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**NEGATIVE EMOTION DISCLOSURE
IN SPANISH AND ENGLISH BILINGUALS**

By:

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**SUBMITTED TO SCRIPPS COLLEGE IN PARTIAL FULFILLMENT
OF THE DEGREE OF BACHELOR OF ARTS**

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Abstract

Previous literature has identified a difference in emotion comprehension and production of bilinguals. This study aimed to explore differences in emotion expression in the first language (L1) and the second language (L2) among Spanish and English bilinguals. The bilingual participants were interviewed and asked to recount two frustrating events, one in their L1 and one in their L2. These interviews were analyzed for the occurrence of four semantic categories: emotion words (with a subcategory of negative emotion words), emotion-laden words, expressive interjections, and intensifiers that strengthen content words. The data indicated that Spanish and English bilinguals both used more emotion words and emotion-laden words in English than in Spanish. For negative emotion, native English speakers again used this feature more in their L1 than their L2, whereas native Spanish speakers showed no difference between languages. Expressive interjections and intensifiers that strengthen content words were not significantly different across the predictor variables. I propose several explanations for the results: that participants may have differed in their L2 proficiency, where native Spanish speakers had a better command of their L2 than native English speakers with their L2. Additionally, it is possible that native Spanish speakers showed a large percentage of their emotions in their body language (e.g., facial expressions, hand gestures). These findings may contribute to areas where emotion is often expressed, such as the realm of mental health. In particular, insight into the relationship to language and emotion could better inform therapy-based interventions for bilingual clients. For instance, strategic language switching during a session could facilitate clients' emotion regulations and their disclosures. Future research is needed to explore these avenues of inquiry.

Language and emotion are inextricably linked. We as humans use various facets of language to both express and perceive emotion. Emotion is conveyed by the semantics of language, as well as suprasegmental features, such as loudness, pitch, or stress, and expressive interjections (e.g., *wow!*) or intensifiers (e.g., *very much*), to name a few (Pavlenko, 2006; Pérez-García & Sánchez, 2019). Body language and facial expressions also help convey these feelings (Keltner et al., 2019; Martinez et al., 2016). Previous work in psycholinguistics indicates that there may be differences in how we express emotion in our native or first language (L1) versus our second language (L2). With a growing population of multilingual speakers in the United States, now 20% of the total population (Ziegler & Camarota, 2019), it is important that mental health practices in the U.S. reflect the challenges and complexities of a linguistically and culturally heterogeneous society. More concretely, a deeper understanding of bilinguals and their relationship to language and emotion can help to better mental health services and therapy training for bilingual therapy interventions. For instance, there is evidence that individuals can be more objective or detached in their L2 than in their L1 (Byford, 2015; Greenson, 1950; Keysar et al., 2012). In turn, we often have more emotional reactions (e.g., skin conductance reaction) to words in our first language (L1) than our second language (L2; Harris et al., 2003; Kazanas & Altarriba, 2016). Understanding a person's L1 and L2 as they relate to emotion may serve to better inform social interactions and services that benefit our multilingual communities.

L1, L2, and Emotion

A significant subset of the research on language and emotion focuses on the comprehension of emotion among bilinguals. These studies produce consistent results: L1 input triggers more intense and faster emotional responses in an individual than the same input in L2 (Bhatara et al., 2016; Harris et al., 2003; Kazanas & Altarriba, 2016). However, less consistent

patterns emerge with respect to language production. While production results tend to align with comprehension studies, they are less common and often qualitative in their design, making it difficult to generalize their findings.

Despite this gap in the literature, the investigation of the relationship between speech production and emotion has various implications for understanding and improving our socioemotional interactions. Considering this, the central question of this study is as follows: Do bilingual individuals use less emotional language when they are talking in their L2? More specifically, are Spanish-English bilinguals less likely to use emotional language (operationalized using a set of linguistic features) when discussing negative emotional topics in their L2? Comprehension studies are primarily interested in how a linguistic stimulus affects a participant and how the participant processes the emotion-related information. Research on language production and emotion, contrastingly, focuses on the content of what participants do or say. As comprehension studies are more abundant, they will be discussed first in order to best capture the scope of the existing literature.

Bilingual language comprehension and emotion. Numerous studies on comprehension illustrate the differences in L1 and L2. In Harris et al.'s (2003) study, the researchers monitored skin conductance (higher skin conductance correlate with more emotional responses) of 32 Turkish-English bilinguals, while presented with four word-type categories: positive (e.g., *bride, joy*), aversive (e.g., *disease, kill*), taboo (e.g., *asshole, breast*), and reprimands (e.g., *Don't do that!* and *Go to your room!*). All categories produced stronger skin conductance responses (SCR) when presented in the participants' L1 than in the L2. Significant differences were found for taboo words and reprimands, which elicited the strongest responses for the participants in their L1. The researchers speculated that the differences in response to emotion-laden words may be a

product of having learned the L1 at an earlier age, when the individual also developed emotional regulation systems. This process has been referred to by some as amygdala-mediated learning (Caldwell-Harris, 2014), in which a physical experience of emotion is linked to a specific word or phrase. Caldwell-Harris uses this learning style to explain why language spoken in one's childhood may carry emotional responses. Emotional regulation systems develop alongside acquisition of the first language (Bloom & Beckwith, 1989). Caldwell-Harris thus hypothesized the potential of the brain's network of emotions to be closely linked to L1 speech and utterances (Anooshian & Hertel, 1994). Insight into the association between emotion and language learning in early age can guide predictions into reasons for this effect in language production.

While an individual's processing of emotion and their consequent reaction tend to occur more strongly in the L1, there are some factors that may improve emotion processing in the L2. In Ożańska-Ponikwia (2019)'s study, 72 Polish-English bilinguals who had emigrated from Poland to Ireland and England, were tested on their perception of the emotional statement *I love you* in Polish and English. Although participants perceived this statement stronger in Polish (their L1) than in English, the data suggested that length of stay in an English-speaking country and their self-perception of L2 proficiency were predictors of an increased stronger perception of the statement's emotionality in the L2. Therefore, while emotion processing tends to be consistently stronger in the L1, there are some factors that may enhance L2 emotion comprehension.

To take it one step further, it is important to consider the potential for L2 becoming the dominant language. The term 'L1' is often used interchangeably as the dominant language, or the language used most frequently. However, in some cases, the L2 may become the dominant language as a result of changes in the environment that increase the prominence of that language.

For example, Kazanas & Altarriba (2016) used a lexical decision task in which 60 Spanish-English bilingual participants determined if a series of stimuli were words or nonwords, and measured the response times (RTs) of these bilingual participants. The researchers compared RTs for participants in their L1 and L2, for stimuli comprised of positive and negative emotion words (e.g., *passion*, *anger*) and emotion-laden words (e.g., *butterfly*, *murder*). They found that RTs were significantly faster only among emotion words for participants when presented in their dominant language. The dominant language is frequently correlated with the L1. However, while in Kazanas & Altarriba's study the L1 and L2 were determined by order of language acquisition, the L2 for all participants had become their dominant language, because they used it significantly more in their everyday lives, and had decreased their daily usage of the L1. Their study shows that language dominance and frequency of language usage can play a role in language processing. Furthermore, it illustrates the nuance in language processing and language spoken, complicating the ability to make definite conclusions on how bilinguals produce emotion in their languages. That being said, a faster reaction to emotion in one's dominant language may benefit an individual during a therapy session, because they may access these emotions more quickly and more acutely than in their non-dominant language.

