CHAPTER 5

LANGUAGE ATTACHMENT THEORY: THE POSSIBILITIES OF CROSS-LANGUAGE RELATIONSHIPS

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Globalization in higher education has brought with it growing numbers of students whose home language is not English. Many of these students come to higher education believing that their English skills are sufficient to participate in the academic community, but on arrival, are disillusioned by the fact that their English test scores can be high while their ability to interact within the composition course is severely limited. Bakhtinian theory and findings from social neuroscience shed light on this phenomenon. For Mikhail Bakhtin (1987), every word is already embedded in a history of expressions by others in a chain of ongoing cultural and political movements, so that

> when we select words in the process of constructing an utterance, we by no means always take them from the system of language in their neutral, *dictionary* form. We usually take them from *other utterances,* and mainly from utterances that are kindred to ours in genre, that is, in theme, composition, or style. (p. 87)

Bakhtin is ascribing a social nature to language, which he calls "interindividual," one in which the writer mirrors others with whom he or she feels a "kindredness" or relational bond. Dirk Remley's discussion of mirror neurons also comes into play here, as he explains the dynamic nature of speaker and audience response. "As a speaker positions him or herself closer to that reality and shared experiences of the audience he or she mirrors that audience and the audience understands that mirroring, eliciting empathy and favor from the audience" (Remley, this volume). Adding the understanding of mirror neurons to Bakhtin's theory generates a more interactive component to language, one in which the writer seeks to align with the audience and the audience with the writer. A word becomes

more than the concept or the symbol it represents. A word becomes imbued with a neural network of words, meanings, emotions, and contexts, which this chapter argues are best constructed in human relationships. The human element engages the brain, as the language of the writer is shaped through the social world and the kindred voices that world offers.

But, what if, a language or even a word, is learned devoid of this social "interindividual" context in which audience and speaker interact, such as in the case of many of the L2 writers in our composition courses? As part of an IRB-approved mixed-method study titled *Language Attachment: The Impact of Social Bonding in Adult Language Learning,* I read and analyzed 77 language autobiographies written by international students in my composition courses. From these narratives, a common theme emerged: English as a Second Language had been mainly studied for test achievement, with methods such as textbook memorization and cram schools that emphasize grammar over communication. In agreement with Peter Khost (this volume), high stakes testing and test prep worked to suppress creativity, engagement, and curiosity in these students and in many of their EFL contexts, there was a lack of opportunities to interact in English in cross-cultural communication (Chen & Yang, 2014). In light of these findings, it is not surprising that second language studies have found that research participants often report less emotional connectivity in the L2 (Chamcharatsri, 2012; Dewaele, 2008; Pavlenko, 2005) as well as difficulty understanding the social and cultural context of language (Rintell, 1990). Findings from social neuroscience offer a framework for analysis of this phenomenon. Research on memory formation now integrate what Bakhtin theorized, mainly, that the emotions, social context, and human interactions that occur during the encoding of memory will become part of the fabric of that memory, which can be stored in multiple areas of the brain (Cozolino, 2002; Schumann, 1997). When someone whose L1 is English hears a single utterance, for example, "San Francisco," both implicit (unconscious) and explicit (conscious) memories and emotions associated with that utterance could be present because of past exposure to the word in social contexts. The song "If you're going to San Francisco" by Scott McKenzie, the American TV series *Full House* (Franklin, 1987), support for the LGBT community, or a past trip taken there could all impact recall of this utterance for an American L1 English speaker. There is a complex neural network connected to this concept, which causes resilience in learning. Because the frames of reference are robust, the term is deeply embedded in memory. However, many L2 writers lack this type of heteroglossia due to lack of emotional experiences and social engagements in their L2. Moreover, students in my study who considered their early English learning environments to be "stressful," "pressured," or even "traumatizing"

often re-experienced negative emotions when producing English. Those whose language acquisition was primarily a process in which words are taken from "the system of language in their neutral, *dictionary* form" (text memorization) rather than from "other utterances" (Bakhtin, 1987, p. 86) often lack certain types of L2 language fluency, ones that are socio-emotional and socio-cultural (Rintell, 1990). Moreover, many associate English with feelings of anxiety, stress, and low self-worth.

Department leaders, composition instructors, and L2 writers in expository writing programs search for avenues to mitigate these types of issues, but have found traditional ESL pedagogies insufficient to bring students to this next level of language use. It is in this problematic area that my contribution, the theory of "language attachment," offers insight. Language attachment theory holds that human bonding is central to language acquisition in both infants and adults, and it seeks to reframe and extend existing pedagogical practices in composition accordingly. These relationships, *language attachments*, are in no way meant to bring L2 writers closer to a native speaker model, but to benefit both L1 and L2 English writers through development of cross-cultural repertoires able to rhetorically respond in a globalized world. Language attachment theory emerged from my interdisciplinary work with the University of Washington's Language and Rhetoric program and the Institute for Learning Brain Sciences (ILABS). Relying on support from both departments, I developed language attachment theory and am currently testing its application in the composition classroom.

