Expressing Emotions in a Second Language: A Critical Review with a New Proposal for SLA Research

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Table of contents:

1 Introduction

It was a day in Fall, 2022. I was standing right on the courtside cheering for my team at a college recreational basketball game. I was feeling the intensity of the game through all my senses: from my friends' serious-looking faces, the rather frequent foul calls, and the hustle plays that energized everyone. I was sharing the excitement that everybody present was feeling. And yet, something was odd. I was feeling frustrated. Not by the referees, not by the game, and certainly not by my friends. I was frustrated at myself not being able to shout out all these cheer calls smoothly. Although I was in such an emotionally aroused state throughout the game, monitoring myself getting stuck on these spontaneous emotional expressions made me feel extremely disappointed. I would literally feel these emotional drives storming in my gut waiting to get out of my mouth, but they had trouble getting verbalized spontaneously. This (and other similar experiences of mine) posed me a big question: Why is this happening? The question got even deeper because at that time I had already been a proficient speaker of English. I had had no problems communicating with my friends and certainly had been able to handle the more academic side of my life. I was seeing an apparent dissociation (or at least what might be construed on the surface as a dissociation) here.

This experience seems to be shared by other language learners as well although it does not seem to have been given much highlight in applied linguistics. Dewaele (2006), in a book chapter on anger expression across multiple languages, takes up this very issue of emotion and language connection by sharing his own experience of not being able to convey his anger in Spanish at an airport, despite the fact that it was the language he had been using a lot, ending up making complaints in his L3 English. On another venue, he also talks about his anecdote of struggling to formulate his love in words to a Madrilène lady he fell in love with.

This experience, or problem one could say, as I will argue in this article, cannot seem to be fully explained with the research paradigms that have been put forth and discussed in second language acquisition (SLA) research. More specifically, contemporary SLA research does not provide a satisfactory account of why one cannot express emotions spontaneously despite years of active language learning/use and the apparent proficiency and fluency one has gained. And yet, as will be thoroughly discussed, solving this issue does not appear to be simply a matter of adding an additional concept or research construct to the existing field. This problem seems to me as one that could provide researchers with a chance to fully reconsider the nature of the process of adult second language acquisition as well as to

develop a fundamentally different way of conceptualizing the SLA process. The purpose of this paper is only one, which is the following: to propose another critical dimension to the process of second language learning. To that aim, I will first review how the topic of verbal emotional expressions is understood in current research. Then, I will share insights from language production research as well as recent affective science research to claim that the field of SLA requires a fundamentally two-dimensional view of the second language learning process, whereby the learner not only develops the *language* repertoire, but also the *conceptual* and *emotional* workings together with the language. I ultimately propose that future SLA research depart from the current unidimensional approach and adopt this qualitatively new way of understanding the adult second language acquisition process.

2 Affective experiences and SLA

It is only quite recent that learners' affective experiences started to get highlighted and thoroughly investigated in SLA research. As Pavlenko (2013) has beautifully summarized, SLA researchers have been witnessing an "affective turn" in the field that was (and has continuously been) inspired by groundbreaking work in neuroscience (e.g., Damasio, 1994, 1999, 2003; Labar and Phelps, 1998; Armony and Vuilleumier, 2013; Barrett, 2017). As she argues, this turn led to a major shift in the research focus and interest, much like the cognitive revolution that started primarily in the 1960's (e.g., Chomsky, 1957), the communicative turn that took place in the 1970's and 80's (e.g., Nunan, 1987), and the "social turn" (e.g., Firth & Wagner, 1997; Block, 2003, 2007; Norton, 2000) in the late 1990's and 2000's. Indeed, there is no doubt that the field of SLA has seen a proliferation of publications on the various topics that fall under the umbrella term "affect", which includes anxiety, motivation, personality, emotionality (Harris, et al., 2006; Harris, 2015), self (Kramsch, 2009; Dörnyei, 2014; Pavlenko and Lantolf, 2000), desire (Kramsch, 2009; Piller & Takahashi, 2006), and so forth.

Yet, it appears that these research strands on "affect" are compartmentalized, i.e., they have not yet been theoretically integrated with one another to have a coherent bird's-eye picture of this topic. Most importantly, they have not yet been incorporated into the more actively discussed aspects or what one could regard as "mainstream" SLA. These include issues such as, instructed SLA (Norris & Ortega, 2003; Spada & Tomita, 2010; Loewen & Sato, 2017), interaction (Long, 1983; Mackey, 1999; Gass & Mackey, 2020), input and output (VanPatten, 2020; Krashen, 1982; Krashen & Terrell, 1983; Swain & Lapkin, 1995; Swain & Suzuki, 2008), implicit and explicit knowledge representations (Rebuschat, 2015; Paradis, 2004,

2009; Ellis, 2005; Godfroid, 2023), declarative/procedural memory systems (Morgan Short & Ullman, 2022; Ullman et al., 1997; Ullman 2001, 2004, 2020), practice (Suzuki, 2023; DeKeyser, 2020), and task-based language teaching (Ellis, 2020; Long, 2014). As an example, Ellis and Shintani (2014), in an introductory volume on language pedagogy and SLA, treat learners' affective experiences as "learner differences" or "*individual* difference factors (italicized by the author)"; they devote only a single chapter (called "Catering for learner differences through instruction") to the topic after multiple chapters on the above-mentioned "mainstream" issues.

However, "affect" is something that results from the interaction of the more "individual" "factors" or internal aspects of human cognition, and the more social, interpersonal contexts where language learning and use occur. To be sure, affective variables DO influence the language learning process. This has been documented and brought forth to the research since the early days in SLA research (e.g., Krashen, 1982). But affective variables are not merely static, "individual difference" factors that influence the learning process (see Larsen-Freeman, 1997, 2003 for reference to dynamism in second language learning); rather, they are constantly shaped and reformed through the many (emotion-charged) social interactions that learners (and of course so-called "native users" of the language as well) go through; the influence is bi-directional. This view has been voiced out by many researchers in SLA more generally with the "participation" and the "acquisition" metaphors (originally in Sfard, 1998; Pavlenko and Lantolf, 2000 for more arguments), but is echoed in Pavlenko (2013) with regards to "affect". She claims that the study of SLA, recognizing the flesh-and-blood experiences of language learners, needs to go beyond the individualistic "affective factors" and start looking for ways to integrate the more psycholinguistic and the social perspectives. She ends her article by stating that the study of SLA and affect "will require a genuine dialog and collaboration between scholars from different disciplines" (pg. 24).

Although the need for research that integrate these two theoretical standpoints has been actively voiced out for quite some time now, the current state of SLA does not seem to have changed at the fundamental level. The majority of research has been devoted towards an attempt to understand how second language acquisition proceeds more generally, and while what Pavlenko calls "collaboration" between different fields has indeed made progress especially with the help of contemporary brain research (see Morgan-Short & Ullman, 2023, for an example of the declarative/procedural model in SLA), very few "collaborations" have been made in an attempt to focus on the issue of "affect", let alone emotional expressions.

In what follows, I will argue that the topic of verbal emotional expressions in an L2 will serve as a perfect opportunity for integrating the two perspectives that have been rather separate, and ultimately for reconsidering the nature of second language acquisition. But first, it is important to understand how this issue is understood and conceptualized in current research.

3 Emotional Expressions and SLA

Perhaps surprisingly, very few studies have investigated verbal emotional expressions in adult second language acquisition[i]. The only exception, to my knowledge, would be Dewaele (2006) as briefly touched upon in the introduction. The main purpose of his chapter was to discuss the factors that could possibly impact the acquisition of verbal emotional expressions in an L2. But what is of primary interest here is his own analysis of *why* he could not express his anger smoothly in Spanish. He writes the following:

> "When I later analyzed what had happened, I realized that a number of factors had contributed to my preference for English to express anger. I ***lacked the anger repertoire*** in Spanish and I lacked the fluency needed to gain the upper hand. When engaging a linguistic confrontation, one needs to be ***quite sure of oneself***."
>
> "…I realized that grammatical, lexical, or sociopragmatic errors would undermine the perlocutionary effects I was seeking, that is, an apology and an offer to help to catch a different flight."
>
> "…in other words, ***my tongue was tied***."
>
> (Bolds and italics added by the author, extracted from p.119)

After analyzing the potential factors that influence verbal emotional expressions, he concludes his chapter in the following way:

> "To conclude, I would describe the expression of anger in an LX as the verbal equivalent of performing ballet: it ***requires a lot of practice***, and a lot of what the French call *doigté* (in English: skill and tact)."
>
> (Bolds and italics added by the author, extracted from p.149)

However, is his analysis really the case? To be sure, linguistic/verbal emotional expression is a complex process that involves the dynamic interplay of multiple components such as personality, which he briefly mentions in the chapter, context of situation, emotional states, etc. What is of focus here is whether acquiring verbal emotional expressions is really a matter

of "*practice*". Connected to this question is another crucial issue of whether it was really because he lacked the "*repertoire*" that he could not express emotions. These claims seem to be highly pervasive in everyday discourse that attribute language learning outcomes primarily to "*practice*" in particular. Yet, the claims are highly questionable and in need of further examination for the following reasons:

1. He must have had a lot of "*practice*" conversing in Spanish; indeed, he claims that Spanish was the language he had been using a lot. It is doubtful and thus requires serious thinking about whether one really becomes able to communicate emotions smoothly by simply continuing to practice more. To frame this question in another way: is expressing emotions in an L2 on the same trajectory (of getting more "*practice*") as that of acquiring linguistic competence more generally?
2. It is doubtful whether his failure to smoothly communicate emotions in Spanish was a matter of having the anger "*repertoire*" or not. Having had a lot of exposure to and use of the language, it is reasonable to think that he would have *understood* it if he had heard someone yelling at someone else at the airport out of anger. The concept of "*repertoire*" for an account of this experience seems too general and ambiguous; it does not seem to be sufficient or accurate.