Kazanas and Altarriba (2016) also conducted a study on emotion words and emotion-laden words. However, these are only some of the linguistic features that can be used to determine comprehension. Another important group of features can be found in prosody. Prosody involves linguistic features such as tone, intonation, stress, and rhythm - features that are often associated with emotional state. In Bhatara et al. (2016)'s study, native French speakers differing in English proficiency were asked to identify different emotions (pleasantness, power, alertness and intensity) based on stimuli of emotionally expressive English speech. The results

indicated that participants with higher proficiency in English were less skilled at identifying prosodic elements in speech in English, demonstrating that second language ability may actually interfere with the ability to recognize emotion from speech prosody. While this study measured participants' comprehension of emotion via prosodic elements, the studies conducted by Kazanas & Altarriba (2016) and Bhatara et al. (2016), which reinforce the relationship between language dominance and early language acquisition as it relates to emotion, may serve as a parallel to production studies, where the literature is lacking.

Production studies and emotion. Studies of speech production often attempt to emulate naturalistic speech so that participants produce language similar to their vernacular. Many production studies are qualitative or semi-qualitative in their data collection. A study conducted by Byford (2015) recounted various case studies with bilingual patients in which their L2 had been learned post-childhood, at various life stages. In one example, a native German speaking woman who moved to the UK and had learned English in school reflected on two different periods of time where she had gone to therapy - one in Germany, where sessions were conducted in German, and one in the UK, where sessions were conducted in English. As a daughter of parents who lived in Germany during World War II, she contemplated the challenges of working through transgenerational guilt in her native tongue. Because the woman's intense emotional experience was associated with her L1, her L2 was able to provide an 'intellectualizing detachment' (Greenson, 1950), which made discussing this guilt easier. The phenomenon of intellectualizing detachment has been proposed in congruence with the so-called detachment effect. Both of these terms describe a process of detachment that can occur in the L2. Having learned the L2 in a later and different context than the L1, individuals may have an easier time detaching from the content they are discussing if they are describing the feelings in their L2.

Upon analyzing this case study in tandem with others, Byford identified a key pattern: memories are more detailed and more emotionally intense when disclosed in the linguistically encoded language - the language the experience was processed in (Byford, 2015; Harris et al., 2003; Marian & Kaushanskaya, 2004; Marian & Neisser, 2000). This is likely because of the association the individual has made between the experience and the language in which it occurred. By contradicting previous research in the field, the pattern observed here speaks to the nuance and complexity of how emotion relates to bilinguals. It is important to note that qualitative data with a small sample size makes this pattern difficult to generalize across populations. Nonetheless, this pattern is relevant to forms of therapy where clients reflect on moments in early stages of life in the language of their choice.

That being said, some quantitative studies are more supportive of an L1/L2 dichotomy. For instance, Keysar et al. (2012) conducted various experiments in which participants were tested for myopic loss aversion in a foreign language. Myopic loss aversion refers to the tendency of an individual to make decisions that maximize their gains and minimize losses. Participants were asked to make betting decisions in their second language, and results indicated that their loss aversion was reduced compared to their L1. These experiments provided evidence for 'less emotional' responses in the foreign language. Overall, decision-making biases were reduced when making those decisions in their L2. In this study, the researchers also proposed a distancing mechanism that may occur in a foreign language that facilitates decision-making, similar to Greenson's (1950) proposition of intellectualizing detachment or the discussion of the detachment effect. They describe this mechanism as moving away from the intuitive system of language and emotion in the native tongue to a more calculated thought process (see Santiago-Rivera and Altarriba (2002) for a summary and discussion). By reviewing studies of

Spanish-English bilinguals in therapy, the researchers identify consistent detachment effects in the L2. They claim that bilinguals who have acquired their first language in one cultural environment and their second language in a different cultural environment are likely to exhibit these detachment effects in their L2 (Marcos & Urcuyo, 1979; Marcos, 1994).

Therapy in L1 and L2

As researchers consider issues of detachment and emotion in language, we can turn to therapy in a bilingual context. Expression of emotion is considered a key part of the therapeutic process. While many therapy and clinician programs require cultural awareness and sensitivity training, the experiences of bilingual individuals remain under-researched. Acknowledgment of a client's L1 and L2, and their relationship to each language may help clinicians develop a deeper understanding of its impact on therapeutic practices. With the continued rise of native Spanish speakers in the U.S (Altarriba & Santiago-Rivera, 1994), mental health services should reflect those needs.

Emotion disclosure in therapy. The relationship between emotional disclosure and therapy is important in understanding the benefits of L1 and L2 usage in these therapy sessions. Emotional disclosure - sharing of feelings, reflections, experiences, etc. - is a crucial step in a patient's coping and healing process (Hemenover, 2003; Pennebaker, 1995). Among trauma patients, emotional disclosure has been shown to relieve anxiety and depression, and increase self-perception (Hemenover, 2003). Overall, disclosure of emotional and traumatic experiences can increase both psychological and physical health (Zech et al., 2007).

Existing therapy interventions for Spanish-English bilinguals. Some techniques have already been used among Spanish-English bilinguals to incorporate multiculturalism into a therapy session. Altarriba & Santiago-Rivera (1994) looked at one such technique: *dichos* and

cuentos therapy. *Dichos* therapy uses Spanish proverbs, which describe attitudes, behaviors, and moral values, that can be used by the therapist to bypass certain forms of client resistance to discussing particular topics. By redirecting the conversation from a personal context to a widely known saying, *dichos* tap into cultural phenomena that may provide comfort for the client. Analogously for children, *cuentos* therapy, developed by Constantino et al. (1986), involves using characters in stories that reflect the experiences and beliefs of the child. While working with 120 Puerto Rican children and incorporating folktales from Puerto Rican culture, the researchers found a significant reduction in anxiety and depression compared to control groups (consisting of traditional therapy and no therapy at all), and this remained the case a year after this study. These approaches point to a clear advantage of cultural literacy from mental health experts.

Other researchers have explored the benefits of language choice and language switching for clients during their sessions. Pérez-Rojas et al. (2019) conducted a study where eight bilingual Latinx individuals were interviewed about their experiences using Spanish and English in psychotherapy. Psychotherapy and psychoanalysis require reflecting on childhood, with the understanding that those formative years impact the way the client has processed or coped with their current situation. The majority of the participants listed benefits of using both Spanish and English. Participants claimed that the ability to switch between languages allowed them to express their emotions better, such as recounting an experience in the language it occurred in (thus the linguistically encoded language). Furthermore, having the ability to choose which language to reflect in has shown success for psychotherapy patients (Byford, 2015). Benefits of L2 disclosure may exist because the potential for objectivity and detachment in the L2 allows the

clients to have easier initial access to those emotional experiences without becoming distraught (Softas-Nall et al., 2015).

The client's ability to choose or switch between languages during therapy sessions may point to environments that already exist in bilingual households and benefit the bilingual client. Research on methodical language switching (also known as code switching) in various settings is much more abundant than studies that compare similar interactions conducted consistently in one language at a time. For instance, a literature review by Softas-Nall et al. (2015) identified various studies that illustrated the benefits of language choice in bilingual and multilingual households. It is possible that this research can point to benefits of dual-language communication in therapeutic settings. More specifically, in a study, Perez Foster (1998) found that clinicians reported higher levels of emotional control among their clients when conducting sessions in clients' L2. In turn, the clients were less successful discussing their negative emotional experiences that occurred in the client's L1 because it was the language the experience had been linguistically encoded in. As a result, discussing in the L1 provoked the emotions they had felt in the moment. This helped the client discuss sensitive subjects without experiencing as much emotional distress. Proficiency in both languages and cultural understandings on the part of the mental health professional are imperative for these cases. Clients benefit from the ability to choose the language in which they recount their experiences, and do so with a clinician who understands their language background (Pérez-Rojas, 2019).