This chapter argues that language attachments are both the practical means by which composition instructors can offer L2 writers more embodied rhetorical repertoires as well as a helpful approach through which L1 English writers can develop cross-cultural repertoires for addressing various types of cultural audiences who use World Englishes (Schaub, 2003). Beginning with a review of neurological language development studies and behavioral psychology's well-known "attachment theory," the chapter will interweave understandings of how human engagement has been found as the catalyst for both changes in neural activity leading to language acquisition— "the social gating hypothesis" and the formation of behavioral patterns, *attachment styles,* in human relationships. Following the review, the chapter will describe language attachment theory in detail, showing how the social attachments created in a language impact the brain, emotions, and expressions of the bilingual writer. Support for this theory comes from a range of studies on the bilingual brain (Pallier et al., 2003), behavioral and relational psychology (Cozolino, 2013), and cross-linguistic differences in emotion (Pavlenko, 2005). The chapter ends by situating language attachment theory within the field of composition as a clearer frame with which to pursue a set of pedagogical practices aiming to accomplish the following goals:

1. Encourage intercultural understandings that reduce isolating behaviors,
2. Support socio-cultural and emotional fluency in L2 writers, and
3. Promote bilingualism and global e-connection as a norm in the class-room.

This theory could be beneficial for both aiding department leaders and composition instructors as they deal with overall issues of diversity that emerge in the classroom (Horner, Lu, & Matsuda, 2010) and as they work to internationalize the field of composition (Schaub, 2003). The chapter concludes with a call for researchers to investigate this new avenue of thought, particularly in its application to composition classroom. The term *cognition/cognitive* is used broadly in this chapter, to encompass its use across both the fields of cognitive psychology and social neuroscience.

LITERATURE REVIEW

Patricia Kuhl, co-director of the University of Washington's Institute for Learning and Brain Sciences (ILABS), posed the "social gating" hypothesis in 2007, as the result of her work on language acquisition in the infant brain. I will briefly recount some of the history of her hypothesis to offer a clearer understanding of its context. In 1992, Kuhl, Karen Williams, Francisco Lacerda, Kenneth Stevens, and Björn Lindblom were trying to understand why and how an infant's brain could acquire any global language from birth to nine months. Their study was built on the understanding that the infant brain had a sensitive period for language, in which the phonemes of any language could be discriminated and potentially acquired (Kuhl et al., 1992). According to these cognitive psychologists, the infants were conducting "statistical analysis" on the phonemes of their first languages by paying attention to and retaining the ability to distinguish the phonemes they heard most frequently. With age, infants lost their ability to distinguish between less frequent sounds. Understood linguistically, between six and nine months, a shift occurs in the learners to begin to normalize the input of a target language's phonetic identity due to the regularity of those specific sounds, and with this shift, the brain optimizes toward the language being heard and used, saving energy by no longer retaining that "global" ability to acquire any language in the world.

Curious if an environment could be created where infants did not lose this ability, Kuhl, Feng-Ming Tsao, and Huei-Mei Liu (2003) designed two experiments. The first tested nine-month-old American infants, who had only been exposed to English. They separated the American infants into two groups—a control group that only heard more English and a test group which was exposed

to a live L2 Mandarin tutor as the source of L2 input. Findings showed that infants in the test group did retain the ability to distinguish the phonemes in both English and Mandarin, even showing performance levels equal to Taiwanese infants that had grown up hearing Mandarin only. In addition, the window of time for having this phonetic distinguishing ability, normally six to nine months, was extended in this "bilingual" group. The other group, the control group only exposed to more English, as expected, did not acquire the ability to distinguish Mandarin phonemes. However, the social element—the live Mandarin tutor—was yet to be understood. Did the medium of language exposure impact language acquisition? Would infant brains respond similarly to videos or audios of Mandarin?

Therefore, the second experiment evaluated when an infant brain would be triggered to perform statistical analysis on the phonemes in a new language. American infants only exposed to English were recruited and grouped into three separate groups. Each was exposed to Mandarin twelve times over a four-week period. Group 1 listened to audio of the Mandarin tutors. Group 2 watched videos of the Mandarin tutors. And Group 3, she explains in her 2010 TED talk, had what we might think of as "Mandarin relatives visiting for a month" (Kuhl, 2010). As shown previously in this same study (Kuhl et al., 2003), the live L2 tutor, who played, read stories, and interacted with the infants caused those infant brains to respond to the new language. Groups without this social engagement showed absolutely no acquisition of Mandarin phonemes; whereas both English and Mandarin phonetics were maintained in those participants who had exposure to a live Mandarin tutor, creating the possibility for a future English-Mandarin bilingual.