How could one possibly explain this experience? I propose my own argument here that the reason why a seemingly proficient L2 learner might not be able to express anger in one's L2 smoothly might have to do less with the lack of the linguistic repertoire per se, but more with the lack of *emoting patterns in the L2*. In other words, I argue that struggling to formulate one's anger in an L2 is not so much a matter of not having the appropriate language per se; it is more a matter of the poor *emoting patterns* constructed in the L2. Though this argument will certainly be discussed in greater detail in the following sections, it is worth noting here that these *emoting patterns* are learned and constructed through situated social interactions and observations and are therefore *social* in nature. My main argument, in a nutshell, is as follows:

> Verbal expressions of ongoing emotion in an L2 requires the activation of emoting patterns socially (re-)constructed/internalized in such a way that, when brought online, smoothly gets molded and transformed in the form of linguistic utterances.

In the remaining of this paper, I intend to propose that this argument indeed be the case by reviewing recent research developments that have not yet been given sufficient attention in SLA from multiple fields spanning from psycholinguistics to affective science, and that at least it is worthy of much scholarly attention that would trigger further investigation that is "collaborative" in nature as Pavlenko (2013) actively called for.

4 Speaking: On the role of the conceptualizer

Expressing emotions in an L2 is undoubtedly an act of linguistic production. The focus of this paper, based on the flesh-and-blood experiences of Dewaele (2006) and of many other language learners including myself, is on *speaking out* emotional expressions in particular, an online form of language production that is typically time-pressured and cognitively demanding in many regards. Since we are dealing with an act of speaking, let us now examine how the process of speaking itself has been discussed and conceptualized so far.

Elucidating the online process of speaking has been the object of inquiry in various fields including psycholinguistics, neurolinguistics, and second language learning (although undoubtedly less so compared to research in language processing or comprehension). One prominent model on which most current language production theories stand upon is that of Levelt (1989). In his pioneering book, *Speaking: From Intention to Articulation*, he provided researchers with a comprehensive outline of the speaking process, which comprised of three components: conceptualizing, formulating, and articulating. Below is a figure of each stage with detailed descriptions.

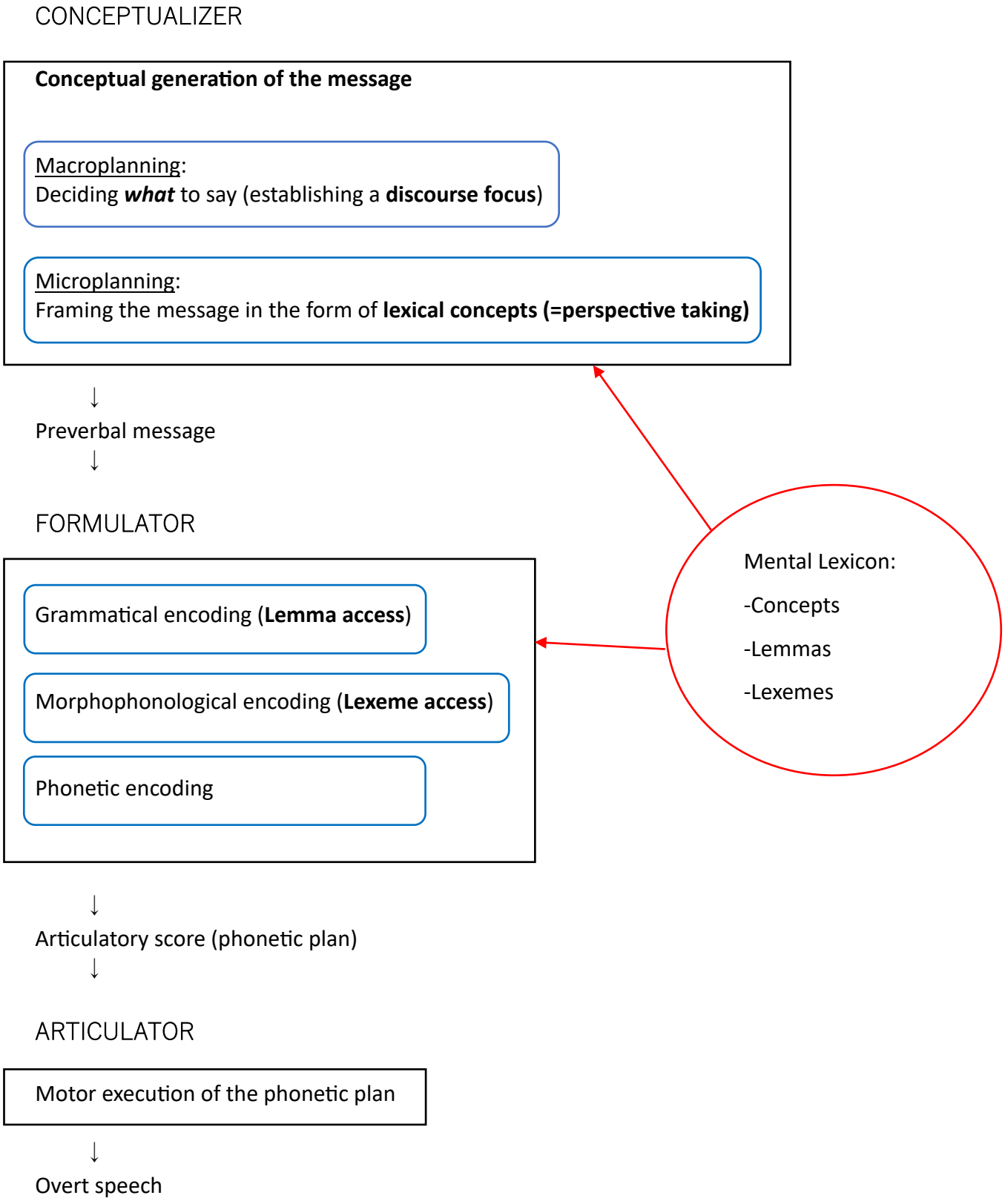

Figure 1: The outline of speaking schematized according to Levelt's model. Adapted from Levelt (1989).

Before I move on to discuss how this model connects to emotional expressions in an L2, let me briefly explain what this model says about speaking in general. According to Levelt, speaking can be broken down into three main components: conceptualizing, formulating, and articulating. Conceptualizing is where the speaker, having a certain communicative intention, conceptually prepares or generates a preverbal message. Loosely phrased, this means that the speaker comes to have an idea of what he/she wishes to say at the conceptual level. This process is argued to have two sub-processes: macroplanning and microplanning. Macroplanning is roughly choosing/deciding *what* the speaker wants to say, or establishing a "discourse focus" (Levelt, 1999). This is done by the speaker managing his/her attention to whatever the object of production is. Microplanning corresponds to framing the outcome of macroplanning into the form of lexical concepts. This process is rather language dependent to some extent (Levelt, 1999; Simard, 2022) as opposed to macroplanning since the representational format of the message is in lexical concepts, i.e., concepts that exist in the mental lexicon of the speaker. The selection of lexical concepts is called "perspective taking" (Levelt, 1999). In addition, when there is a temporal aspect to the speaker's conceptual message, i.e., when one is trying to describe the order of events for example, there is a need to make decisions on what to say first and what next; this is referred to as "linearization" (Levelt, 1999).

When a preverbal message is created, the speaker then moves on to formulate it linguistically. This is the second component of the model, namely formulating. This stage begins with lexical retrieval, i.e., accessing one's mental lexicon and retrieving the words that correspond to the concepts laid out in the conceptualizing process. This lexical retrieval proceeds precisely in two steps, namely by accessing lemmas and lexemes. The former means that the syntactic properties of a word (lemmas) are activated—hence termed "grammatical encoding"—so that a "surface structure" is generated, which essentially equals to lemmas organized in a particular sequential order. The latter process is one where a word's morphophonological properties (lexemes) are accessed—hence called "morphophonological encoding" —so that syllabic and prosodic aspects of the words are generated. Now that the speaker has what is called a "phonological score", the last step is to retrieve the articulatory information from the "mental syllabary". Once this information is retrieved, an "articulatory score" (or a "phonetic plan") is ready. This is then finally transformed into an actual, "overt speech" by way of executing the motor plan in the final articulating process.