Linguistic features of emotion

Researchers have found different ways to operationalize emotion. Merriam-Webster defines emotion as *a state of feeling* (n.d.). Emotion, however, is not clearly defined in the existing literature. Various aspects of language help us to convey emotion. For instance, humans

often materialize emotion through lexical items (words). Previous studies have used emotion words and emotion-laden words to categorize emotion. Emotion words are words that directly encompass specific affective states (e.g., *sad*) or processes (e.g., *to worry*; Pavlenko, 2008). Emotion-laden words do not refer directly to emotions but instead elicit emotion in the speaker (e.g., *loser*, *cancer*; Kazanas & Altarriba, 2016; Pavlenko, 2008). Often, emotion-laden words are subcategorized as the following: taboo and swear words (e.g., *shit*), insults (e.g., *idiot*), reprimands (e.g., *behave*), endearments (e.g., *honey*), and aversive words (e.g., *snake*; Harris et al., 2003). Ekman (2008) identifies six basic emotions: joy, sadness, anger, fear, disgust, and surprise. These emotions have often been used to identify emotion and emotion-laden words (Johnson-Laird & Oatley, 1989; Pavlenko, 2008; Pérez-García & Sánchez, 2019), although no unified definition or grouping of linguistic terms has been agreed upon by linguists and psychologists.

Other ways that emotional language has been explored is with expressive interjections, such as *wow*, *oh my God*, or *hah!* (Jovanovic, 2004; Pérez-García & Sánchez, 2019). Expressive interjections contrast with other word categories such as exclamations, in that they convey spontaneous emotions, feelings, and attitudes to the listener. Finally, intensifiers that strengthen content words also help to convey emotion. Intensifiers are particularly special because they show that the subject discussed is valued highly by the speaker, and that they do not feel neutral about the topic at hand (Foolen, 2015). Consequently, intensifiers add to the emotion of the message that the speaker conveys to the listener.

Still more ways exist of categorizing emotion in language. For instance, Pérez-García & Sánchez (2019) collected data on syntactic constructions produced by their participants in their L2. In these constructions, they measured for declarative, exclamative, interrogative, and

imperative sentence types. The researchers found that participants used different types of syntactic constructions depending on the specific emotion they wanted to convey. Once again, it becomes evident that there is no single way of operationalizing emotion, and thus, no conclusive definition exists on how to construct a universal set of linguistic categories depicting emotion in language production. Consequently, the present study draws from existing research to develop a viable set of categories that operationalize emotion.

The present study

Though many psychologists have shed light on the importance of emotion disclosure for processing and development during psychotherapy (Hemenover, 2003; Zech et al., 2007), it is still not clear what effect language choice has on the ability to disclose such emotion. It is possible that a therapist's ability to effectively communicate with a client in multiple languages may even contribute to healing and change. For this reason, the present study aims to answer the following question: Are Spanish-English bilinguals less likely to use emotional language (operationalized below) when discussing emotional topics in their L2? Participants were asked to recount two separate frustrating events, one in English and one in Spanish. These interviews were coded for percentage of emotion words, emotion-laden words, expressive interjections, and intensifiers that strengthen content words. I hypothesized that interviews with Spanish-English bilinguals contained less emotional language when conducted in the L2 when compared to interviews in the L1. The theoretical underpinning for this prediction is the detachment effect that may occur when an individual speaks a language learned post-childhood and in an academic setting that is often used as a form of intellectualizing detachment. I also hypothesized that participants' L1 was positively correlated with the amount of emotion they used when recounting frustrating events. Other participant factors, such as manner of acquisition or frequency of

language usages, or differences inherent to aspects of the Spanish or English languages, and their associated cultures, may have an impact on these hypotheses.

To operationalize emotion, the present study examined four categories of emotional language. The first two consisted of the frequency of both emotion and emotion-laden words in an interview. Emotion and emotion-laden words were coded based on two of the six basic emotions identified by Ekman (2008), *sadness* and *anger*, in addition to *anxiety*, and *positive affect*. Additionally, the frequency of expressive interjections, (eg. *wow!*, *oh!*), and intensifiers that strengthen content words (eg. *very*, *really*, *freaking*, *extremely*) were analyzed. Combined, these four linguistic categories constructed the notion of ‘emotion’ in language.

Participants in this study were Spanish and English bilinguals. They were interviewed in their L1 (Spanish or English) and L2 (Spanish or English) about three emotional events, two frustrating, and one joyful. These interviews were then coded for the aforementioned linguistic elements. In order to determine level of proficiency, manner of acquisition, and order of acquisition, all participants completed an online survey in which they answered questions about age of acquisition, primary manner of acquisition, and self-rated proficiency, for both of their languages.

Method

Participants

According to Harris et al., (2003) a power analysis revealed that 26 participants would be needed for this study using a mixed-model ANOVA, where $\alpha = 0.05$, power = 0.08, and with an estimated effect size = 0.258. However, the present study consisted of 11 Spanish and English bilingual participants. This number was selected due to practical limitations of conducting the thesis in a single semester. Participants were recruited through word of mouth by faculty members at the consortium where the study was conducted. Participants were compensated \$10

for their participation. Participants were selected based on their first language (Spanish or English) to ensure an even number of participants with Spanish or English as their first language. For 45% of participants, their L1 was English. Participants consisted of seven women and four men. In the survey they completed, participants could select multiple races with which they identified. The study consisted of 36.4% Hispanic, 9.1% Middle Eastern and White, 27.3% White, 18.2% Hispanic and White participants, and 9.1% unknown. Participants' age ranged from 20-36 years of age [$M= 29.6$]. Table 1 summarizes additional participant variables.

Table 1

Participant variables

Participant number	L1	L1 manner of acquisition	L2 manner of Acquisition	L1 self-rated proficiency	L2 self-rated proficiency
1	Spanish	Home	School	6	5
2	English	Home	School	6	5
3	Spanish	Home	School	6	5
4	English	Home	Home	6	4
5	English	Home	School	4	3
6	Spanish	Home	Environment exposure in early childhood	5	6
7	English	Home	Exchange program	6	5
8	Spanish	Home and school	School	6	5
9	English	School	Home	6	4
10	Spanish	Home	School	6	4
11	Spanish	Home	School	6	5

Materials

Self-rated language proficiency

The American Council on the Teaching of Foreign Languages (ACTFL) Scale (ACTFL, 2012) was used to measure participants' self-rated proficiency in their L1 and L2. The ACTFL scale is a one-item, rating scale on which participants rated spoken proficiency from 1 to 6, where 1= *novice*, 2= *intermediate*, 3= *advanced*, 4= *superior*, 5= *distinguished*, and 6= *native*. Participants were provided with a brief definition of each numerical value on the scale (see the appendix), which they used to match their self-evaluated proficiency level. Participants rated their L1 and L2 according to the ACTFL scale described below; participants rated their L1 between 4-6 [$M=5.73$, $S.D.=0.65$] and their L2 between 3-6 [$M=4.64$, $S.D.=0.81$].

Participant Variable Survey

An online survey was created via the survey platform Qualtrics. The survey captured language acquisition order, manner of acquisition, spoken language proficiency, age, race, and gender of the participant. Order of acquisition was measured by having participants identify their L1 (Spanish or English). The following question asked participants how they acquired the language (manner of acquisition), and they could select *home*, *school*, or *other*. Participants also could write in a different answer for the *other* option.

Participants could select their age from a dropdown menu. Race was determined from a ten-item list, where participants selected all that applied. Eight items consisted of different races (Black, Hispanic, American Indian or Alaska Native, Asian, Middle Eastern, Native Hawaiian or Pacific Islander, White, Mixed race). Participants could also select *prefer not to answer*, or *other*, accompanied by a blank space to write in a different option. Lastly, participants could select their

gender from the following options: *Man, Woman, Nonbinary, other* (with fill in the blank option), and *prefer not to answer*.