From this study, among many others, Kuhl (2007) posed the "social gating hypothesis," which holds that social interaction opens the brain to perform the internal work of phonetic analysis of a new language. In this article, she claims that language is gated by the motivating properties (such as attention and arousal) inherent in social interactions (2007, p. 114), and her hypothesis, if correct, would hold that the degree of social interaction and engagement with the tutor would correlate with language learning. Barbara Conboy and Kuhl (2011) confirmed this correlation by expanding their tests to include both phonetic learning and word learning as well as added measures for specific interactions, and found that, indeed, increased social engagement, (i.e., shown through shifting eye gaze from the tutor's eyes to the newly introduced toys) showed greater learning as interpreted by ERP brain measures of phonetic and word learning. What is groundbreaking about this study is that infants exposed to Mandarin via video or audio-only showed no evidence of learning in their ERP measures. Also, their behavioral test scores from the head-turn analysis did not differ from

the infants in the control group who heard no Mandarin whatsoever. On the other hand, those with human engagement not only had the period for global language learning extended but also performed equivalently on the recognition of Mandarin phonemes as same aged infants in Taiwan who had listened to Mandarin for 10 months. This leads us to question what this means for our L2 composition students that have studied English in contexts that use memorization and textbook recordings over L2 human interaction to teach the English language. It also requires composition instructors to revisit human attachment in more detail, as few would argue against its significance.

While the social gating hypothesis powerfully argues the centrality of social interaction for language learning, it does not deeply investigate the nature and impact of the human relationship on socio-emotionality. However, a complementary theory to Kuhl's exists from behavioral psychology, one that has revolutionized psychotherapy and has contributed to studies on metacognition and mindfulness. Attachment theory, first formulated by psychologist John Bowlby and extended by Mary Ainsworth and her colleagues, poses that relationships are the basis of human survival (Bowlby, 1988), and that our initial bond with our caregiver (usually mother) impacts our behavioral patterns of relating and emotionality (Ainsworth, Blehar, Waters, & Wall, 1978). More recently, as attachment theory has been integrated with neuroscience, affect regulation and emotional attunement have become increasingly more important as factors that shape the overall socio-emotional development of a person (Schore, 2003). Although attachment theory is not a theory of language in itself, our understandings of the simultaneity of language encoding with memory and emotion render it helpful in our conceptualization of affect and social bonding in language acquisition.

Here, I will briefly synopsize the historical research leading to the two main concepts from attachment theory referenced here. First, attachment theory connects human survival to the ability to secure an attachment to another human. Beginning post-WWII, London hospitals were witnessing high infant mortality rates. The hospitals used strict sterilization practices meant to safeguard infants against infection, but Bowlby, who was working there at the time, began to develop theories of maternal deprivation and attachment, theorizing a correlation between touch and infant survival. His work began to impact hospital protocol. Nurses, who were previously instructed to touch the infant as little as possible to avoid exposure to germs, were now instructed to hold, talk to, and engage with the infants. These new protocols increased infant survival rates dramatically and lead to the practices used today. In 1969, Bowlby published his seminal work, *Attachment and Loss*, which argues that attachment to a mother is a determinant of survival and overall normal health in an infant.

After Bowlby's initial theory connecting infant-mother bonding to survival, attachment studies proliferated, showing a second main contribution—mainly, that repeated sets of patterned behaviors in children and adults could be linked to a person's initial bond with their primary caregiver (Ainsworth et al., 1978; Holmes, 2014; Riley, 2011). One famous experiment called the "strange situation" tested the nature of the bond and linked certain behaviors to it (Ainsworth et al., 1978). Though there are different variations of the experiment, the main purpose is for a caregiver to leave their child briefly, allowing the child to experience a brief period of distress, and then return to comfort the child. The child's response to the caregiver's departure and return is categorized into an attachment style. These behavioral, emotional responses offer insight into how the caregiver attaches to the child on a daily basis, with later studies emphasizing self-awareness and emotional regulation as correspondent to socio-emotional health (Holmes, 2014). To synopsize, the attachment styles for children are divided into two types: secure and insecure. Within the category of insecure, there are three subdivisions: insecure, avoidant, insecure-ambivalent, and insecure-disorganized. The first category, secure attachment, was attributed to caregiver-child affectional bonds in which the caregiver responded to the child's needs, made eye contact, and offered affection or space accordingly. Secure attachment was characteristic of children who were comforted easily, returned to play and displayed signs of exploration and curiosity. The second category, insecure-avoidant attachment showed caregivers who were emotionally distant or rejecting and children whose coping strategies included avoiding their own needs for attachment (e.g., ignoring caregiver's departure/return, avoiding eye contact). The next category of insecure, insecure-ambivalent, was characteristic of caregivers that were emotionally enmeshed or inconsistent with the child. These children often demonstrated ambivalent behaviors such as clinging to the caregiver but not accepting or responding to their comfort. The final category, insecure-disorganized attachment, is rare and was added to classify erratic caregiver-child bonds, in which the caregiver is frightened or frightening and the child responds with self-soothing strategies such as disassociation or self-harm (e.g., rocking in fetal position). These initial attachment categories have been extended and applied to adult relationships (George & West, 2012) as well as teacher-student relationships (Riley, 2011). According to Bowlby, the initial affectional bond with the caregiver produces internal working models of attachment, "relatively fixed representational models," that are used to predict and relate to the world (Holmes, 2014, p. 63), and though Bowlby (1969) wrote about attachment as lasting from the "cradle to the grave," even he questioned its malleability (p. 208).