How then would this connect to the speaking process of emotional expressions in an L2? What I would like to focus here is on the first and second components, namely

conceptualizing and formulating. According to Dewaele (2006), his failure to express emotions verbally was due to a lack of the Spanish "repertoire" for anger. This means that he attributes the culprit to the formulating process; that he did not have enough anger "repertoire" in the linguistic sense. Put it another way, this means that the conceptualizing was not a problem; that the conceptualizing of his anger was intact, so to speak, and that it was simply a matter of the inability to label them using the Spanish language. To analyze my own experience introduced in the first section with the same logic, my struggle to express a strong feeling of excitement in English was because of my inability to map the appropriate linguistic resources onto my intact excitement conceptualization. This would indicate that the cause has to do precisely with the link between the linguistic features (in the formulator) and the concepts in the preverbal message (in the conceptualizer); the link is not strong enough to be quickly activated and brought forth online to the speaking process, but perhaps strong enough to be activated for comprehension.

This argument reflects a fundamentally *unidimensional* view of second language acquisition, one that is essentially developmental in nature. The process of second language acquisition is understood here as one where the learner *develops/acquires* knowledge of the various linguistic features, whatever kind they may be, and therefore second language acquisition is really about learning the *language*, and not much about developing *thinking* and *emoting* in the language. Psycholinguistically speaking, the unidimensional view primarily concerns strengthening the language and concept link. Initially the link is weak or indirect via L1 equivalents, and therefore the learner has difficulty producing the language spontaneously even if they understand the language; increased proficiency that comes with "*more practice*" makes the link stronger or more direct, and its employment becomes almost automatic and perhaps even subconscious to the point where it can be brought onto the speaking process with ease.

This way of thinking is currently dominant in the field of second language acquisition. The position that I take in this paper, however, is that this developmental perspective is far from the whole story of second language learning. To get the focus back onto emotional expressions, it is very questionable that spontaneous production of emotional expressions is a matter of *developing the linguistic repertoire* for various emotions. But why questionable? I argue that it is precisely because of the nature of how our emotions are organized in our minds, namely that our emotions are not all that separable from our conceptual system including language.

5 Linguistically shaped emotion and H_2O: What do they have in common?

This argument is in line with the psychological constructionist approach to emotion that have been recently gaining increasing support in the cognitive and affective sciences (e.g., Barrett, 2017; Brooks, et al., 2017; Gendron, 2015; Satpute & Lindquist, 2021). Although the details of this approach will be discussed in greater depth in the following sections, psychological constructionists would argue that language is neither a mere label of nor an expression of emotion. They argue that language constructs and shapes the way emotion is perceived, understood, categorized, and importantly, *expressed and experienced*. In other words, there is a part (it is a part, not the entirety, and yet an important part) of our emotion that is linguistically shaped in terms of its qualitative nature. This view holds then that language and emotion would be inseparable in essence. Much like water (H_2O), as Vygotsky (1986) said, is made of two hydrogen (H) atoms and one oxygen (O) atom and yet is qualitatively different from the sum of the two, *linguistically shaped* emotion (or "linguistic emoting" as I would like to call it to better reflect its dynamic nature) is not the same as the sum of language and emotion. I argue that it was the linguistic emotional system, or an *L2 emotional system* as I would like to call it that Dewaele (2006) lacked, not the linguistic "*repertoire*". Now it is time to take a deep dive into what the psychological constructionist view is about.

6 Psychological Constructionist view of Emotion and Language

Scientists from many disciplines have, for a long time, been seeking to understand human emotion. The dominant view of emotion in the twentieth century—often known as the "basic emotion view"—claims that our emotions, such as fear, sadness, anger, and happiness, are: 1) largely biologically basic and determined (i.e., innate) in the sense that each of our emotions have specific neural roots in the brain in the form of dedicated neural networks, which are mostly homologous in non-human animals, and 2) therefore universal among humans, i.e., cross-cultural/linguistic variation, if any, is minimal at most and thus meaningless to discuss. Paul Ekman's famous "six universal emotions" might be the most representative of this view (Ekman, 1973). This way of conceptualizing emotion is still widely accepted both in academia and in the general media.

Although this way of seeing emotions is popular and perhaps taken for granted, recent affective science and neuroscience research have been providing exciting, mounting evidence

for an alternative account: that human emotions are not and cannot be reduced to biologically basic, innate neural networks that are universal across languages and cultures, but rather that they are actively *constructed* on-the-spot in the mind (body and brain) through the interaction of "core affect", which refers to bodily state representations in the brain, and the conceptual knowledge that have been developed over the years of life, including but not limited to language. This argument is known as the psychological constructionist view of emotion. In the following sub-sections, I will discuss this one by one.

Core affect and bodily states

Groundbreaking progress on emotions were made visible to a wide population of scholars in the 1990's when neurologist and neuroscientist Antonio Damasio published his highly influential book *Descartes' Error (1994)*. In this book, Damasio (1994) stated that emotions are essentially the various changes that occur in the bodily state, examples being somatovisceral, musculoskeletal, and hormonal (neurochemical) changes. He then claimed, contrary to general discourse, that feelings are different from emotions in that feelings are, in essence, the brain's mental sensing or representing of those changes occurring in the internal bodily state in relation to external stimuli (see Damasio, 1999, 2003). These feelings, i.e., the mental representations of the changes in bodily states, do not necessarily become aware to our conscious awareness although they can be and are indeed made aware in everyday life. Take the case of love as an example. One could sense one's increased heartbeat and a certain kind of uneasiness when one sees someone he/she is attracted towards. However, this might often not be cognitively aware to the person experiencing this at first. Later at a certain time, one might realize, i.e., become consciously aware that he/she has been feeling excited and nervous every time he/she sees this person, and even further that he/she is in love with this person (to be sure, the exact way people experience love varies a lot individually, and I am simply presenting one of the cases/patterns here for the sake of clarification.) To analyze this experience using Damasio's arguments, the increased heartbeat would correspond to an "emotion". The sensing of the heartbeat that is not (yet) aware to him/her would be an instance of a "feeling". The excitement and nervousness that he/she becomes aware of would be a "conscious feeling". To reframe his arguments, emotions and feelings are not the same; in fact, emotions as changes in the internal body states, precede feelings and not to mention conscious feelings that become aware to us.

Psychological constructionists do not deny this view. They do highlight the role of ongoing bodily changes and the mental representations of those changes in emotion. What sets them apart, however, is that they do not see these as emotions. Instead, they use the term "core affect" to describe this, a basic constitutive component of emotion (but not the entirety), which is often experienced with certain degrees of valence and arousal. Barrett & Lindquist (2008) define core affect as follows:

> "Core affect can be characterized as a neurophysiological state with the properties of pleasure/displeasure and activation/deactivation." (p. 249)

MacCormack & Lindquist (2017) claim that this "core affect" consists of various information about the body ranging from "autonomic, proprioceptive, kinesthetic, somatovisceral, and neurochemical" states, which together generate a sense of "hedonic valence and arousal" (p.37). They go on to say that core affect is "a constantly updating 'snapshot' of the body's internal conditions", which sometimes comes up to the surface of awareness (p.37). Although psychological constructionists see emotion as something beyond (that cannot be reduced to) core affect, they share a similar view with Damasio in terms of how bodily states and their representations play an important role in our emotion. The difference lies in whether they think bodily states *are* or *constitutive of* emotions.

Core affect and the conceptual system

Psychological constructionists think that core affect is not the same as either emotion or feeling. It cannot be, according to them. The reason is that core affect, on its own, namely the mental representation and subsequently the feeling of the bodily states, is too ambiguous in its quality and therefore not clear enough to be able to identify what emotion one is experiencing. In other words, core affect itself does not allow one to make specific meanings out of them and to make certain decisions upon them. This may well be so because core affect is primarily a matter of valence (feeling good or bad) and arousal (feeling activated or deactivated). Schacter and Singer (1962), in their now-classic paper, referred to this ambiguity as "ambiguous arousal". MacCormack and Lindquist (2017) also state that representations of core affect are often "distal", "more ambiguous and less easily or immediately perceived", but "contribute to a gestalt representation", such as unpleasantness or arousal. In order to make more fine-grained interpretations of the bodily state, one would need the conceptual system that helps identify what exactly it is that one is feeling. This identification process is called "conceptualization" or "situated conceptualization". The

conceptual system is largely influenced by language development and is therefore semantic and episodic in nature. Semantic, in the sense that the conceptual system is composed of numerous rather abstract linguistic concepts and categories[ii] that emerged through abstraction from a wealth of rich, multimodal, and situated experiences. Episodic, in the senses that 1) many of the abstract concepts and categories have their roots in individual situated experiences and therefore that they are tied to episodic memory contents, and 2) certain external sensations/inputs from the context of situation can evoke episodic memory contents from prior experience. MacCormack and Lindquist (2017) argue that emotions are, at its core, "bodily, conceptual, and highly situated phenomena", and that the brain "uses both a priori conceptual knowledge to interpret current sensations and also ongoing afferent representations from the body to update those interpretations in context" (p.37). How experiencing an emotion arises from these basic components can be summarized into the figure below:

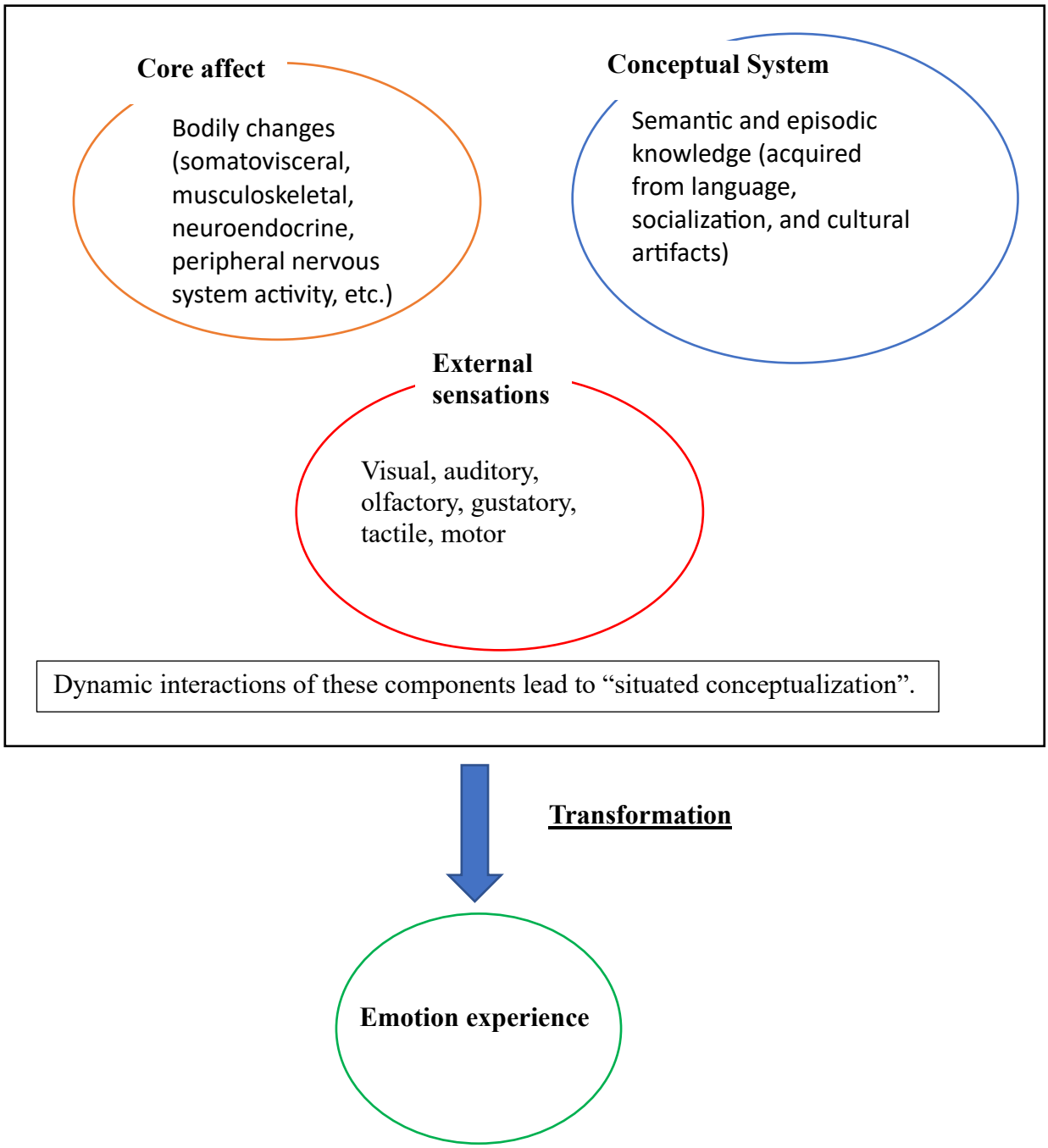

Figure 2: Simplified schemata of how experiencing emotion arises from the dynamic interaction of core affect, conceptual system. And external (exteroceptive) sensations. Emotion transforms its qualitative nature from the basic components, which means emotion is qualitatively different from core affect alone, language alone, external sensations alone, or from the mere sum of the three. Adapted from MacCormack and Lindquist (2017).

Core affect, language, and emotion

As I have been discussing, psychological constructionists see language as constitutive of emotion and emotional experience. More specifically, linguistic concepts help make meanings out of otherwise rudimentary and amorphous sensory representations. In this sense, language is inseparable from the daily experience of emotions (but not core affect). Language is not a mere label or an expression of emotion; it is a part of emotion in that it constructs emotions and emotional experiences. The relationship between language, core affect, and emotional experience is illustrated in the following figure:

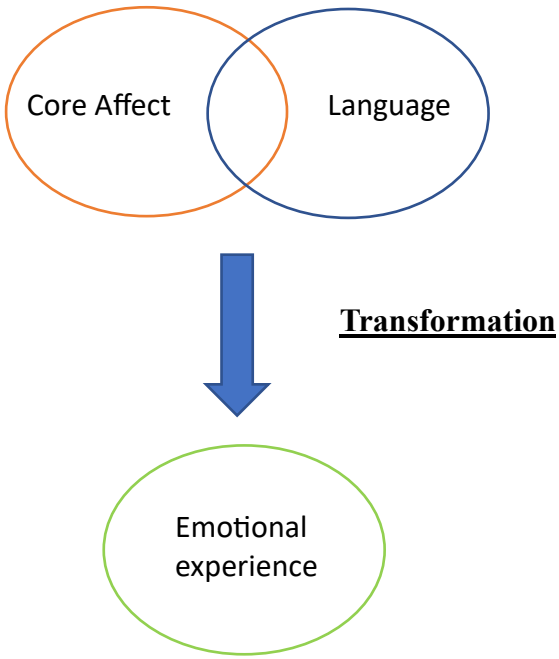

Figure 3: The relationship between core affect, language, and emotional experience. This shows that emotion and emotional experience is not the sum of core affect and language, i.e., language is not simply a symbol attached to mental representations of body states, but that they are constructed and shaped by language.

7 Empirical evidence

This view of language and emotion is getting an increasing amount of supporting evidence. Here I will review empirical studies that I find most relevant.

Impaired language, impaired emotion?

The first kind of evidence comes from studies where participants had to match two pictured facial expressions that belonged to the same emotion category while their access to language was experimentally impaired. One such study (Lindquist et al., 2006) utilized a method called *semantic satiation*, which involves subjects repeating an emotion word aloud 30 times to the point where the word temporarily becomes devoid of its meaning. According to the theory, this provisional disruption of the word should produce harm to the subjects' ability to perceive two facial expressions as belonging to the same emotion category. This is exactly what the researchers found. The participants who went through semantic satiation turned out to be slower and less accurate at matching the two pictured facial expressions than those who did not.

In order to make sure that this semantic satiation effect was related to emotion perception and not to the matching task itself, they conducted another study (Gendron et al., 2012). In this study, they addressed the same effect in a perceptual priming context. The logic behind this study is that normally when two identical stimuli—facial expressions in this case—are presented in a row, the second stimulus is perceived and processed more quickly; the first stimulus *primes* the second. Their prediction was as follows: if emotion concepts are part of emotion perception, then temporary disruption of a concept would interfere with the perception of a facial expression, which would diminish or at least decrease the effect of perceptual priming. What they found was consistent with this hypothesis. Semantic satiation did indeed negatively interfere with the facilitatory effect of facial expression priming, supporting their argument that it is precisely the lack of access to the conceptual system that produced these results.

Another piece of evidence comes from the clinical population. Here I draw on a study that targeted patients with semantic dementia. Semantic dementia (SD) is a neurodegenerative disorder often associated with damage typically to the left anterior temporal lobe (ATL), a crucial area considered to be responsible for the processing and representation of conceptual knowledge (e.g., Patterson et al., 2007; Binder et al., 2009; Visser et al., 2010). Patients with SD specifically have difficulty accessing the meaning of words despite the relative preservation of other linguistic functions including syntactic or phonological aspects of language (for more information on semantic dementia and language, see for example Ullman, 2008). With these patients as participants, Lindquist et al., (2014) conducted an experiment where the participants were asked to sort 36 images freely but meaningfully into 6 piles (the

images were of six people, each of them making six different facial expressions). The logic once again is the same. If these patients were able to perceive emotions, then they should have roughly six images per pile, which is what the control participants did. The patient group, however, created three or four piles that were based on broader categories, such as unpleasant, pleasant, and neutral. This indicates that they were grouping the facial expressions in terms of the core affect that the patients sensed, but not in terms of discrete emotions. This suggests, as the title of their article says, that damage to the lexical-conceptual system has a rather selective damage on "emotion, but not affect perception".

Putting feelings into words

A different line of research looks at how naming emotion or verbalizing it in words might or might not alter their emotion perception, experience, and regulation. One recent study by Nook et al., (2021) demonstrated through behavioral experiments that verbalizing one's emotions made it more resistant to subsequently regulate them. They found that participants' negative affect rating scores did not decrease as much when they named and regulated their emotions as when they simply regulated their emotions without naming them. The researchers thus proposed that emotion naming "may 'crystallize' one's affective experience" (p. 187), making it harder to alter its state by way of regulation. They also stated that this crystallizing effect might reinforce or consolidate the appraisal process and therefore make it difficult to "generate alternative appraisals of a stimulus" (p. 195).