Interview

Participants were asked to recount two separate frustrating experiences where one story was told in Spanish and one was told in English. Participants were prompted in the language they were asked to respond in. They were told to think of a frustrating experience relating but not limited to the domains of family, school, social life, or work. The focus on negative emotion, and on frustration in particular, was chosen because recounting frustration serves to simulate a counseling setting, in which clients would typically discuss negative emotions rather than positive ones. Frustration as the emotion of discourse was selected intentionally, and results were not extended to scenarios where individuals discuss joyous events. If participants were unable to produce consistent speech for at least three minutes, they were asked open-ended follow-up questions that elicited more specific details regarding the experience such as *how did this frustration resolve itself?*, *what was the source of this frustration?*, or *what else were you feeling at this moment?*. Participants were asked to describe how the frustration resolved, if it did, although for some participants it did not resolve. These questions served to elicit a negative emotional response from participants.

Participants were then asked to recount a time when they experienced joy. For this item, participants were allowed to respond in the language of their choice. This question was posed in order to undo any potential harm or discomfort caused by recounting a frustrating experience. See the appendix for all questions used.

Amazon Transcribe, an online transcription service operated by Amazon, was used to transcribe all Spanish and English interviews to a written text.

Procedure

Upon recruitment, participants completed a Participant Variable Survey in which they were provided with an informed consent form. This form detailed privacy concerns of recordings, confidentiality of all information, and the minimal risk of sharing a frustrating story. Participants were also asked questions regarding their acquisition of Spanish and English. At the end of the survey, participants were scheduled for an interview in Zoom.

Participants were randomly assigned to start the interview in their L1 or their L2. Participants were prompted to think about and recount two (2) separate events or times that they felt frustrated, from any of the following domains, or any other domain they could think of: school, work, social interaction, or home context. They then repeated this process in the other language (L1 or L2, depending on order).

Following the recounting of the event of frustration, participants were asked to recount an experience that brought them joy in the language of their choice. After approximately ten minutes of speech production, the interview portion finished. Participants were debriefed verbally, and sent a copy of the debriefing statement via email. They were thanked for their participation, and compensated.

Ethics

The ethics of the methods used have been seriously considered. The present study was expected to bring minimal direct benefit to the participants. However, gaining information on L1 vs. L2 emotion disclosure similar to what might occur in a therapeutic setting could contribute to how therapy is conducted with bilingual clients, potentially including the participants of this study. It may also add to a growing body of evidence that can inform new interventions and techniques for therapy with bilinguals.

Additionally, the level of risk to participants is minimal. They were asked to share a personal story connected to a frustrating event that may or may not have resolved. Participants were allowed to choose their frustrating events, and the events could come from an academic, social, work, or home context. They were briefed before agreeing to participate about being asked to do this, and they could choose to participate in the study. Although participants may have found themselves sharing somewhat emotional experiences, the level of risk did not exceed that experienced daily, since sharing these experiences may have occurred in quotidian context. The well-being of the participant was protected by providing informed consent, debriefing after the study, and counteracting any discomfort they may have experienced by asking them to recount an event that brought them joy. Participants were very open to sharing about joyous events, and selected moments that clearly showed positive emotion.

Furthermore, the present study did not involve a protected or vulnerable population and did not require participants to provide highly sensitive information. Participants were asked to share a personal story, however, they were not asked to disclose triggering or otherwise sensitive information. Additionally, no deception was used. Further, the participation in the study was truly voluntary. Participants were not coerced into participating and were compensated a small amount that would not likely affect their decision to participate.

Additionally, participants' confidentiality was protected. All data remained confidential. Participants' information was not shared, and a participant identification code was assigned to each participant to protect their identity. A video-platform, Zoom, was used to conduct the interview, but various steps were taken to protect the security of the interview. Participants were told that while there may be security concerns regarding Zoom, the aforementioned precautions had been taken to ensure the Zoom interaction was as secure as possible. Specifically, a

password-protected meeting with audio-recording features was made. Participants were given a Zoom link that was password protected. They were told to find a quiet, private space where they would not be overheard before joining the call. Participants were kept in the waiting room and the room was locked after they entered the Zoom room. Only the audio conversations (no video) were recorded with participants' consent and were used only by the researcher. Upon entering the room, they were told that they could turn off their camera if they would like. The meeting was audio-recorded for the sole purpose of this study, and was promptly deleted off the researcher's computer after transcription was completed. Participants were told that they would always be able to know if recording was occurring because there would be an indicator in the form of a red circle at the left corner of the screen, if the session was being recorded. They were asked not to use the chat function except to report technical difficulties, because the chats were automatically saved. Lastly, recordings were kept on the researcher's password-protected computer, which was not shared with anyone for the duration of data collection and analysis.

Finally, while participants were asked to disclose personal stories relating to feelings of frustration (which may be minimally distressing), the results of the study could help contribute to literature on therapy-based interventions with bilingual clients. The results could show benefits to using L1 or L2 in emotion disclosure, which could help tailor therapy sessions with bilingual clients to their needs and language usage. Thus, the benefits of the study outweigh potential risks to participants.

Results

Data Preparation

Four language categories were identified and counted using different strategies.

Emotion words

Emotion words were counted using Language Inquiry and Word Count (LIWC), a text analysis program that counts different linguistic features (i.e. *verbs*, *total word count*, *affect*) (Pennebaker, 2015). For the present study, this computer program identified words that fell into *positive affect* and *negative affect* categories. Negative affect categories were comprised of *sadness* and *anger* word types. The *positive affect* and *negative affect* words were counted together and presented as a percentage of total words used by a participant.

Emotion-laden words

Emotion-laden words were selected from three domains available within LIWC: *social*, *personal*, and *informal* words. Not all subcategories were selected from each domain. In the *social* domain, the researcher had *friends* and *family* selected. In the *personal* domain, all subcategories (*work*, *leisure*, *home*, *money*, *religion* and *death*) were selected. In the *informal* domain, only *swear* words were selected. These selections were made based on examples of emotion-laden words used in past literature (Harris et al., 2003; Ekman, 2008; Pavlenko, 2008). LIWC determined the frequency of occurrence of words by category. These outputs were then used to manually compute a total percentage of emotion-laden words in Spanish and English interviews.

Expressive interjections

Expressive interjections were determined from Jovanović (2004) and Pérez-García & Sánchez, (2019) and organized into Spanish word lists and English word lists. These lists were input into a Python script and their occurrences were counted as percentages through the program.

Intensifiers that strengthen content words

Intensifiers that strengthen content words were collected from Foolen (2015) and

Pérez-García & Sánchez (2019), and compiled into lists in Spanish and English. Their occurrences were counted as percentages using a Python script.

Data Analysis

Amazon Transcribe was used to transcribe English and Spanish interviews and transcriptions were subsequently reviewed by the researcher to check for errors. Mixed model analysis of variances (ANOVA) were conducted on SPSS to test whether participants were speaking in their L1 or L2 and language of interview (Spanish/English) on six outcome variables: the four linguistic categories (emotion words, emotion-laden words, expressive interjections, and intensifiers that strengthen content words), as well as a subcategory of emotion words (negative emotion words), and a total emotion variable comprised of the four categories combined.

I. L1/L2 and linguistic categories

Total emotion, emotion words, and emotion-laden words. A mixed-model ANOVA was used to test the percentage of total emotional language in participants' L1 and L2. The model indicated that there was no significant difference between total amounts of emotion language expressed in a person's L1 and L2, $F(1, 9)=0.62, n.s., r^2=0.07$ (see Figure 1). However, a significant interaction effect revealed that the difference between total emotional language used in L1 and L2 was bigger when the participant's L1 was English, $F(1, 9)=22.47, p=0.001, r^2=0.71$. That is, native English speakers used more emotional language in their L1 ($M=13.49\%$, $S.D.=3.68\%$), whereas native Spanish speakers used more emotional language in their L2 than they did in their L1 ($M=12.06\%$, $S.D.=6.04\%$). Participants also showed the same pattern found in the interaction between interviews in their L1 and L2 for total emotion, emotion words, and

emotion-laden words, where native English speakers drove the difference (all $F(1,9)$'s > 67.63 , p 's < 0.001 , r^2 's > 0.88).

