

*Positive and negative emotions underlie
motivation for L2 learning¹*

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Abstract

The role of basic emotions in SLA has been underestimated in both research and pedagogy. The present article examines 10 positive emotions (*joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love*) and 9 negative emotions (*anger, contempt, disgust, embarrassment, guilt, hate, sadness, feeling scared, and being stressed*). The emotions are correlated with core variables chosen from three well-known models of L2 motivation: Gardner's integrative motive, Clément's social-contextual model, and Dörnyei's L2 self system. Respondents came from Italian secondary schools, and most participants were from monolingual Italian speaking homes. They described their motivation and emotion with respect to learning German in a region of Italy (South Tyrol) that features high levels of contact between Italians and Germans. Results show that positive emotions are consistently and strongly correlated with motivation-related variables. Correlations involving negative emotions are weaker and less consistently implicated in motivation. The positivity ratio, that is, the relative prevalence of positive over negative emotion, showed strong correlations with all of the motivation constructs. Regression

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analysis supports the conclusion that a variety of emotions, not just one or two key ones, are implicated in L2 motivation processes in this high-contact context.

Keywords: integrative motive; L2 self system; social-contextual model; broaden and build theory; positivity ratio

1. Introduction

Basic emotions can play a significant role in second language acquisition (SLA) and communication processes, an impact that has been underestimated in both the research and pedagogical literature (Dewaele, 2012; MacIntyre, 2002). In SLA, the literature on individual differences and learner factors has featured a considerable emphasis on cognitive and ability factors such as working memory, strategies, intelligence, aptitude factors, and others, but in SLA they have been discussed as relatively cold cognition, as if emotion played no part in these processes (Pintrich, Marx, & Boyle, 1993). In contrast, a hot cognition approach examines learning “. . . in which multiple levels of cognition are sparked by motivation and emotions in lively sociocultural contexts” (Oxford, 2016, p. 25). The relative lack of emphasis on emotion and the roles it plays in both learning and communication experiences has been something of a historical accident, a hold-over from a time when a serious treatment of emotions was considered irrelevant by behaviourists, and later when emotions were ignored by cognitively-focused scholars (Fredrickson, 2013a). However, there is rapidly emerging interest in emotion in SLA, partially inspired by applying and expanding on the developments being made in positive psychology (Gabryś-Barker & Gałajda, 2016; MacIntyre, Gregersen, & Mercer, 2016).

In SLA, the most notable area in which emotion has been implicated, albeit indirectly, has been in the literature on motivation. Three of the major L2 motivation research traditions, Gardner’s (1985, 2010) integrative motive, Clement’s (1986) social-contextual model, and to a lesser extent Dörnyei’s (2005) L2 self-system, feature emotions that influence motivational processes. However, even within the SLA motivation literature, the emphasis has not been on basic emotions. Recent research has been addressing the imbalance and working to fit emotions into the theoretical framework of SLA. The present article will examine the correlations of basic positive and negative emotions, as identified by differential emotions theory (Izard, 2007), with established learner characteristics emphasizing motivation-related variables drawn primarily from the well-established models of Gardner, Clément and Dörnyei.

1.1. Emotion is a primary motive

There are good reasons to be concerned with emotion as a core process that impacts almost everything we do. In the book *Descartes' Error*, neuroscientist Antonio Damasio (1994) built the case that human beings are not thinking machines that feel; rather, we are feeling machines that think. The primacy of emotion emerges in the earliest moments of life as an infant reacts emotionally to every significant stimulus, a process of reacting to events that continues throughout the entire lifespan. All later experiences, including language development, are built on an emotional foundation and are fully integrated with it. At their core, emotional reactions are adaptive and drive efforts at coping with life's changing situations. Active emotions, especially negative ones such as fear or anger, simply take over conscious experience—they cannot easily be ignored (Reeve, 2015). Languages are difficult to learn and the learning process can arouse intense emotions. As teachers, we might ask students to “stop and think” when emotions run high, but have you ever asked a student to “stop and feel something”?