As attachment research continued, results showed that pedagogical and ther-

apeutic strategies that used healthy human bonding could heal insecure attachments in both children and adults, students and teachers. In fact, the evidence showed the ability for bidirectional changes in attachment (Cozolino, 2013, 2014). In other words, healthy, securely attached infants might experience abuse or neglect as teenagers and revert to an insecure attachment style, just as insecurely attached infants could experience a healthy attachment in adulthood that reprograms their attachment style to be secure. This evidence corroborates with that found in Gwen Gorzelsky, Carol Hayes, Joseph Paszek, Ed Jones, and Dana Lynn Driscoll (this volume) and Irene Clark (this volume), where neuroplasticity is being documented in adults who have acquired a skill (e.g., jugglers, stroke victims, taxicab drivers). In addition, mindfulness or metacognitive practices have been thought to impact attachment, as pausing to think about thought processes fosters a space to reflect on the emotions, bodily reactions, and memories that enter a present moment/activity. Metacognitive practices which promote a compassionate, curious, and non-judgmental stance towards the self, have been said to heal insecure attachments, as individuals learn to develop a secure attachment with themselves (Snyder, Shapiro, & Treleaven, 2012). In each of these movements toward social bonding, whether in relationship with the self or another person, the language used during these interactions encodes into memory, imprinting into linguistic socio-emotional development of the individual. And even though this resonates with infant language studies (Kuhl, 2007) and primary language acquisition studies (Lee, Mikesell, Joaquin, Mates, & Schumann, 2009) in their argument for the power of human interaction, these conclusions have not been readily extended to secondary language acquisition in adults.

In regard to second language acquisition, adult neuroplasticity has been problematic, with researchers more often restricting their analysis to infants, offering explanations about why infant brains are much more "plastic" than adult brains. For one, the infant brain's sensitivity to phonemic discrimination ends around twelve months, as plasticity is traded for speed, optimization, and specialization (Kuhl, 2007). Second, the neuropeptides or hormones that orchestrate human affiliation and bonding, are at incredibly high levels in infancy, but decrease with age. More specifically, adult language learners have one hundred times less levels of opiates in their brains than at the time of birth (Lee et al., 2009). Although both Kuhl and Lee et al. offer thorough evidence for the vast differences neurologically and linguistically between infant/adult and primary/secondary language acquisition, their important contributions, the interactional instinct (Lee et al., 2009) and the social gating hypothesis (Kuhl, 2007), correspond with research from the social sciences and neuropsychology that suggests that regardless of age, the human relationship—social bonding and

attachment—contains transformational qualities that may have the power to shift what was thought to be set behaviors (Cozolino, 2013, 2014; Riley, 2011). This overlap merits further investigation into extending their work for the adult language classroom. In fact, much of the research from neuropsychology also acknowledges that individuals who gain awareness of their cognitive processes can have agency over their future behaviors and personal development. This concept is echoed in Clark's chapter in this collection as she discusses the ever-changing connectomes within an individual and the potential that person has to gain consciousness and agency in shaping and performing their own various identities. Discussions such as these regarding neuroplasticity led me to question whether human relationships could increase the brain's propensity for second language acquisition in adults while addressing issues of emotional and socio-cultural fluency in L2 writers.