Neuroimaging evidence for this type of task is also present. However, a word of caution is necessary before delving into the details. The tasks employed in these neuroimaging studies are not the same as those in the Nook et al., (2021) study; the former used an *affect labelling* task whereas the latter utilized an *emotion naming* task. The difference lies precisely in whether the participants verbalized their own emotion (*emotion naming*) or someone else's emotion (*affect labelling*) denoted typically in pictures of facial expressions. Since the exact cognitive mechanisms at play could be more or less different between the two, making generalizations from these neuroimaging data might be a little risky. Nevertheless, these studies are certainly more than relevant to our interest and rich in insights, so I find it worth attending to them here.

One rather early study by Lieberman et al., (2007) used an experimental paradigm in which subjects were told to match a pictured affective facial expression of a person with one of two labels below it, such as "scared" or "angry". Functional magnetic resonance imaging (fMRI)

results revealed that affective labelling reduced activity in several limbic regions, including the amygdala and the ventral striatum, which are implicated in processing negatively salient information that are undifferentiated in terms of its quality. They additionally showed that affective labelling led to increased activity in the right ventrolateral prefrontal cortex (rVLPFC), and interestingly that the relationship between amygdala activity and rVLPFC actvivity was inversely correlated; the more rVLPFC activity there is, the less amygdala activity. They also confirmed that this relationship was supported by changes in medial prefrontal cortex (mPFC) activity, suggesting that there is a neuroanatomical pathway through which the inhibitory effects of the rVLPFC on amygdala activity can happen. A later study by Lieberman et al., (2011) utilized a similar paradigm. Their prediction was precisely that when participants access the words, they engage in a form of symbolic thought, which in turn detaches participants from the original affective perceptions, thereby diminishing them. Their findings were consistent with this, showing once again reduced amygdala activation during affect labelling.

Taken together, these studies inform us that putting feelings into words indeed change their qualitative disposition. What exactly the disposition is remains unclear, but these research suggest that expressing our emotions linguistically is not simply a matter of attaching linguistic features to fully existent emotions. Rather, what is expressed linguistically, i.e., the product, is different from its ingredients, i.e., linguistic symbols and emotions per se. The H_2O metaphor that Vygotsky expressed seems so far to be applicable here as well. Next, I turn to developmental data in children and how language acquisition among children impacts their emotion perception and emotion experience.

Developmentally speaking…

First language acquisition is a massive feat. Children acquire language(s) very cleverly, but they do so over a certain period of time. Research on child language acquisition has shown that infants who have yet to acquire language are able to differentiate emotionally positive, negative, and neutral faces, but nevertheless cannot reliably distinguish between discrete emotional faces within the same valence (for an empirical study, see Bornstein & Arterberry, 2003). According to Widen (2013), this is the case even with 2-year-olds as well; their emotion perception is based on valence, and not on emotion categories like “angry” or “sad”. 3- and 4-year-olds, however, as they begin to acquire basic emotion concepts, seem to become able to perceptually tell “angry” faces from “sad” ones, both of which fall under the

broader negative/unpleasant category (e.g., Russell & Widen, 2002). A more recent study done by Grosse et al., (2021) has investigated 4-11-year-olds' emotion vocabulary development through assessing their language production. First of all, they found that the older the children, the more emotion vocabulary they produced. Second, and more importantly, their results showed that children produced general positive or negative words most frequently, such as "good" or "bad" before they start to produce basic emotion terms such as "fear" or "sadness". Another interesting finding was that even 10-11-year-olds (the oldest group) produced less emotion words compared to that of adults. Although their pattern of production grew more similar to that of adults along with age, their study confirmed that the mastery of emotion vocabulary among children is a long process.

Additional related evidence comes from Fugate et al., (2010). In this study, adults were asked to view various chimpanzee facial muscle movements that they were not quite able to discriminate at the beginning of the experiment (for example screaming faces or play faces). Participants who were in the experimental group learned to associate these various facial expressions with nonsense words, and participants who were in the control group did not learn these words. The experimenters showed that the former group displayed what is often called "categorical perception" when perceiving and making sense of the various facial muscle movements, whereas the latter did not, demonstrating that the acquisition of new words does make one's emotion perception more fine-grained.

Emotion experience and the semantic network in the brain

In the past decade, there has been a surge of functional neuroimaging studies that attempted to investigate which areas of the brain are activated when people perceive and experience emotions (see Satpute and Lindquist (2021) for a review). What is exciting is that both individual experimental studies and large-scale meta-analyses are showing that brain regions consistently activated for semantic processing tasks are also employed during discrete emotion perception and emotion experience (Kober et al., 2008; Lindquist et al., 2012; Binder et al., 2009; Brooks et al., 2017). Figure 4 is a summary of the activation patterns drawn from such studies.

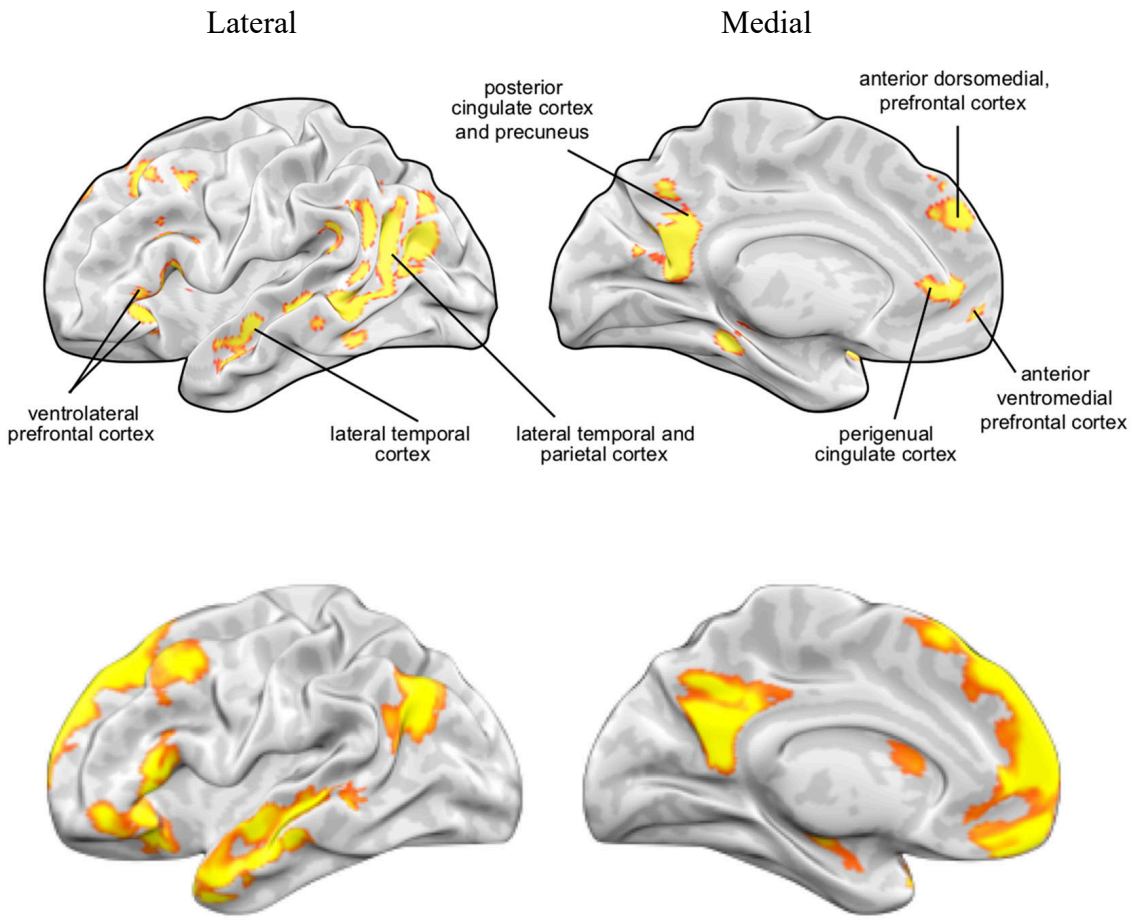

Figure 4: The upper two brain maps show areas consistently activated during semantic processing tasks (Binder et al., 2009). The lower two show areas activated during discrete emotion experience. Reprinted from Satpute & Lindquist (2021) with permission from Springer Nature.