1.2. Defining emotion

In psychology, when considered at all, emotion has proven remarkably difficult to define. The definition we will use in the present article was developed by Reeve (2015): Emotions are “. . . short-lived, feeling-purposeful-expressive-bodily responses that help us adapt to the opportunities and challenges we face during important life events” (p. 340). Under this definition, emotions have both physical and psychological dimensions, they are reactions to the outside world, they express what is going on inside the body to the outside world, and they exist for a reason—each emotion has a purpose. Reeve's definition is representative of the field because it allows for emotions to be more than the sum of their parts, reflecting the complexity of emotional experience. We hasten to note that the adaptations provoked by a given emotional experience may be relatively beneficial on one timescale but harmful when considered over a different period of time.²

Although we have chosen Reeve's (2015) definition to guide our work, the difficulty with defining emotions must be emphasized. A leading scholar in the field, Carroll Izard (2010) surveyed leading emotion researchers but failed to converge on a single definition that captures the subject they study. He did, however, generate the following description of emotion.

² For example, opting for short term comfort can lead to long term problems, as when a panicky student leaves an important examination before finishing the test. It is the interaction of emotion with other processes that determines the quality of the adaptation for any particular purpose, considered over a particular timescale.

Emotion consists of neural circuits (that are at least partially dedicated), response systems, and a feeling state/process that motivates and organizes cognition and action. Emotion also provides information to the person experiencing it, and may include antecedent cognitive appraisals and ongoing cognition including an interpretation of its feeling state, expressions or social-communicative signals, and may motivate approach or avoidant behavior, exercise control/regulation of responses, and be social or relational in nature. (p. 367)

Izard's (2010) study revealed that theorists working with conceptualizing emotion show moderate to high agreement on the structures and functions of emotion, and they all agree that "there are rapid, automatic, and unconscious connections among emotion, cognition, and action" (p. 366).

Historically, biologically-oriented theories have proposed a small number (2-8) of basic, universal emotions. Cognitively-oriented theories have taken a different track, emphasizing the wide diversity of felt emotion, distinctions between similar emotions (e.g., love for your spouse versus love for your parents) and the many words for emotions in a language such as English (Reeve, 2015). At the most basic level, Solomon (1980) recognizes only two types of emotions, positive (pleasant) and negative (aversive), each of which triggers the other. The opponent emotional processes can be considered both complex and inherently conflicted or ambivalent (see MacIntyre, 2007). Izard (2007) offered a broader theoretical approach, differential emotions theory (DET), which features a combination of basic emotions and higher-order thought processes. According to Izard (2007), there are only six basic emotions: interest, joy/happiness, sadness, anger, disgust, and fear, which are generated by patterns of physical responding which are more-or-less automatic and hard wired, and may or may not be registered consciously. The exact number of basic emotions has been widely debated and different theorists use different types of evidence (e.g., patterns of neural firing, facial expressions, neuro-chemical reactions inside the body) to support their viewpoints.

Although the number of basic emotions has been a long-standing concern for emotion theorists (Reeve, 2015), it is the roles that emotions play in situations where languages are learned and used that is likely to be of more concern for the SLA field. Izard (2007) noted that as people mature, the basic emotions are more and more rarely felt because the complexity of the appraisal of the social situation, experiential memory, and self-related cognition are continuously modifying basic emotions. Considering the ways in which adults experience day-to-day emotions, Izard goes on to describe ways in which emotion schemas combine low-level physiological (basic emotional) responding with ongoing appraisals of the situation and other cognition in a dynamic process, creating the emotional milieu familiar to most adults.

In cognitive psychology, a schema is a mental structure to organize information and interpret events. With respect to emotions, a schema combines the various internal physiological signals (e.g., a fast heart beat) with an interpretation of the social context (e.g., giving my first speech in the L2), urge to act (e.g., I want to quit this speech) and other specific cognitions (e.g., the audience looks confused) to produce an emotional interpretation (e.g., an episode of language anxiety arousal). Emotion schemas allow for the specificity and differentiation of specific emotional reactions, such as a difference in anxiety between communicating in the L1 versus L2 (see Dewaele, 2012; MacIntyre & Gardner, 1989), as well as allowing combinations of emotions into larger complexes. The specific ways in which schemas are formed over time helps to explain individual differences in emotional reactions, providing a powerful source of motivation. "After the period of early development, emotion schemas (not basic emotion *per se*) constitute by far the most prominent source of human motivation" (Izard, 2007, p. 265). Even though basic emotions have been found to be ubiquitous across cultures (Ekman, 1972), the repertoire of emotion schemas can vary from person to person based on experiences and the ways in which a person learns to differentiate one emotion from another. In this way, emotions provide a basis for both common/shared experiences as well as unique/individual configurations of emotions/motivations.