LANGUAGE ATTACHMENT THEORY

Language attachment theory posits that L2 acquisition in adulthood and the resulting changes in neural plasticity this requires could be fundamentally built upon the brain's optimization towards attachment as a survival mechanism, and that even though adults no longer depend on attachment for survival, human bonding may hold residual power with respect to language acquisition and use. Studies of international adoptees adopted post-critical period offer an interesting perspective on whether or not social bonding has the power to impact brain plasticity for language. Pallier et al. (2003) gathered fMRI data on a group of Korean-born adults who were adopted between the ages of 5 to 8, post-critical period, into French families. Though these Korean participants had lived in orphanages in Korea before their arrival, so that exposure to Korean should have been extensive (infancy to five years of age), they reported no memory of Korean (L1). They had become native-like in French (L2), the language of their adopted families. When tested with control groups (monolingual French speakers), they performed equally. When shown Korean symbols or played Korean audio against other foreign languages, their brains showed no distinction. fMRI data imaging showed no Korean ability. It appeared that the second language had completely replaced the first language. Though this study focused on language attrition not the impact of attachment on language, it is likely that the majority of these adoptees had experienced one or more social separations with their native language attachments, creating insecure attachments. However, as they developed social bonds with their L2 French families, these relationships were likely powerful enough to trigger their brains to accept French at this dramatic level of fluency. Reasons their brains chose to delete its first language, Korean,

can only be hypothesized, but emotion and painful memory recall has been documented in similar cases of trauma (Pavlenko, 2005). At its extreme, language attachment would help explain deletion of a first language, but could also help explain structural reorganization in the adult bilingual brain in terms of shared conceptual mapping as well as other features of bilingualism found in behavioral and cognitive studies such as the bilingual brain's propensity to acquire theory of mind (i.e., predict the mind of another), flexibility of thought (i.e., implement a new rule quickly after performing a habitual task), and enhanced cognitive control, which was shown to protect against the onset of dementia later in life (Bialystok, 2009; Bialystok, Craik, & Luk, 2012; Buchweitz & Prat, 2013). These features of a bilingual brain would, according to language attachment theory, be evidenced in bilinguals who had experienced social bonding in the L1 and L2.

In addition, language attachment theory also integrates concepts on how relationships and the brain interact to influence learning ability and identity formation. In his text, *The Social Neuroscience of Education*, Louis Cozolino (2013) describes how human relationships have been found to build and rebuild brains by reviewing neuroscientific studies showing how healthy human bonding can reshape behaviors that were once thought to be set. Specifically, Cozolino addresses some of the anxiety studies that Charles Bazerman (this volume) discusses. He describes studies in which insecure attachments, stress, and high levels of anxiety negatively impact the brain to impede learning and compares these studies to those showing how emotional attunement, play, and story-telling build human bonds that stimulate the brain for learning. He offers educators the concept of the "tribal classroom," one that is salient for a composition setting in which students have various language resources that can be explored in writing. His notion of the tribal classroom resides on the basic premise that "the more the environment of a classroom parallels the interpersonal, emotional, and motivational components of our tribal past, the more our primitive instincts will activate the biochemistry of learning" (2013, p. 239). The tribal society showed characteristics of small groups, equality and fairness, shared responsibilities, and democratic decision making as opposed to industrialized society's large groups, individualism, competition, and dominance hierarchy. Also, these small communities, in which human connection is central, the learner is put into a fabric of social, emotional, cultural, political experiences that offers a multiplicity of classroom voices from which to shape L2 learners' experiences of their second language. Likewise, valuing the multiple perspectives inherent in linguistically diverse students enriches the composition setting and stimulates learning and cultural competence. Language attachment theory uses these frameworks within the context of composition and applies them to L2 writers in hopes to ameliorate some of the cultural, emotional, and social isolation commonly reported on

in L2 literature (Motha, 2014; Ortmeier-Hooper, 2008; Toohey, 2000).

Language attachment theory also maintains that memory, emotion, and the body are interconnected and engaged with others even when physically or temporally separated. Studies on memory and the body, such as those cited in the text, *Emotions in Multilingualism* point to what Steven Corbett (this volume) refers to as embodied cognition, the understanding that cognition is intrinsically social, shared among other bodies and just as much biological and physical as it is mental. In connection to second language acquisition, language attachment asserts that the language used (L1 or L2) during the encoding of the memory becomes part of the network of neural synapses associated with its recall. Studies on cross-linguistic differences in L2 writers support this, showing swear words, terms of endearment, shame, anger, and frustration to be experienced differently (and often more intensely) according to the language used most for encoding that emotion (Dewaele, 2010; Pavlenko, 2005). It is not surprising that these researchers most often found that the language used between caregiver-infant (L1) reportedly was the writer's preference for emotional expression in writing, though exceptions have been noted. Some of these exceptions include when expression of a particular emotion is not socially acceptable in the L1 (e.g., fear in Thai, Chamcharatsri, 2013), cases where the emotion expressed was emotionally disturbing in the L1 (Pavlenko, 2005), cases in which one did not wish to assert an identity they associated with their L1 (Koven, 2007), and cases where the L1 would not address the writer's desired audience (Pavlenko, 2005). Many of these studies aided Pavlenko (2005) in developing the theory of language embodiment, which is specific to multilinguals. Similar to embodied cognition, language embodiment corroborates with the view that the words of a language can invoke both sensory images and physiological reactions. Integrating arguments from Michel Paradis (1994), Pavlenko explains that because primary language acquisition greatly involves the limbic system and other brain structures such as the amygdala, language acquisition generates emotions, drives, and motivation that become part of a process of affective linguistic processing. The result is this language embodiment, in which sensory representations, desire to produce a message, and autobiographical memory become integrated into the language itself. This language embodiment, she argues, normally does not occur in second language acquisition, in which a decontextualized classroom develops word meanings through "definition, translation, and memorization" rather than through a "consolidation of personal experiences channeled through multiple sensory modalities." Another reason Pavlenko offers for language embodiment not occurring in the L2 is that the limbic system can only be involved in language production when a speaker has a need or desire to produce a certain message (Paradis, 1994), and in many L2 language classrooms, "utterances are