The figure shows remarkable similarity in the activation patterns for semantic processing and the experience of discrete emotions. Common areas activated include the anterior ventromedial prefrontal cortex, anterior dorsomedial prefrontal cortex, posterior cingulate cortex, ventrolateral prefrontal cortex, lateral temporal cortex, lateral temporal and parietal cortex and lateral the temporal poles. The constructionists argue that the observed consistent activation of these prefrontal and temporal-parietal regions indicates a more domain-general "conceptualization" at work during discrete emotion experience (Satpute & Lindquist, 2021). Just as visual perception involves making meaning out of various lines and object positions, experiencing a certain emotion involves constructing meaning out of otherwise elemental, fuzzy body sensations (core affect). The reason why this process of conceptualization might be called domain-general is because these prefrontal and temporal-parietal activation patterns are observed consistently during resting-state fMRI as well. Resting-state fMRI means that the participant in the MRI scanner is not engaged in any kind of externally imposed task, and

that they are literally just “resting”. Although they are in a “resting-state”, their brains are always active, and decades of work on resting-state fMRI scans have come to show that there are multiple functional networks in the brain that show greater metabolic activity (and hence activation) when a person is at rest, compared to when a person is engaged in a cognitive task (Gusnard & Raichle, 2001). One of those networks is commonly referred to as the “default mode network” (Raichle et al., 2001). This network typically involves frontal and temporal-parietal activation, and is engaged when participants remember the past, think about what others are thinking/feeling, process words, categorize visual percepts, etc. All of these tasks commonly involve conceptualization, i.e., making meaning out of sensory information. For this reason, psychological constructionists have come to make the claim that various emotions are made of more basic (cognitively but not biologically basic), domain-general ingredients; different emotions emerge from the combination or the integration of different ingredients, such as somatovisceral changes in the body and conceptual knowledge (Satpute & Lindquist, 2019; Touroutoglou et al., 2015). All of this, graphically constructed, would correspond to Figure 1 & 2.

Although this is all correlational data taken from functional neuroimaging, there are some causal data as well in the literature. Guillory & Bujarski (2014) is a comprehensive synthesis of 64 intracranial stimulation studies. Intracranial stimulation is an experimental procedure conducted during surgical operations with patients suffering from some type of brain pathology and involves directly stimulating the surface of brain regions. The research synthesis revealed that direct stimulation of the lateral temporal cortex and the temporal pole elicited discrete emotions. Since these areas of the cortex are known to be important for semantics, this and the lesion studies taken together can be considered as causal evidence supporting the stronger argument that semantic conceptualization is necessary for experiencing different emotions.

8 Limitations with the current research state

So far, I have reviewed the various types of empirical evidence that support the psychological constructionist theory of language and emotion. Although these studies are certainly exciting, there is one important limitation that I believe is worthy of attention here. Most of the studies examine the relation of language and emotion at the level of words; none of them to my knowledge have gone beyond the lexical level. The reason why I consider this a limitation is because this does not say much about how actual language use, which

evidently goes far beyond dealing with individual words/concepts, shapes the experience of various discrete emotions. Actual language use, including production, which is the theme of this article, not only involves a lot more than just words, but is simply qualitatively different from just using words alone. Generalizations about language use from single word studies therefore need to be made with extreme care at the very least. A case in point is Nook et al., (2021), a study on the "crystallizing" effect of emotion naming that was reviewed earlier in this paper. The authors write the following (p. 195):

> "our findings challenge the clinical intuition that therapeutic interventions will be more effective if patients first identify what they are feeling. Instead, naming emotions may not be advised in situations where regulation follows immediately after labeling."

The validity of this claim is questionable since the experimental design only involved naming emotions using single words. Psychological therapy sessions in actuality almost never proceed in a way that involves single words alone; instead, they take place as a form of linguistic interaction between the therapist and the patient. This difference is not simply quantitative; it is qualitative in that language use simultaneously engages language users in a form of symbolic thinking that allows them to reflect on their thoughts with a certain focus from a certain perspective. This means that the language users have control of their thoughts to a greater extent than when not in use of language thereby making it easier to reorganize their thoughts and reappraise whatever events that happened to them. This process evidently does not occur with the use of single words alone, and thus the fact that none of the psychological constructionist studies that I am aware of that involve language production have dealt with anything beyond the lexical level seems as a limitation that requires to be overcome in future research.

9 Emotion experience and emotion expression

So far I have been discussing the psychological constructionist theory of emotion. None of the arguments I have introduced here have been on L2 and emotion specifically. More importantly however none of the articles that I am aware of have gone on to address the process of *expressing* emotions *verbally*, the central theme of this paper. Although resolving this issue is certainly no easy task and requires future empirical research, I posit here what I think is a plausible theory by extending the constructivist theory I have been talking about.

One key difference in how language plays a role between emotion experience and emotion expression is that the latter almost never simply involves the use of single words that realize emotion concepts. Verbal emotional expressions realize their emotions, but the way that this is done is often beyond the lexical level. An uttered emotional expression is oftentimes a phrase or a sentence that contains bits and pieces of chunks or constructions of various kinds that may or may not involve complex syntax. Based on this difference, I argue here that the way in which language is constitutive of our emotion experience becomes a little different than that proposed by psychological constructionists (although the basic logic is there). The latter proposes that it is through the linguistic concepts that shape our emotions. However, given that when producing emotional expressions verbally people go beyond the word/concept level, I argue that in the case of our native language, our emotions are also shaped by more embodied emoting patterns that exist in the form of conceptual chunks acquired through observations of or interactions with speakers of the language. Emotion concepts themselves are also not existent at the initial stages of language acquisition; they emerge out of increasing exposure to and usage of the language in different contexts, which is an idea that aligns with the usage-based account of language acquisition (e.g., Ellis, 2005)

Here is the process of verbal emotional language production extended by psychological constructionist theory:

> one experiences core affect (e.g., a rush of energy surging up from the viscera), conceptualizes it as an ongoing emotion often automatically with the use of embodied *conceptual chunks* that have been internalized and constructed from others' past utterances in previous social interactions and observations, which are turned together into emoting patterns, which finally gets articulated as a verbal emotional expression.

Below is a schematic figure of this process.

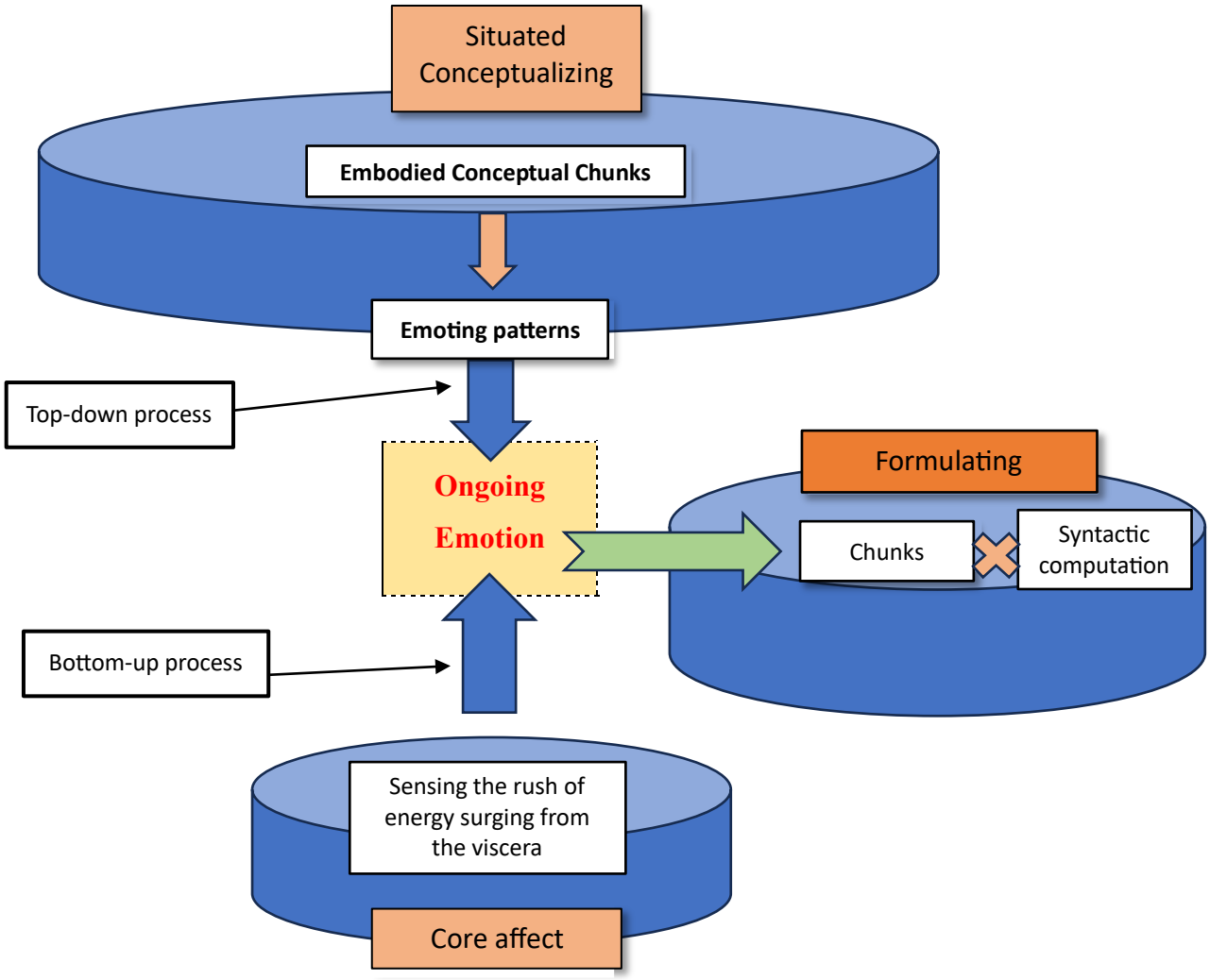

Figure 5: Proposed schemata of the verbal emotional expression process.