Perhaps the single most powerful way to separate emotion schemas is to categorize them as positive or negative felt emotions (Solomon, 1980). As a note of caution, the terms *positive* and *negative* reflect the vernacular usage of the terms, that is, whether the emotion is pleasant or unpleasant, welcome or unwelcome. However, it is worth noting that all emotions are adaptive and have the potential to contribute to growth and well-being. Even emotions that are unpleasant or unwelcome can lead to positive outcomes, as when anger generates a concerted effort to overcome obstacles, or an emotion like disgust leads to rejection of foods that are unhealthy or poisonous (Lazarus, 2003). Yet a person will experience positive and negative emotions quite differently because they generate qualitatively different types of feelings, and because they serve different functions.

1.3. Positive and negative emotions

Although emotion has been studied for a long time, the emergence of positive psychology as a recognized field has facilitated interest in positive emotion. Seligman and Csikszentmihalyi (2000) initially proposed three pillars on which positive psychology is founded: positive character traits, enabling institutions, and positive emotion. One of the most significant contributions of positive psychology to date has been to highlight the differences between positive and negative

emotions. Fredrickson's (2001, 2008, 2013a) broaden-and-build theory proposes that negative emotions tend to be focussed and associated with specific thought-action trajectories (anger → destroy obstacle) and positive emotions tend to lead to expansive thinking that broadens a person's awareness. For example, people in a positive emotional state will notice more items in their visual field, engage more social connections, and will tend to have urges to act in a greater variety of ways, relative to those with negative emotions. The increased attention and elaborated information processing associated with positive emotion has the additional benefit of building personal and social resources for the future (Gregersen, MacIntyre, & Meza, 2016). There is some empirical evidence that, over time, positive emotional experiences produce greater resiliency, resourcefulness, social connections, and optimal functioning through broad-minded coping efforts (Cohn, Fredrickson, Brown, Mikels, & Conway, 2009; Fredrickson, 2013a). This leads to an interactive, upward spiral connecting positive emotionality to positive outcomes, a process that has the potential to contribute directly to second language development and communication. For a recent review of theory development and evidence supporting the broaden-and-build theory, see Fredrickson (2013a).

Unfortunately, the role of positive emotions in SLA has not received much research attention (Dewaele & MacIntyre, 2014; MacIntyre & Gregersen, 2012). However, there has been some discussion of positive and/or negative emotion in larger, multi-dimensional models of learner factors, in particular the motivation models by Gardner (1985, 2010), Clément (1980, 1986), and Dörnyei (2005). Space does not permit a full review of each author's approach, and readers are encouraged to consult the original works.

- Gardner's (1985, 2010) integrative motive: Although attitudes are described as the drivers of motivation in Gardner's model, there is a place for both positive emotions (including desire to learn the target language and interest in foreign languages) and negative emotions (target language classroom anxiety and language use anxiety). Integrative motivation is defined by a desire to meet and communicate with members of target language community, and there is a variety of emotion schemas that come to be associated with intergroup interaction. Gardner's model also features the concept of instrumental orientation toward learning for pragmatic reasons, such as getting a job using the target language.
- Clément's (1980, 1986) socio-contextual model: This model has key features in common with the integrative motive but is focussed on describing acculturation, using a core emotion-related process labelled "fear of assimilation." In the case of a minority group learning the language of a majority group, the desire to move toward the new language (integrativeness)

is in a state of tension with the fear of losing one's heritage language and culture. Clément's model also features a secondary motivational process, self-confidence, which facilitates language acquisition via the interactive effects of low anxiety and high perceptions of communicative competence. The combination of low anxiety and perceived competence features prominently in the model of willingness to communicate that was developed later by MacIntyre, Clément, Dörnyei and Noels (1998).