Figure 1 Total emotion used in L1 and L2 interviews as a function of native language

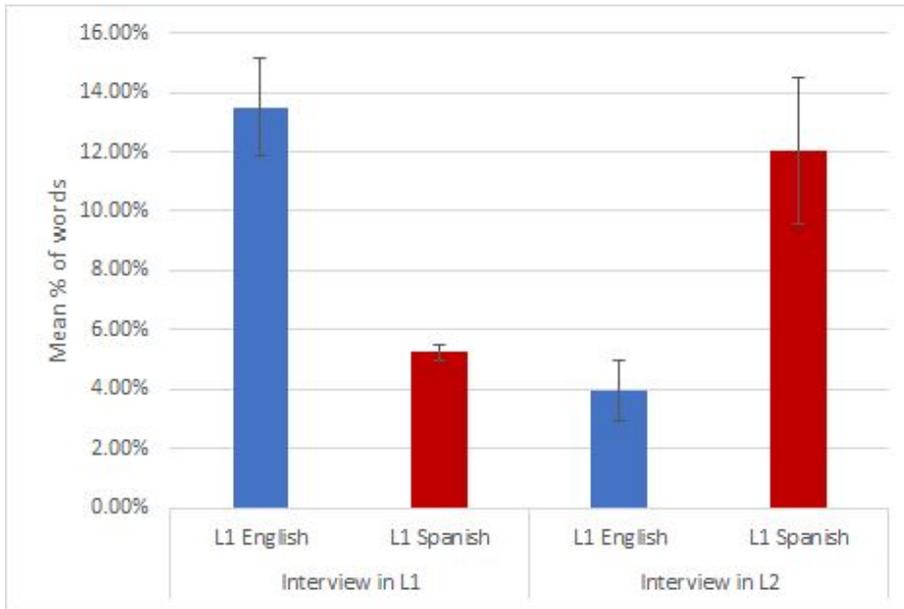
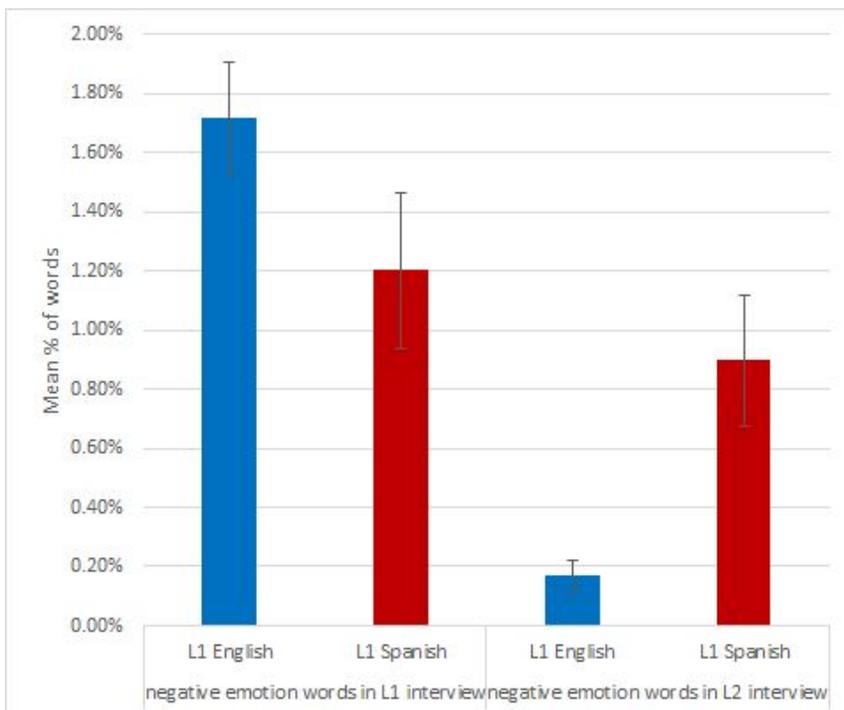
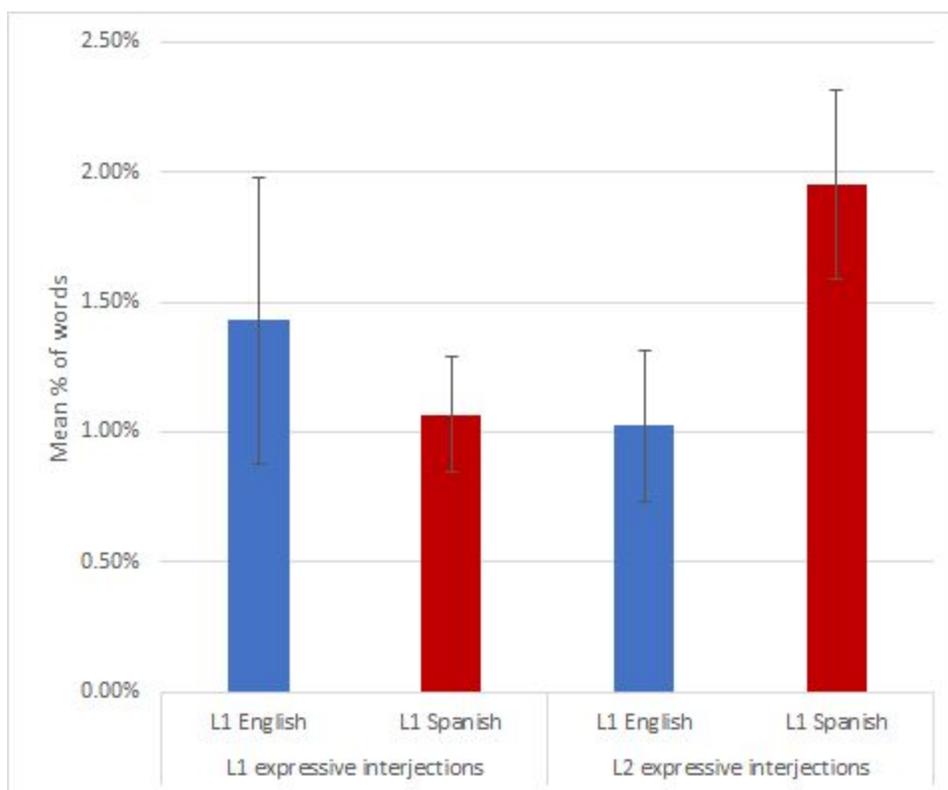


Figure 2 Negative emotion words in L1 and L2 as a function of native language



Negative emotion. A mixed-model ANOVA was used to ascertain whether participants used more negative emotion words in their L1 than in their L2. The data indicated that participants used significantly more negative emotion words in their L1 than in their L2, $F(1,9)=12.84, p=0.006, r^2=0.59$ (see Figure 2). However, the interaction effect $F(1,9)=5.80, p=0.039, r^2=0.39$ showed that the observed difference in negative emotion was only significant for native English speakers ($M=1.72\%, S.D.=0.42\%, t=10.1, p=0.001, r^2=0.96$) and not observed for native Spanish speakers ($M=1.20\%, S.D.=0.65\%, t=0.67, p=0.53, r^2=0.08$).