This figure indicates as psychological constructionism says, that people use top-down conceptual knowledge to interpret core affect as an ongoing emotion. This conceptual knowledge is not by any means constrained by language, but nevertheless is in numerous ways influenced by the acquired linguistic system. What this means is that when an L1 speaker conceptualizes for a verbal emotional expression, the conceptualizing is not directly linguistic (i.e., conceptual system is NOT the same as the linguistic system), but nevertheless virtually inseparable from the language one has internalized when talking about language production. How can this be so?

One way in which this is done has been discussed for decades, namely the "Thinking for Speaking" hypothesis (Slobin, 1991, 1996). Although this hypothesis has not gone without controversy, it says that when one prepares for speaking, one is engaging in a distinct mode of thinking, or conceptualizing for that matter, that fits well with the grammatical as well as

semantic and pragmatic features of the language. Much of cognitive linguistics research has shown that different languages not only have different ways of categorizing objects (e.g., Lakoff and Johnson, 1980; Lakoff, 1987), but have different ways of expressing grammatical meaning such as tense and aspect (see Slobin, 1991 for more detailed examples). The underlying assumption of Slobin's hypothesis is that these differences in how people express meaning should have its correlates in conceptual functioning, more specifically in how people attend to or focus on certain components when describing the same event. From a language learning standpoint, Slobin (1996) argues, "in acquiring a native language, the child learns particular ways of thinking for speaking".

Although this is certainly all exciting work, Slobin has only worked out an explanation of how the grammatical and semantic/pragmatic features of a language can shape people's thinking. In other words, his focus is entirely on the *linguistic* shaping of thinking. Thinking for speaking, however, gets *socially shaped* over the course of interpersonal interactions, and most crucially, it is within this social shaping that the linguistic shaping of thinking takes place. Therefore, it is of critical importance to highlight how thinking or conceptualizing patterns for that matter are constructed dynamically, on-the-spot, during linguistic social interactions and/or observations.

Let me start with an example to illustrate my point. When a child hears and learns the utterance, "You gotta be KIDDING me!!", the child is not just acquiring the language, i.e., the linguistic features present in this sentence and their meanings. They are developing a new emoting pattern in the conceptual system, and in this sense the conceptual system is going through change, a reorganization of some sort by tuning it to assemble conceptual chunks in specific ways that reflect both the syntactic organization of this sentence (conceptual development in Slobin's sense) and the more specific, embodied, and idiosyncratic ways in which this sentence was uttered including the prosodic and contextual/situational meanings. This is essentially why when the same child learns another utterance, "PLEASE tell me you're kidding me right now.", their conceptual system develops a still different emoting pattern; these two utterances are conceptually different although semantically similar. Therefore, when producing these two utterances, these two require different conceptual workings on-the-spot, a different way of activating and assembling conceptual chunks in the mind. Put it another way, the latter probably has different prosody, different contextual meaning, and a different cognitive focus, and therefore a different *emoting pattern* than that of the former one.

So what can one say about the *social shaping of thinking and emoting*? I propose here that not only is our thinking and emoting grammatically shaped (in Slobin's sense), but that our thinking and emoting goes through reconstruction or reorganization at the level of how the conceptual and emotional systems function, more specifically of how conceptual chunks get assembled and integrated into a particular thinking/emoting pattern during conceptualizing[iii]. This reconstruction or reorganization of the conceptualizing process might be manifested in acquired new prosody in one's uttered speech or in the tendency to use particular phrases over others that reflect other people's usage; more importantly however for second language acquisition, this change might be manifested in the ability to more smoothly and fluently express one's emotions in a second language.

Now I turn to how this argument ties in to second language acquisition.

10 Second Language Acquisition: Two Dimensions, Not One

The constructionist way of conceptualizing language and emotion would inform us that emotional expression in an additional language requires the *reconstruction of the feeling for speaking* at the level of the emotional system; simply learning the linguistic repertoire is not sufficient. How can one possibly reconsider or recapture the process of second language acquisition then? My own **proposal** is to have a fundamentally different view of the language learning process that is summarized in the following figure:

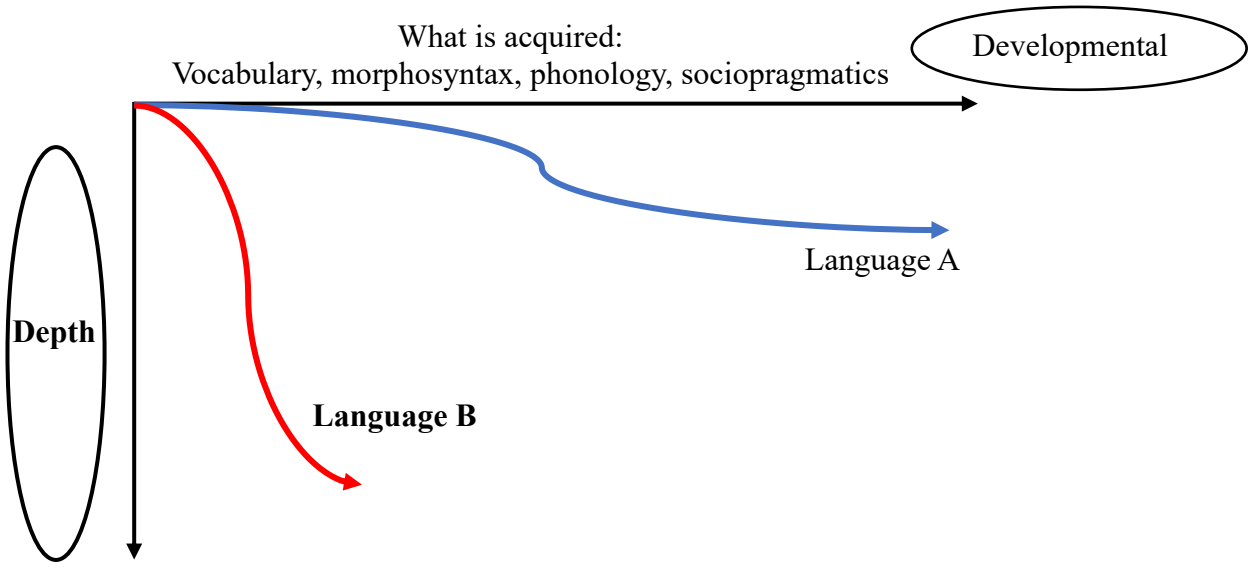

*Figure 6. Language learning conceptualized in two different vectors: the dominant developmental vector and the **depth** vector*

What is fundamentally new about this figure is that it considers another dimension of the second language learning process, namely how *deep* the learning is. This depth vector cares not so much about what is learned, but *how* what is learned is learned. This depth would essentially refer to the process of *constructing* emotions or emotion patterns (or *re-constructing* since an adult would have already established their emotional system in their own language/languages). This process can also be called conceptual "*restructuring*", but based on this way of conceptualizing language learning, the above figure shows that a language (Language A in the figure) can be learned through a lot of exposure and practice but in a shallow way, meaning that it is learned without much direct impact on or change to the workings of the emotional system during speaking. This figure shows at the same time that a language (Language B) can be learned very deeply with the learner constructing emoting patterns in the language and subsequently experiencing them in the form of feelings despite not having a great amount of exposure or knowledge of the language (e.g., vocabulary, morphosyntax, etc.).

Let me put this another way. What I am talking about here concerns the very fundamental question of what language learning is. Of course, learning words and phrases is language learning. Learning grammatical structure is also language learning. Learning to communicate in the language is language learning as well. But the point that I am trying to make is that all of these can be learning to *think and emote* in the language, which unquestionably involves "language" learning in the above senses but goes much deeper than that.

What this figure, combined with the previous arguments, inform us is that verbally expressing emotions in a second language is NOT a matter of attaching learned linguistic resources to already-existing emoting patterns with the hope of getting the two integrated with more practice; this would take a considerable amount of practice if it were to happen at all. Rather, it is more a matter of starting with a new emoting pattern, i.e., conceptualizing, that is socially shaped on the macro level and linguistically tuned on the micro level, so that the conceptualizing (emoting) smoothly gets realized and transformed into formulating and articulating (speaking).

I suggest that this view better capture the process of acquiring verbal emotional expressions in a language that is not yet one's own. I propose, in addition, that this view, integrated with the dominant developmental view would provide a more comprehensive account of the adult second language acquisition process overall.

11 Related arguments in SLA and bilingualism

Although there is no *direct* evidence at this moment that supports this view, there are in fact *related* arguments worthy of discussion that have been made in SLA and bilingualism. First, I will discuss the argument made by Pavlenko (2005) on the two different levels of meaning. Then, I will go on to share what the well-known bilingual writer Eva Hoffman said in an interview with the psycholinguist François Grosjean documented in Grosjean (2021).