- Dörnyei's (2005) L2 self-system: Dörnyei's model is centred around three interrelated components: an ideal self that describes what a language learner wants to become in the future, an ought-to self that captures obligations placed on the learner by other people, and a role for prior language experience. Although Dörnyei emphasizes discrepancies in cognition about the present and the future, there is a role to be played by emotional reactions that emerge from perceived discrepancies and the prior experience of positive and negative emotions associated with language learning contexts.

The above language motivation models implicate emotion schemas even if the theoretical attention is directed most explicitly toward attitudes, evaluations, patterns of intergroup contact, willingness to communicate, and self-related imagery. There is a gap in theorizing of motivation in SLA when it comes to the role of emotion and its connection to key processes, including motivation.

Among studies in SLA that focus attention directly on emotion, language anxiety has most frequently been studied (see Dewaele, 2012; Horwitz, 2010; MacIntyre, in press). Language anxiety has long been conceptualized as a drain on motivation for language learning and a source of disruption in the learning process (Gardner, 1985; Gregersen & MacIntyre, 2014; Horwitz, Horwitz, & Cope, 1986). Consistent with the idea of an emotion schema described above, research has defined language anxiety as a situation-specific anxiety that develops out of negative experiences with language that lead to the anticipation of further difficulties (MacIntyre & Gardner, 1989). The consequences of anxiety arousal include difficulties in processing linguistic material (MacIntyre & Gardner, 1994), lower academic success (Aida, 1994; Horwitz et al., 1986), and disruption of social-communicative processes that lead to language development (Dewaele, 2002, 2007, 2010), including lower willingness to communicate in the target language (MacIntyre, Baker, Clément, & Donovan, 2003).

Whereas language anxiety and its associated cognitive and emotional processes exert a generally negative impact on learning and communicating, there is theoretical work that has begun to describe the role of specific positive emotions in language acquisition and communication (MacIntyre & Mercer, 2014). Arnold and Brown (1999) argue for bringing research into better balance, "much

more attention is given to the question of negative emotions . . . [one] should not lose sight of the importance of developing the positive" (p. 2). In doing so, Dewaele and MacIntyre (2014, 2016) examined language anxiety and foreign language enjoyment as the "two faces of Janus" or "the left and right feet of the learner," asking whether anxiety and enjoyment are simply opposite ends of one continuum or two different types of experience. Dewaele and MacIntyre (2014) report data from a survey of over 1700 learners that showed anxiety and enjoyment correlated modestly ($r = -.36$) but that the distribution of scores was very different between the two emotions. Further, anxiety and enjoyment showed different patterns of relationships to a number of demographic factors. The authors conclude that anxiety and enjoyment are best seen as two interrelated dimensions, each of which with its own trajectory of development over time. "Conceptualized as two separate dimensions, the question becomes one of describing a constructive balance between enjoyment and anxiety, rather than implicitly taking them as opposite ends of the same dimension" (p. 262). Indeed, given that learners inevitably experience both communicative difficulties and successes over time, the ratio of positive to negative emotions might be especially important in FL contexts. Fredrickson has labelled this *the positivity ratio*.³

One of the advantages of calculating a ratio of positive to negative emotions is that it allows researchers to control for individual differences in base rates of affect intensity; some people report experiencing more intense emotions more often than others, who are relatively emotionally quiet and stable (Larsen & Diener, 1987). By examining how positive and negative emotions correlate with motivation using both raw scores and relative positivity, we gain a more complete perspective on the connections between emotion and motivation. One of the drawbacks of calculating a positivity ratio, however, is losing the nuances of the contributions of specific positive or negative emotions that predict specific motivational variables. For this reason, we will include both raw correlations between emotions and motivation-related variables as well as a set of stepwise multiple regression equations predicting the motivational variables based on the scores for the specific emotions.

³ *Positivity Ratio* is also the title of Fredrickson's book for a general audience in which she argues for an artificially precise 2.9:1 ratio of positive to negative emotions for optimal functioning, based on work published by Fredrickson and Losada (2005). In a recent publication (Fredrickson, 2014) she has abandoned the specificity of this numerical ratio but retained the more general argument that greater positivity ratios promote healthy functioning and that the idea is worth studying in future research.