Figure 3 *Expressive interjections in L1 and L2 as a function of native language*



Expressive interjections and intensifiers that strengthen content words. A mixed-model ANOVA was used to test whether participants used a higher percentage of expressive interjections in their L1 than in their L2. No significant differences were found in the amount of expressive interjections used in the L1 as compared to their L2, $F(1,9)=0.47, n.s.$,

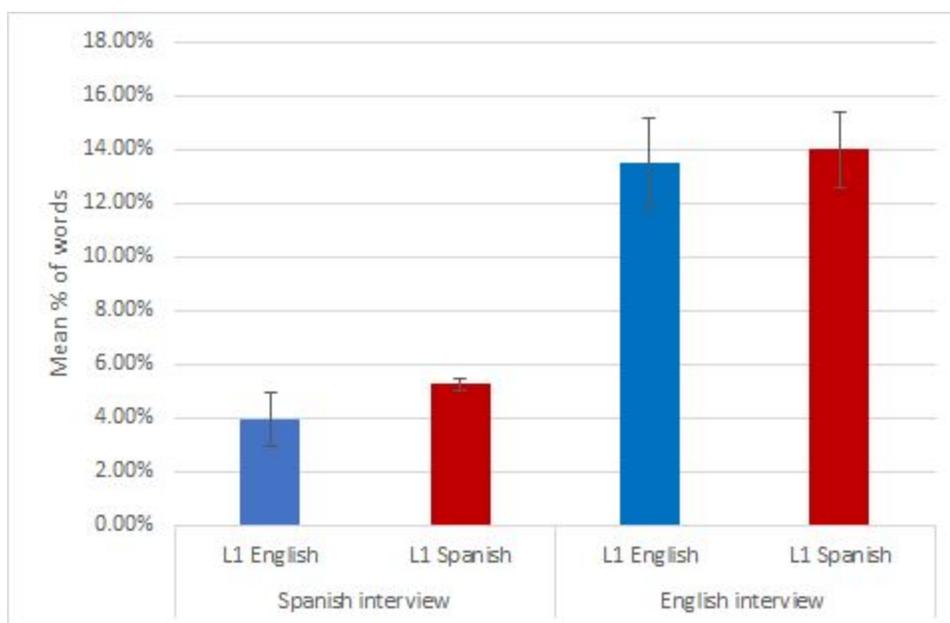
$r^2=0.05$ (see Figure 3). There was no significant interaction effect, $F(1, 9)=3.4$, $n.s.$, $r^2=0.28$.

Participants also showed the same lack of difference between L1 and L2 for intensifiers that strengthened content words, $F(1,9) = 3.92$, $n.s.$, $r^2 = 0.30$. No interaction was found, $F(1, 9)=0.11$, $n.s.$, $r^2=0.01$.

II. Spanish/English and linguistic categories

Another way of looking at the data is by language of the interview rather than by whether the interview was in the participants' L1 or L2. This was done to account for the possibility of language differences and their impact on emotion expression. The data presented above was reorganized by language of interview (Spanish or English) and tested with a mixed-model ANOVA, to see if any differences in linguistic categories were found based on language of production. Note that the data presented below is not new.

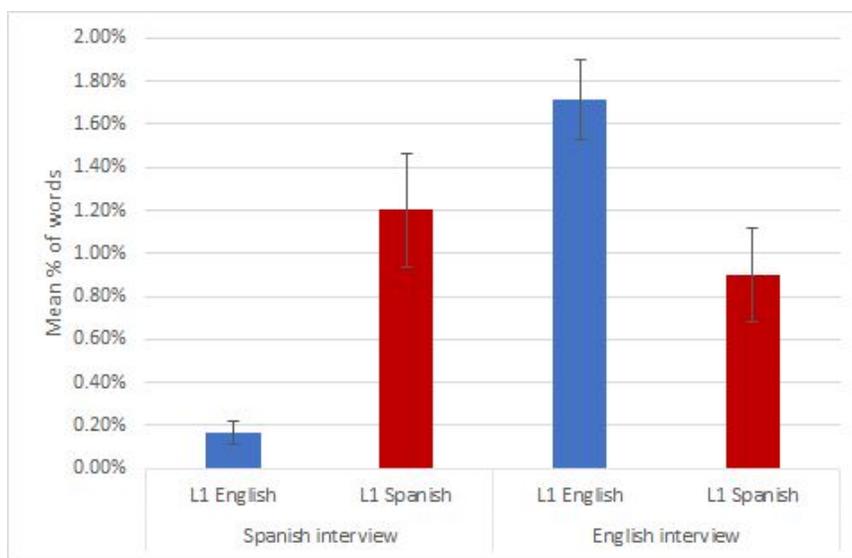
Figure 4 *Total emotion in Spanish and English interviews*



Total emotion, emotion words, and emotion-laden words. A mixed-model ANOVA was used to test whether participants would have a higher percentage of total emotional language

in English than in Spanish. The data indicated that participants used significantly more emotional language in English than they did in Spanish, $F(1, 9) = 53.89, p < 0.001, r^2 = 0.86$ (see Figure 4). However, this was not significantly affected by whether they were native English or Spanish speakers, $F(1, 9) = 0.1, n.s., r^2 = 0.01$. Participants also showed the same pattern between Spanish and English for emotion words and emotion-laden words (all $F(1, 9)$'s $> 53.89, p$'s $< 0.001, r^2$'s > 0.78).

Figure 5 *Negative emotion in Spanish and English interviews*

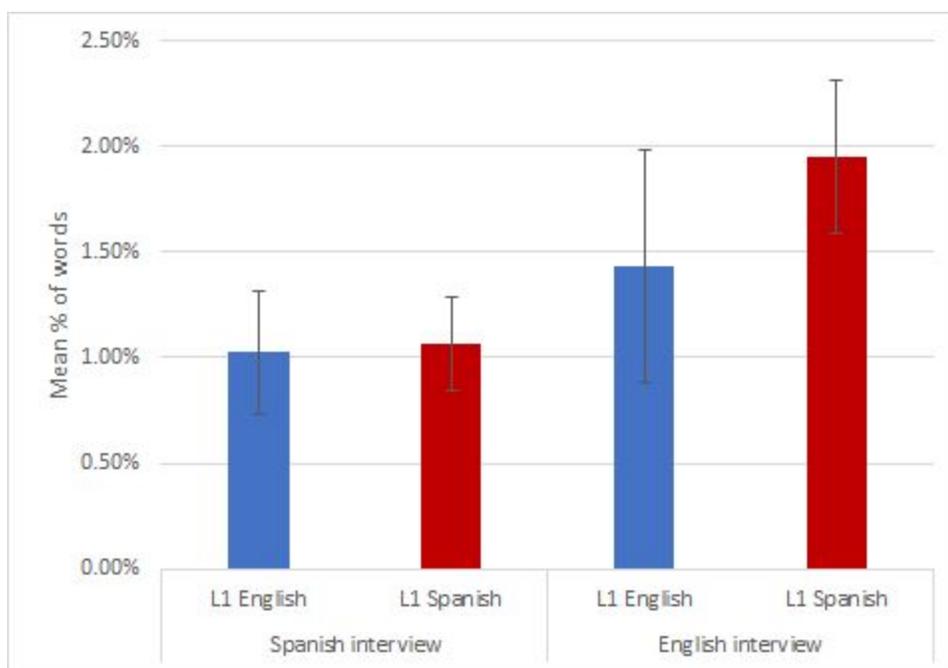


Negative emotion words. A mixed-model ANOVA was used to test whether participants employed a different frequency of negative emotion words in English and Spanish. The data indicated that participants used significantly more negative emotion words in English than in Spanish, $F(1, 9) = 5.80, p = 0.039, r^2 = 0.39$ (see Figure 5). But, there was an interaction effect where there was a different pattern for native English and native Spanish speakers, $F(1, 9) = 12.84, p = 0.006, r^2 = 0.59$. Specifically, native English speakers used significantly more negative emotion words in English than in Spanish ($M = 1.72, S.D. = 0.42\%, t = -10.1, p = 0.001$,

$r^2=0.96$), whereas native Spanish speakers did not ($M=0.90\%$, $S.D.=0.54\%$, $t=0.67$, $p=0.53$, $r^2=0.08$).