elicited from learners who, on top of being unwilling interlocutors, focus on the structure rather than the meaning of the messages," a process that only creates language learning anxiety and connects that anxiety to the L2 (Pavlenko, 2005, p. 155). This exactly describes both my experiences with international students in composition courses over the past ten years, as well as, what my most recent research study, a mixed methods study, has found.

Over the last two years, I have engaged in an IRB-approved mixed-method study of international students in composition courses. The study surveyed one hundred and three students (my former students included) on their language attachments in English, their perceptions of the English language, their comfort level in emotional expression in English, and their L2 language learning histories. The study also collected and analyzed classroom assignments from international students who took the survey. These participants were former students from my own composition courses from the past five years, and the documents I collected from them included translingual poetic writing (fifty-two participants) and in-depth language autobiographies recounting language learning histories (seventy-seven participants). After using grounded theory to analyze themes in these collected documents, five writers (all former students) were recruited to be interviewed as case studies. These case studies furthered understanding of findings from the survey and document analysis, by providing a more detailed description of L1/L2 rhetorical choices, the impact of language attachments on emotional expression in L1/L2, and autobiographical memory and emotional experiences in the composition course. Though a complete review of the findings is beyond the scope of this chapter, Pavlenko's theory of language embodiment was confirmed. Specifically, survey results showed that English and negative emotions were most often paired, with explanations of the English education as "stressful" or "pressured" given as descriptors of its acquisition. Also, nearly all preferred the L1 for emotional expressive writing, and a surprising thirty-seven percent listed that they had no close friends with whom they used English. The theme of language attachment was explored in more depth during the interview and document analysis with case studies. Autobiographical data was divided into two main categories, depending on whether the student's primary, early connections to the English language were described with more positive or negative descriptors. The majority of these language autobiographies described their early English learning experiences more negatively, a finding that corroborated the survey results showing English to most often be paired with negative emotions. These autobiographies portrayed "dutiful" students, those who often described learning English in cram schools, boarding schools, and schools that focused on exam preparation. The anomalies were four autobiographies whose narratives described their early English learning experience more positively and discussed

L2 socio-emotional connections made before studying abroad. Two of these were via human connection using the common L2-English (a Filipino nanny and a Norwegian online gaming friend). The other two were socio-emotional connections made with TV series characters with whom the students felt bonded due to watching numerous hours of the series and memorizing portions of the script. These four "subversive" students report trying to find a "better" way to learn English than the methods used in their classrooms. It is important to note that the other writers (termed *dutiful*) may have had bonds not discussed in their autobiographies as well as stories that began positively but turned to have more negative descriptors than positive. It is also important to reiterate that this data reflects early connections to the English language, rather than post-study abroad connections (though the survey seems to report on "lasting" negative attachments to the English language even after moving outside the home country). In addition, these results only represent a small set of international participants in university composition courses. If the study were duplicated in another region and university, the results might differ. However, the insights gained from this participant group asks us as instructors and researchers to consider the language attachment history of an L2 learner, especially when we notice anxiety associated with the English language.

Though some may argue that having embodied cognition in language learning is not important for L2 writing development in academic settings, my findings show that L2 writing and rhetoric benefit from an embodied approach. Moreover, survey results showed that nearly all L2 learners who reported no close friends in the L2, desired to have one. From this evidence and the theories offered above, language attachment theory asserts that when bilingual brains have had L2 exposure through human connection and bonding, that L2 writing increases in complexity, emotionality, the use of translingual rhetoric, and overall embodied cognition in writing. The goal, then, in addressing the L2 writers in our composition courses who lack socio-emotional and socio-cultural types of L2 language fluency, is to offer language attachment figures—caring, playful, L2 speakers that are willing to bond with the learner. Moreover, for mainstream students whose L1 is English and whose L2 is not particularly developed, language attachment pedagogies could function as a kind of empathy training, which may solve diversity issues that stem from negative, stigmatized views of the ESL student and encourage more cross-cultural awareness and sensitivity. In addition, translingual writing approaches become more important rhetorical moves as language attachments require composition students to develop their repertoires for addressing various types of cultural audiences, a much needed skill as writers participate in today's globalized social medias (e.g., the 2011 "Twitter revolution" in Egypt).