1.4. The present study

The present study was designed to investigate the relationships between a set of positive and negative emotions and motivational factors in a second language context. The emotions are defined and measured by the modified Differential Emotions Scale (Frederickson, 2013a). The scale measures 10 representative positive emotions (*joy, gratitude, serenity, interest, hope, pride, amusement, inspiration, awe, and love*) and 10 representative negative emotions (*anger, shame, contempt, disgust, embarrassment, guilt, hate, sadness, feeling scared, and being stressed*). To help respondents focus on the specific emotion schema being assessed, each emotion is defined not by a single word, but rather a cluster of three closely related words (e.g., *joy* is defined by the triad *joyful, glad, and happy*). Given the close connection between motivation and emotion, it is important to know how these emotions link to key motivational constructs that have been established in the SLA literature. Specifically we sample from work related to the socio-educational model (Gardner, 2010), the L2 self-system (Dörnyei, 2005), and the socio-contextual model (Clément, 1980, 1986) in an effort to connect basic emotions to well-established concepts of language learner motivation factors. For the most part, the gap in theorizing emotion in SLA means that these specific emotions have not been studied directly, so specific predictions involving correlations of each emotion with motivation will not be offered. Rather, we are taking a first step in empirically testing correlations among emotions and well-established SLA motivation-related variables.

The specific motivation concepts included in the present study include integrative orientation (Gardner, 2010) that reflects reasons for language learning to develop relationships with target language speakers. Based on Taguchi, Magid, and Papi (2009), we will also measure both promotional and preventative instrumentality reflecting reasons for learning a language to gain something of value (e.g., a good job) or avoid losing something valuable. From Dörnyei's L2 (2005) self system, we sampled (a) the L2 ideal self (Dörnyei & Chan, 2013), which describes a vision for future language learning success, (b) the L2 ought-to self, which describes obligations to learn, such as to satisfy parental demands, and (c) L2 learning efforts reflecting the time and energy spent on learning. Inspired by Clément (1986), we sampled concepts related to L2 self-confidence, which reflects the perception of skills in the L2 and low levels of language anxiety. Given that prior research has used measures of anxiety and perceived competence, both separately and combined together, we will employ measures of both concepts (language anxiety and perceived competence), plus the aggregated variable (self-confidence). Clément's (1986) model places a great deal of emphasis on contact between the language groups that we measured with the

perceived quantity and quality of contact with target language speakers. Finally, we used a measure developed by Tropp, Erkut, Coll, Alarcon, and Garcia (1999) to examine psychological acculturation, or identification with the native and target language groups.

Research into L2 motivation is becoming more concerned with the learning context. Ushioda (2009) emphasizes the connections between theorizing about motivation and the specific contexts in which the research is conducted. The local context for language use is also likely to be relevant to the patterns of emotion experienced by learners over time. This study was conducted in a location where language groups interact with each other on a regular basis: South-Tyrol, Italy. Given the role that intergroup contact and communication play in the various motivational processes being sampled, we expect that emotions will be correlated with motivation in a context featuring frequent contact between language groups.

1.4.1. The region

Although German speakers constitute merely 0.5% of the population of Italy, in the province of South-Tyrol they make up two thirds of the local population with about 300,000 speakers. South-Tyrol is an autonomous province, where both Italian and German are official languages (e.g., Bonell & Winkler, 2006; Oberrauch, 2006). According to the autonomy statute, filling any position in public administration requires skills in both official languages. Consequently, applicants must pass the so-called bilingualism exam, which has four levels, depending on the qualifications of the applicant, and the type of the position applied for. The two language groups have their own school systems. While in Italian language schools the language of instruction is Italian, German is taught as a mandatory second language from the second grade of the elementary school; in a similar way, in German language schools, the language of instruction is German, but Italian is taught as a mandatory second language (Meraner, 2004). However, empirical studies demonstrate that Italian speakers usually have considerably poorer skills in German than German speakers have in Italian (e.g., Paladino, Poddesu, Rauzi, Vaes, Cadinu, & Forer, 2009). In addition, relations between the language groups can be characterized by a certain level of social distance due to the historical conflicts (e.g., Eichinger, 2002; Schweigkofler, 2000), most importantly, the Italianization policy led by Mussolini after South-Tyrol became a part of Italy in 1919, which banned the use of German at all levels of society (e.g., schools) and aimed to make the region monolingually Italian (see e.g., Steinger, 2003).

