175.html Accessed July 13, 2016.

[x] https://www.goodreads.com/quotes/556030-imagination-is-more-important-than-knowledge-for-knowledge-is-limited Accessed March 30, 2016.

[xi] https://philosophynow.org/issues/52/Empathy_and_Imagination Accessed Dec. 9, 2016.

[xii] Subcortical brain structures of the limbic system, such as the amygdala, are thought to decode the emotional value of sensory information (Fruhholz, Trost and Grandjean, 2014).

[xiii] D'Andrade (1984) explored these meaning systems in depth.

[xiv] Ventricular Fibrillation: New Insights for the Healthcare Professional: 2013 Edition.

[xv] e.g., Daly (1991); Price (1991); Young (1990).