Language attachment theory is not in itself a new theory. It is a hybridized theory specific to reviving language pedagogies that rest upon human bonding and relationship. It is grounded in interdisciplinary work among the fields of neuroscience, psychology, and composition studies and is a response to globalization in higher education, which has caused an increasing number of linguistically diverse students and created the need for researchers and practitioners to better understand the bilingual brain in a composition setting. What is new about language attachment is 1. The position that adult language learning be situated inside of human attachment, and 2. A reframing of composition pedagogies for this framework. It is important to note that unlike Kuhl's Mandarin tutor, language attachment figures need not be a native speaker, but could be anyone with whom the L2 was the primary language used for interaction.

PEDAGOGICAL IMPLEMENTATION

What could a writing teacher do to encourage language attachments and social bonding in their composition classrooms? This question has fueled most of my pilot studies, which I offer here not as vetted pedagogies, but as potential directions for investigation. In what follows, I will offer pedagogical practices that evolved as a response to the theory of language attachment, all of which support human to human interaction as the most effective form of instruction. For the scope of this chapter, I have chosen to detail implementation of only one, which I consider most valuable to the composition classroom.

As a composition instructor, the most effective implementation of language attachment theory is to intentionally design long term pairs or groups in the course. These pilots were administered in a 10-week course first year "multilingual" composition course, where student self-select enrollment as they identify themselves as "someone who can read, write, and think in more than one language." The composition course met twice weekly for two hours. For the first two weeks of class, I (the composition instructor) observed student interactions, looking for signs that two or three students could be long-term friends. Signs include those Cozolino (2013) designates as stimulating for learning: laughter, play, and/or emotional attunement during story-telling or conversation. During these first two weeks, I also required autobiographical writing and classroom introductions that I used to pair students based on similar interests. During the quarter, students are required to spend a lot of time with their language attachment. They interview one another outside of class for a primary research skills assignment. They peer-review one another's papers. They also watch and analyze films from their home cultures as part of a cross-cultural assignment, and as Meade (this volume) mentions, grades are deemphasized in favor of engagement.

As a result, some students who were interviewed six months after the course, reported continued bonding outside of class which resulted in positive emotional experiences with English. For example, one of my case studies, Shun (pseudonym), a Chinese-English speaker reported severe anxiety when using English, explaining short "freezes" or "blanks" during conversations in English due to stress. In discussing memory and emotion, he attributed the strict, pressured educational methods used to teach English in China as reason for his anxiety when using English. Shun's stress prevented him from feeling curiosity and creativity when using English. During my course, I paired Shun with Min (pseudonym), a Korean-English speaker. Their friendship lasted beyond my course to a weekly meeting at a pub, where they discussed their families, romantic relationships, future plans, and school. In our interview, Shun explained that talking to Min in English (their common L2) allowed him to practice his English in a non-academic, non-pressured environment, which he believed was therapeutic in reducing his anxiety. This long-term bond significantly impacted his cognition and experience of writing in the L2. As a result, Shun was a more relaxed writer, which added to his sense of self-confidence and enhanced his emotional connectivity to the English language. Shun also reported feeling more capable, a theme that echoes Khost (this volume) in his discussion of self-efficacy. In Shun's case, the language attachment figure Min becomes the pedagogical means by which the English language becomes slowly more embodied for Shun. As his anxiety decreases, he finds himself laughing, feeling sadness, and connecting emotionally as he expresses himself through writing poetically and autobiographically. He explains that he has never experienced English or writing this way, and laughs, as he tells me that he may not want to be a math major anymore.

Language attachments are the practical means by which composition instructors can offer L2 writers more embodied rhetorical repertoires, but it is also the means by which L1 English writers develop cross-cultural repertoires for addressing various types of cultural audiences who use World Englishes (Schaub, 2003). For a composition instructor in a mainstream composition course, where the majority of students speak English as their first language (but have often had some foreign language courses in high school), pairing students with language partners outside of the classroom is effective. If the institution has a language exchange program, the instructor can require that students sign up for a language partner. In this case, a language exchange program coordinator sends an introduction email giving participants each other's contact information. The language partners then meet casually outside of class to develop a relationship on their own, ideally speaking part of the time in each language or depending on participant's ability, simply gaining familiarity and practice with World Englishes. Also, social networking sites like ePals function to connect instructors or

students globally to create language partners similar to the one described above in the language exchange program. In both scenarios, the ePal takes place of the old "pen-pal," offering connections beyond writing letters. Studies on ePals and other technology enhanced multimedia instruction networks like it connect language learners via video chat, email, and discussion boards to truly become involved in each other's lives (Chen & Yang, 2014). These language exchanges are the most fertile ground for addressing language diversity issues because they rely on the power of human relationships to challenge hegemonic perspectives. No longer is an "expert" English speaker helping the non-expert. Both parties assume an expert position (their L1) and a language learner position (the desired L2), fostering empathy, cross-cultural understanding, and possibly, life-long global friendships that could unite the United States and the globe.