In this region, issues of integration between language groups are features of everyday life. The ethnolinguistic vitality of both languages is fairly high (e.g., Vincze & Harwood, 2014), that is, they possess a relatively high status, strong demographic capital and broad institutional support (Giles, Bourhis, & Taylor,

1977). Also, there is the opportunity for frequent contact between the language groups in everyday life. Although Dörnyei's L2 self system has wide applicability across regions of the world, using South-Tyrol as a research setting makes the social-psychological models of Gardner and Clément especially relevant as we examine how emotions relate with various established motivational constructs.

1.4.2. Research questions

In developing expectations for patterns of correlation, we can note that both motivation and emotion can be broadly categorized as positive/facilitative/approach-oriented versus being negative/inhibitive/avoidance-oriented (MacIntyre & Serroul, 2015). The nature of most of the motivation constructs sampled here is facilitative and approach-oriented, including positive attitudes toward integrativeness and the instrumental value of language learning, pleasant contact and positive acculturation experiences, exerting more effort, feeling competent and confident. We expect that some or all of the approach-oriented motivation variables will correlate positively with positive emotions and negatively with negative emotions. However, the size of the correlations cannot be predicted based on prior research. The one clearly avoidance-oriented motivational construct is language anxiety, and we expect that it will show the reverse pattern, that is correlate negatively with positive emotions and positively with negative emotions. Perhaps the most uncertain of the constructs is the ought-to self, which features a sense of obligation that might be welcome or unwelcome for learners, and so the pattern of correlations between the ought-to self and various emotions will be tested without making any specific predictions. The research questions can be summarized as follows:

1. How are the different emotions associated with motivational variables? What are the correlations between emotions and L2 motivation variables?
2. What emotions predict best the motivational variables? Using multiple regression, which positive and negative emotions best predict the L2 motivational variables?

2. Method

2.1. Participants

The participants ($N = 182$) were sampled from Italian language secondary schools, and most participants were from monolingual Italian speaking homes ($N = 161$). Approximately 66% of the respondents were females, 34% males, and all participants were between the ages of 15 and 18.

2.2. Instruments

The following instruments were used in the study to measure the following constructs:

1. *Integrative orientation*. Integrative orientation was measured with three items (e.g., "Learning German is important because it will allow me to be at more ease with German speakers") using a 5-point Likert-scale for responses, as described in Gardner (2010) and Clément and Baker (2001). The reliability of the scale was good ($\alpha = .82$).
2. *Instrumental orientation*. Four items measured promotional instrumentality and four measured preventive instrumentality borrowed from Taguchi, Magid, and Papi (2009). Items used a 5-point Likert-scale response format. However, because of the low overall reliability of both the promotional instrumentality ($\alpha = .63$) and the preventive instrumentality scales ($\alpha = .58$), we collapsed the eight instrumentality items into one compound scale, which had a good reliability ($\alpha = .75$).
3. *L2 learning emotions*. The participants were asked to indicate how often they have experienced each of 19 specific positive and negative emotions during German learning/studies. The measure was based on Fredrickson's Differential Emotions Scale (Fredrickson, 2013a). Each emotion item was described with three adjectives to help respondents focus on the intended meaning of the item. For example, the trio of "amused, fun-loving, or silly" made one item that we refer to as "amused"; the combination of "angry, irritated, or annoyed" was another item that we refer to as "angry." Each emotion trio generated a single rating on a 5-point Likert scale. Treated as composite measures, reliability of both positive emotions ($\alpha = .88$) and negative emotions ($\alpha = .85$) was good. However, attention in the present study will be directed toward 19 specific emotions. There are 19 emotions, not 20 as in Fredrickson (2013a), because two of the negative emotions converged on the same terms when translated into Italian, resulting in 9 negative and 10 positive emotions in the present study.
4. *L2 ideal self*. Five items were used to assess L2 ideal self as described, for example, in Dörnyei and Chan (2013). We used a 5-point Likert response scale for items such as "I can imagine myself being a very competent speaker of German" and "When I think of the future, I can imagine myself using German in a variety of ways." The scale had a good reliability ($\alpha = .73$).
5. *L2 ought-to self*. Five 5-point items assessed L2 ought-to self based on Taguchi et al. (2009). The scale included items such as "I have to learn German because if I don't learn it, my parents will be disappointed with