Semantic and conceptual levels of meaning

In *Emotions and Multilingualism (2005)*, Aneta Pavlenko makes the claim that many researchers in linguistics and psychology have for a long time assumed a single, straightforward representation of meaning. This, according to her, is primarily due to the monolingual orientation in the research fields, where the majority of the studies on language acquisition and use have been focusing on investigating monolingual minds where the "concepts neatly map onto the words" (p. 84). However, when one looks at the mental representation of bilinguals and multilinguals, this way of conceptualizing meaning soon turns out to be flawed. This is because a word can be learned and therefore represented in the mind in primarily two different ways. One way is to learn the word meaning through its translations (see Kroll & Stewart, 1994 for example). The translation in turn would provide the learner with a representation that is somewhat conceptual but nevertheless in the L1 (or the language that the word was translated into). This is often problematic because of what is widely known as conceptual non-equivalence (see Altarriba, 2003 for example); the conceptual representations that constitute active units of meaning are not the same across languages. Another way to learn a word is through direct experience with the word (and ultimately with the language). This is how a great portion of child language acquisition (and although debated, adult second language acquisition as well) proceeds. A word that is learned through situated experience would have richer, multimodal representations (see Jeong et al., 2010, 2021 for an empirical study; see Li & Jeong, 2020 for a review), which are likely to be tied to emotional, visual, motor, and somatovisceral systems among others. Since the word is at least not directly and/or primarily linked to another word, the representation is conceptual in nature for the most part.

Based on these theoretical foundations, Pavlenko claims that researchers in the scientific study of language need to realize that there are two levels of meaning, namely semantic and conceptual. Semantic meaning is largely mediated linguistically and not directly through a

concept. Conceptual meaning, on the other hand, is closely tied to our basic visual, motor, sensory systems and more generally, conceptual/emotional systems in the mind and brain.

This view would be compatible with my proposal of how second language acquisition can be understood. Namely, a language that was learned primarily through direct experience with it and less through dictionary definitions or translation "equivalents" could in theory be represented and therefore reside in the mind very deeply fairly regardless of how much time or exposure the learner has had. A language that was learned mostly through textbooks and word lists would not be likely to be learned very deeply and hence might not be represented in a similar fashion as the former even after a considerable amount of time and exposure.

Functional and internal bilinguals

The internationally acclaimed writer Eva Hoffman, famous in applied linguistics especially for her memoir *Lost in Translation*, makes a similar claim in her interview with François Grosjean. She suggests that people make the distinction between functional and internal bilinguals. She says the following:

> "I think perhaps we need to distinguish between functional and internal bilingualism. You can speak two languages very well, but not incorporate them into your psychic life. But if both languages are ***deeply incorporated into your psyche*** – your consciousness, and perhaps deeper layers as well -- then hopefully you do become one, linguistically integrated person. For me, one crucial moment in my trajectory was when I started dreaming in English. Later still, I had a dream in English which I had originally had in Polish; that was the moment when I understood I had become truly ***internally bilingual***."
>
> (Bolds and italics added by the author, extracted from Grosjean (2021) pg)

What she says here is perfectly aligned to the depth vector proposed earlier in this paper. "Functional bilinguals" might be those who have a good level of proficiency in the language with a large vocabulary and high grammatical competence, but they might not be much emotional in the language because the emotional system is not constructed much. "Internal bilinguals", on the other hand, might exhibit the opposite; they may or may not have high proficiency in the language, but they might be able to emote in it since the emotional system is constructed.

12 Underlying mechanisms of L2 emoting: A final discussion

Having discussed the theory and the model by which the language learning process can be seen in a new way, the question then is how exactly *deep* learning, or the *constructing* of emotions might occur. Would this occur simply through social interaction? Would this occur through input in general (regardless of the type and modality of input)? Would this happen through output? This is an empirical question, one that seems to require various methodological approaches. One particularly inspiring line of approach, however, is the incorporation of functional neuroimaging. One leading study by Liu et al., (2023), for instance, utilized fMRI to investigate how people's history of social interaction affects their L2 emotionality. They found a significant positive correlation between the intensity of social interaction (measured through a social interaction questionnaire) and brain activity in the affective reward system including the left ventral striatum during the processing of L2 positive words. This study was the first to provide a neurological basis of emotionality acquisition in L2. Although this approach is undoubtedly promising, more refined theoretical frameworks need to be established in order to have a say on precisely HOW learners might construct emoting patterns in the target language. It is to this question that I finally turn.

Following the Vygotskyan view of language and conceptual development (and sociocultural theory in SLA that derived mainly from it), it would be reasonable to think that constructing emoting patterns would require first and foremost the process of *incorporating/appropriating others' emoting pattern*s (more specifically from one's interlocutors). In what situations and under what conditions could this happen? One of the most optimal, if not the most optimal, situation might be one in which the learner is *interacting with* his/her interlocutor(s). Why is interaction beneficial? The field of SLA has now had a long history with this question and has provided important answers, such as the existence of negotiation of meaning, corrective feedback, output opportunities, and alignment. (Neuro)cognitively speaking, social interaction is beneficial because it provides learners with more embodied, multimodal ways of learning (Jeong et al., 2021). Interactions in social contexts have the potential to invite learners to engage in embodied cognition, allowing them to create richer, multimodal representations of the various features of language (Bergen, 2012; Shapiro, 2014; Barsalou, 1999).

A critical point, however, is that social interactions do not automatically allow learners to incorporate/appropriate others' emoting. This seems to be compatible with the phenomena where not all second language learners who have had tens of years of experience in the linguacultural community exhibit smooth control of the language including the emotional

domain. In other words, social interaction and embodied cognition, the underlying cognitive mechanism, although necessary, are not sufficient.

I propose my own hypothesis here that what becomes critically important is the ***desire*** to identify and align with a certain person or a group of people who speak the language. A point worth mentioning is that this desire concept is not qualitatively the same as what has been referred to as "integrative motivation" in the literature (Gardner, 2007). It is not the same in the following sense. The concept of "integrative motivation", perhaps somewhat differently from the initial version, has in fact come to be quite broad in its scope: not only does it mean a genuine interest in or a favorable attitude towards the target linguacultural community, but it has come closer to mean "openness to cultural identification" or "an absence of Ethnocentrism/authoritarianism, or the presence of Xenophilic attitudes etc." (p. 15). This notion is fundamentally different from my notion of desire. What I mean by the latter is a strong interest in the way a specific person or specific people *be* in everyday life. This *way of being* might be precisely embodied in the ways they speak the language on the macro level and on the micro level in the specific tone of voice, range of volume, the type of paralinguistics that they use, etc. But this is by no means limited to the language use aspect. It can very well also be embodied in the various aspects/features of how they *are* including their physical features and their various personality traits, and how they *self-express*, such as their appearances, their way of treating others, or their hobbies. A learner can have the desire to *be like that person* in some or many of these aspects of the person. As a result, they may take up those aspects a lot more smoothly and deeply than other people who do not have such desire. With regards to the language learning process, someone with this quality of desire could be cognitively and affectively more engaged (in terms of attention, memory, and emotional systems) in the process of trying to think as well as emote like that specific speaker or that specific group of speakers. This would allow the learner to more easily incorporate and subsequently construct emoting patterns from them, given that social interaction opportunities are present. A real-life example where this type of desire exists could be when a learner is in love with a person who speaks the language. Not only would the learner want to communicate with this person, they even might want to *be* like this person in multiple ways (ways of talking, self-expressing, behaving, etc.). One interesting investigation in the future therefore might be to look into the international couple population and examine their language learning process.

13 Conclusion

In this paper, I have sought to argue that there are two dimensions to the second language acquisition process. The developmental vector has been the object of attention and investigation of the majority of research, whereas the depth vector in the sense that I proposed seems to be scarcely discussed or even recognized. I drew on research insights from multiple different fields spanning from language production to psychological constructionist theory of emotion to support my argument. Although the lack of empirical evidence at this point prevents me from putting forth a definitive version of this argument, I propose that SLA researchers incorporate this new model in their thinking to further advance our understanding of the second language learning process.

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[i] There has been some work that looked at the often-different ways of emotional expressions among bilinguals in their two languages (there has been a lot of work into the bilingual's perception of the two languages). Koven (2006), for example, examined a French and Portuguese bilingual's affective displays in the two languages during narratives of personal experience. Although work like hers has shown that bilinguals often take different

affective stances and feel different levels of intensity (or psycholinguistically speaking, different levels of arousal in both ends of emotional valence), discussions on what creates or leads to those differences in the easiness to communicate emotions from an adult second language acquisition standpoint have been very scarce.

[ii] In this case, emotion concepts like happiness or anger.

[iii] Note that the social as well as linguistic shaping effects on conceptualizing is, for now, limited to during conceptualizing for *speaking*. I am not going as far here to claim that those effects also exist on non-linguistic cognition, i.e., how the conceptual and emotional systems work when one is not using the linguistic system.