Expressive interjections and intensifiers that strengthen content words. A mixed-model ANOVA was used to test whether participants employed a different frequency of expressive interjections in English than in Spanish. The data indicated that participants did not use significantly more expressive interjections in one language over the other, $F(1, 9)=3.40$, $n.s.$, $r^2=0.28$ (see Figure 6). Additionally, no interaction effect was observed, $F(1, 9)=0.47$, $n.s.$, $r^2=0.05$. The same pattern was observed for intensifiers that strengthen content words, $F(1, 9)=0.11$, $n.s.$, $r^2=0.01$, with no interaction effect either, $F(1, 9)=3.91$, $n.s.$, $r^2=0.30$.

Figure 6 *Expressive interjections in Spanish and English interviews*



Discussion

The present study has examined whether negative emotion disclosure (operationalized by the recounting of a frustrating event) included more emotional language in a speaker's L1 than in their L2. Previous literature has shown the benefits of using both languages during emotion

disclosure (Byford, 2015; Pérez-Rojas et al., 2019; Softas-Nall et al., 2015). Further, past research indicates that differences in L1/L2 processing and production of emotion exist, tending to be stronger in the L1 (Harris et al., 2003; Kazanas & Altarriba, 2016). In some cases, clients of psychotherapy accessed emotion more easily in their first language than their second (Byford, 2015). On the other hand, some clients were more successful in discussing emotional topics in their L2 because they felt detached from the content (Byford, 2015; Greenson, 1950). The current study tested whether four main linguistic features (used to operationalize emotional language) occurred in higher percentages for participants' native language (L1) or second language (L2). However, for some of the features, the differences in percentage of emotional language were found in the language of production in the interview (English/Spanish) rather than the L1/L2. Additionally, for one feature in particular (negative emotion), the data indicated that differences in L1 and L2 depended on the native language of participants. In this case, native English speakers drove the significant results.

For total emotion, emotion words, and emotion-laden words, there was no overall significant difference in frequency of occurrence between participants' L1 and L2. Interaction effects for all three categories revealed that participants, regardless of their L1, used these features more in English than in Spanish. Although it was expected that the difference would be found in L1/L2, it was instead the case that native English and native Spanish speakers alike used more emotion (across these three categories) in English than in Spanish.

The results for these three categories may be explained by various phenomena. To begin, it is important to note that all participants were recruited through universities in the United States. As a result, the sample was highly proficient in English, and that had not been determined for Spanish proficiency. Consequently, it is possible that the native Spanish speakers were more

accustomed to speaking on a variety of topics, with a larger vocabulary and more fluidity in English (their L2), than the native English speakers were able to in Spanish (their L2). In Kazanas & Altarriba (2016)'s study, a similar pattern emerged, where participants' L2 became their dominant language, as a result of shifts in language environment. Because L1 Spanish participants were residing in the United States at the time - and were currently employed by or studying at American universities, their environment was highly immersive, which was not the case for the native English speakers with respect to Spanish. Consequently, an overall higher proficiency in the L2 for native Spanish speakers and a potential shift of dominant language from their L1 to L2 may have driven the results of more emotion in English interviews than in Spanish interviews.

It is also interesting to consider the context of the stories L1 Spanish speakers told. With six native Spanish speakers in the sample, each having told two stories, only 25% of the frustrating events for these speakers occurred for them in a Spanish-speaking context (e.g., family in their home country) or with another speaker of Spanish (e.g., mother). Because the remaining 75% of events L1 Spanish speakers discussed occurred in an English context, it is possible that the theory of language encoding may have driven these results (Byford, 2015; Harris et al., 2003; Marian & Neisser, 2000; Marian & Kaushanskaya, 2004). These psychologists and linguists have argued that the language of an experience may guide how an individual encodes the event, and thus, how they recall it. For this reason, it is possible that the native Spanish speakers, having experienced most of their frustrating events in an English-speaking context, encoded the event linguistically in English, and thus retrieved the emotional response more strongly in English than in Spanish.

That being said, the effects of L1 and L2 differences emerged only for native English speakers, leading us to wonder whether there are differences in the English and Spanish languages that drive this distinction. For instance, native English speakers in the United States are often likely to index politeness in their speech. Pulling from Brown and Levinson's (1987) work on theory of politeness, Goldsmith (2008) discusses the fact that English speakers tend to speak in circuitous ways, often avoiding the topic at hand or speaking directly on an issue. This could help explain the differences between native English and native Spanish speakers in their usage of emotion-laden words. These kinds of words do not explicitly identify the emotion felt by the speaker, but carry a meaning that may insinuate or evoke a certain emotion. Unlike emotion words, emotion-laden words can be used to communicate emotion indirectly. Consequently, it could be more natural for native English speakers to express emotion using emotion-laden words than native Spanish speakers, given the preference to appear polite. That being said, it is difficult to draw a contrast with the native Spanish speakers and Spanish because the participants came from a variety of cultural backgrounds, each with their own nuanced relationships to directness. Nonetheless, Spanish utilizes commands at a much higher rate than English, and thus allows for more directness in its language without indexing rudeness (Gallardo San Salvador et al., 1986), which may be interpreted as such if done in English. For this reason, native Spanish speakers may feel less compelled to use indirect language, such as the use of emotion-laden words, than native English speakers do, a cultural asymmetry that may explain this difference in the data.

Negative emotion words, on the other hand, followed a different trend from the three aforementioned linguistic features. Only native English speakers used significantly more negative emotion words in their L1 compared to their L2. Fascinatingly, native Spanish speakers

showed no observable difference in the frequency of negative emotion words between their L1 and L2. Unlike findings for other semantic categories, native Spanish speakers did not use more negative emotion in English either. Further, native Spanish speakers used significantly less negative emotion words in their L1 when compared to native English speakers. One potential explanation for this decrease is the possibility that native Spanish speakers convey a large portion of their emotion expression, in particular negative emotion, in their body language, facial expressions, and prosodic elements (e.g., tone, or pitch) when speaking their L1. It is possible that these tendencies are similarly utilized by native Spanish speakers when speaking in English. While some linguists (e.g., Keltner et al., 2019) have written about the importance of body language in communication, very little research exists on the expression of emotion through gesticulating, in particular among speakers of Romance languages. So, while well-attested anecdotally within the culture, the research in this field is lacking. Future research should, therefore, incorporate body language and other paralinguistic features as vehicles for emotion expression.

Contrastingly, expressive interjections and intensifiers that strengthen content words showed no statistically significant differences between groups. It may not be necessary for future studies to continue using these linguistic categories, as they did not yield any differences among speakers. However it is possible that these two categories, making up such a small percentage of the total word count, were too small to show a significant effect. In a larger sample of speech, or with higher rates of their occurrence, we may see results for these categories. This likely occurred as a result of variability in participant communication style. For instance, expressive interjections such as *wow!*, or *Oh my God!*, are frequently used following the pronoun and ‘like’, to quote or give a general idea of what someone said or thought (e.g., *I was like, wow!*). This

manner of communication, which facilitates the use of expressive interjections, may not have been utilized by all speakers in this study. This phenomenon may explain variation in the data that led to inconclusive results. On the other hand, intensifiers that strengthen content words were used at similar frequencies in Spanish and English, and L1/L2 interviews. It may be possible that this linguistic category was used at the same rate in both languages, regardless of language proficiency, because of its highly functional role in language communication.