Even monolinguals in our composition courses who "took high school foreign language but can't speak it" would be pushed to create language exchange partners. These partners could be used to complete assignments in our composition courses as well as requirements from other language courses. If successful, the implications for language attachment practice could extend to reform language policy in K-12. In the future, students could come to a composition course with already established language attachments from early years of foreign language study. Though this seems challenging, it is actually quite likely, as younger generations who live abroad are using technology such as ePals, video-gaming, Facebook, and Twitter to build relationships cross-culturally in their second languages. Policy makers may need to catch up with these tech-savvy methods to language learning. Instead of the high school foreign language requirement emphasizing test achievement, the passing criteria would be to establish a social bond and communicative ability in a second language through a global technology enhanced multimedia instruction network. Foreign language teachers would design courses with other teachers globally, creating assignments that situate the relationship as central. If multilingualism became pervasive, the impact could be substantial—languages that had been isolated from the public sphere would be valued and Americans who may have been previously "monolingual" when leaving the K-12 system, may experience the benefits of having communicative ability and cross-language relations in two languages.

Other pedagogical moves that implement language attachment theory include requiring composition students to find one or two writing center tutors with similar disciplinary interests, with whom they consistently visit and bond with throughout their years at the institution. Another, which applies Nel Noddings' influential work on the ethics of care, is for teachers to be intentional in student-teacher bonding when conducting small group or one on one writing conferences. Next, as Chen and Yang (2014) report, instructors can promote

exposure to World Englishes by co-developing courses internationally. Finally, including a service component to a composition course can also position human bonding between students and community members as students write about their experiences helping, listening, and connecting with others.

FUTURE AREAS OF RESEARCH

This theoretical framework is in its early stages of investigation, and the pilots discussed above would all need more research to produce a more stable theory from which to base pedagogical implementations. Therefore, future research could continue to investigate language attachment through pedagogical implementations. Additionally, it could seek to explore the following questions: What is the nature of human relationships in L2 socio-emotional learning? What are the existing emotional connections made to the L2 via the L1 attachment figures and their impact? How do we navigate the problem of neuroplasticity in adult language learning and the question of attachment and socio-emotionality in adult language learners? How could metacognitive practices play a part in addressing language attachment? Future studies could examine these questions by researching human bonding and language acquisition late in life. In addition, interdisciplinary researchers of cognition and writing might look at the role mirror neurons in infant-mother bonding and use this evidence to further instate imitation pedagogies (Clark, this volume). In referencing transfer, compositionists might explore social bonding between their students and the attachment figures of their future disciplines, to examine how professionals can serve to facilitate transfer from writing within the institution to writing within the workplace. Finally, in composition studies of metacognition, aspects of attachment and mindfulness may be helpful avenues of inquiry in connection to pedagogical practices.

CONCLUSION

I argue that some understandings from primary language acquisition and infant brain studies can aid our conceptualization of secondary language acquisition, particularly in positioning human bonding as a foundational element to adult language learning. Next, premised on these arguments, I offer language attachment theory as an example framework with which to explore new pedagogical investigations in the composition classroom. This framework works to provide a more Bakhtinian experience of language for the L2 writer, where embodied cognition and writing intersect, moving them closer to socio-emotional and socio-cultural fluency in the L2. Language attachment theory functions not

to assimilate L2 learners into moving closer toward the inner circle of native speakers (Kachru, 1990), but to encourage all students to question the internalized ideology of the native speaker, its assumptions, and the impact these have on the learner. Language attachment also grounds itself in findings that report that healthy human bonding can rebuild and reprogram the brain, especially in instances where students display insecure attachments or bilinguals have negative emotions encoded with the English language due to past English education practices. In addition, through the cognitively transformative avenues of bilingualism and human relationships, this contribution has the potential to help both L2 and monolingual English writers by promoting social bonding as a means to globalizing the composition classroom. These integrated perspectives are particularly important, as globalization in higher education is increasingly demanding that the teaching of English composition and rhetoric appeal to more global audiences, in which multilingualism, new media, and World Englishes have become part of our everyday interactions.

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