The results of the present study could have wide-ranging implications for mental health practitioners in the United States. Knowing that experiences may be linguistically encoded in the language in which they occurred can better inform mental health practitioners. If mental health professionals speak the languages their client speaks, they may better support them when the client recounts an experience that occurred in another language. The professional may be able to guide clients in their emotion disclosure during a session for that particular event. The phenomenon of politeness in the U.S. and among native speakers of English is one that may be important to consider with native Spanish speakers as well. Directness in the Spanish language could lead mental health practitioners to make assumptions about their clients that may not be true. In this study, native Spanish speakers almost always showed no significant differences between their L1 and L2 in terms of emotion expression, whereas native English speakers did. Both groups of participants experienced many of the events they recounted in English, and likely expressed more emotion in English as a result.

While we cannot fully generalize to the larger population, it is helpful to know that native English speakers residing in the U.S. may express less emotion in their L2. On the other hand, native Spanish speakers who reside in the U.S. and frequently participate in an English-speaking environment may have naturally switched their dominant language from their L1 to their L2.

Both groups may benefit from therapy sessions conducted in both languages for different reasons. While it is unknown how these participants felt while speaking in each language, past research (Marcos & Urcuyo, 1979; Marcos, 1994; Byford, 2015) indicates that undergoing therapy in the L2 may allow for detachment from the material at hand in a way that makes discussing the content easier. When clients and participants in these past studies used their L2 to express emotion, they reported experiencing less psychological (e.g., trauma, anxiety) difficulties recounting than they may in their L1. The native English speakers in the present study may have experienced a similar pattern. When recounting negative events in their L2, they used less emotion overall and thus may have gained enough distance from the content that they did not feel as frustrated. Thus, a sample of native English speakers such as this one may benefit from discussing topics in their L1 while also using the L2 to distance when necessary. Additionally, the relationship L1 Spanish speakers have to negative emotion words differs from that of L1 English speakers in this study. Lastly, for counseling practices, mental health professionals may want to learn more about how clients' gesticulations are used to convey certain aspects of emotion expression.

Limitations

The design of this study has several limitations that may have impacted the results, and can be improved on in future studies. First and foremost, the definition of L1 and L2 varies across the literature (Kazanas & Altarriba, 2016; Keysar et al., 2012;). Participants may have identified their L1 as the language they learned first, which could be different from the language they are most dominant in. Thus, language dominance may serve as a better predictor for levels of emotion in language than the L1/L2 predictor selected for this study. Language dominance may more accurately depict proficiency or frequency of language usage, and thus access to

emotion expression, in a way that the L1 vs. L2 does not. Further, information on frequency of language use or the context in which each language is used could provide a more holistic picture of participants' relationship to their languages. The present study used the L1/L2 dichotomy as a predictor because research on bilingual therapy interventions used the same pairing of variables (Altarriba & Santiago-Rivera, 1994; Byford, 2015; Pavlenko, 2008; Pérez-Rojas et al., 2019; Softas-Nall, 2015).

Additionally, the LIWC program, used to count emotion and emotion-laden words, could only categorize emotion words into positive and negative affect words. Thus, emotion-laden words were selected based on other categories available in LIWC, and existing literature. This slightly limited the scope of emotion-laden words that were used for the study. However, LIWC significantly improved the speed at which these linguistic features could be counted.

Moreover, although participants were asked to recount an event that caused them joy, these experiences were not analyzed. This limited the scope of the results presented only to negative emotions. That being said, focusing only on the negative emotions allowed for a narrower and more in-depth analysis of the results.

Finally, participants were not asked to rate their frustration with the events they selected, so there was no way to control for differences in actual frustration felt toward each. Doing so may have allowed us to make assertions regarding the detachment effect as it related to native English speakers. Future research may include reflections from the participants on the degree of frustration engendered by the different experiences recounted.

Future directions

There are various ways in which this study can be improved and built upon. To begin, changes in the design, such as coding the joyful experiences, increasing the sample size, and

using language dominance as the predictor variable rather than L1/L2, could improve the generalizability and strength of this study. Further, future research might focus on differences inherent in Spanish and English that drive these observations, such as directness in former and politeness in latter. Additionally, it is possible that cultural factors play a role in how much emotion is utilized by the speaker.

To build on the present study, in-depth analyses of each participant could help to better understand their relationship to each language. Open-ended interview questions conducted after the recounting of frustrating and joyous events could be used to ask participants about how they felt while recounting frustrating events in their first language and second language. This could better attune the study to how participants may benefit from speaking in their respective languages, and thus, how L1/L2 may be utilized to better support a client when discussing difficult events. It is possible that participants would have offered information on their experience during the interview that could better inform the results in a way that was not anticipated by the researcher.

Another path that researchers may consider taking is measuring emotion through body language and hand gestures, as they may better inform a native Spanish speaker's relationship to emotion disclosure. A study that focuses on differences in facial expressions and gesturing among native Spanish and native English speakers, as well as the four linguistic categories studied, could build a more complete profile of expression of emotion among the sample. Moreover, a study that replicates the present study with participants in a mainly Spanish-dominant context could help determine whether the trends found in this study appear in this different environment.

In conclusion, the results in this study indicated greater use of emotion in the L1 than in the L2 among native English speakers, likely due to the linguistically immersive environments in which the native Spanish speakers currently reside. For both groups of participants, the emotional experiences they recounted were more likely to have occurred and thus been processed in English. Furthermore, the native Spanish speakers employed their L2 more frequently in everyday life, and this increased utilization may correlate to the ability to express emotion more strongly in that language. Bilingual therapy-based interventions could incorporate knowledge of how the client uses their languages in order to facilitate their recounting and processing of negative experiences.

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Appendix

Interview Questions (English):

1. Please take a moment to think of a time where you felt frustrated. This could be an event or experience relating to school, work, social or familial contexts. Please describe the event itself, how it was caused, and how it may or may not have resolved. When you have an event in mind, feel free to begin talking about it whenever you are ready. You will be talking for approximately three to five minutes, so I may ask you follow-up questions to maintain speech for that amount of time.
 - a. Potential follow-up questions:
 - i. What happened next?
 - ii. Where did this occur?
 - iii. Who was involved?
 - iv. Were you feeling anything else in these moments?
2. How did this event resolve itself?
 - a. Potential follow-up questions:
 - i. How did you resolve it?
 - ii. Did anyone help you resolve this?
 - iii. If it did not resolve, what made you feel less frustrated?

Preguntas de entrevista (español):

1. Por favor piensa en una vez donde te sentiste frustrada/o. Esto puede ser un evento o experiencia dentro del contexto de los estudios, el trabajo, la vida social, o la familia. Por favor describe el evento en sí mismo, la causa del evento, y como se resolvió o como no se resolvió. Cuando hayas pensado en un evento, puedes empezar a contar lo que pasó cuando te sientes lista/o. Estarás hablando durante aproximadamente cinco minutos, entonces es posible que te de preguntas de seguimiento para mantener discurso durante este tiempo.
 - a. Preguntas de seguimiento:
 - i. ¿Qué pasó después?
 - ii. ¿Dónde ocurrió este evento?
 - iii. ¿Quién estaba involucrado?
 - iv. ¿Tenías otras emociones durante este momento?
2. ¿Cómo se resolvió este momento?
 - a. Preguntas de seguimiento:
 - i. ¿Cómo lo resolviste tú?
 - ii. ¿Alguien te ayudó a resolver el momento?
 - iii. Si no se resolvió, ¿qué te hizo sentir menos frustrada/o?

Joyous event questions (will be conducted in the language the interview was started with):

1. Thank you for your response. Before we finish, please recount a time that you experienced joy. You may answer this in the language of your choice (Spanish or English).

Evento de felicidad:

1. Gracias por tu respuesta. Antes de terminar, ¿me puedes contar sobre un evento que te hizo feliz? Puedes elegir la lengua que quieras (entre español e inglés) para contestar.