- me," and "People around me believe that I must learn German to be an educated person." The scale had an acceptable reliability ($\alpha = .68$).
6. *L2 learning efforts*. L2 learning efforts were measured with five 5-point items adapted from Taguchi et al. (2009). The scale included sample items such as "I am working hard at learning German" and "I would like to spend lots of time learning German." The scale had a good reliability ($\alpha = .78$).
 7. *L2 anxiety*. L2 use anxiety was measured with eight 5-point items as described by Clément (1986; see also Clément & Baker 2001). The scale included items such as "I feel uneasy whenever I speak German" and "When I make a telephone call, I get mixed up if I have to speak German". The reliability of the scale was good ($\alpha = .76$).
 8. *L2 competence*. L2 competence was measured with four 5-point items. Participants were asked how well they evaluate their skills in reading, speaking, writing and understanding German (1 = *very poor*, 5 = *very good*). The reliability of the scale was good ($\alpha = .75$).
 9. *L2 confidence*. L2 confidence combined the competence and the L2 anxiety scales. L2 anxiety items were reversed so that higher values indicate greater confidence with the L2. The reliability of the scale was good ($\alpha = .90$).
 10. *Acculturation*. Acculturation was measured with ten 5-point items by means of the Psychological Acculturation Scale (Tropp et al., 1999). Respondents were asked which language group they feel they share most of their values with; they feel the most comfortable with; they know the most about the history, traditions, and customs of; and so forth. The scale had a good reliability ($\alpha = .90$).
 11. *Quality of contact*. The quality of contact was measured with six 5-point items (e.g., "My contact with German speakers is usually enriching," and "My interaction with German speakers is often distant and hostile") adapted from Clément and Baker (2001). The scale had a good reliability ($\alpha = .82$).
 12. *Quantity of contact*. The quantity of contact was measured with three 5-point items based on Islam and Hewstone (1993). Respondents were asked how much contact they had with German speakers within their family and friends, how often they were engaged in informal conversations with German speakers, and how often they visited the home of German speakers. The reliability of the scale was good ($\alpha = .73$). Higher values indicate more frequent contact and better quality of contact.

2.3. Procedure

A letter of invitation was sent to two Italian language secondary schools in Bolzano/Bozen. After they agreed to participate in the study, self-report questionnaire

data was collected by a research assistant in December 2014 and January 2015. Participants received instructions about the research orally and in writing. Participants were also reminded that participation in the research is voluntary and anonymous.

3. Results

3.1. Correlations among the measures

The first research question examines the pattern of correlation between positive emotions, negative emotions, and L2 motivation variables. Table 1 shows the correlations between the positive emotions and the motivation variables. Using a conventional alpha level of $p < .05$, all but four correlations are significant. The consistency of correlations among positive emotions and motivation-related constructs is noteworthy. As expected, the correlations between positive emotions and motivation are positive, with the exception of language anxiety which consistently generates negative correlations. Both the composite measure of positive emotion and the positivity ratio are significantly correlated with all of the motivation-related variables and the correlations tend to be strong, with a median among the 11 correlations of $r = .431$, $p < .001$ for positive emotions and $r = .531$, $p < .001$ for the positivity ratio. This data suggests that there is a strong and consistent tendency for higher scores on motivation-related variables to be associated with higher levels of positive emotions and a larger ratio of positive to negative emotions. Overall, it is clear that all of the positive emotions are related to the L2 motivational concepts included in the present study.

Table 1 Correlations of positive emotions and the positivity ratio with other learner factors

	L2 anx.	Confidence	Acculturation	Integrative	Instrumental	Ideal self	Ought-to self	L2 effort	Competence	Contact quantity	Contact quality
Amused	-.367**	.416**	.282**	.306**	.214**	.448**	.234**	.414**	.394**	.291**	.468**
Awe	-.069	.141	.225**	.293**	.168*	.284**	.277**	.346**	.267**	.263**	.223**
Grateful	-.252**	.344**	.190*	.226**	.188*	.328**	.211**	.358**	.445**	.109	.360**
Hopeful	-.161*	.245**	.199**	.276**	.200**	.350**	.311**	.449**	.366**	.219**	.326**
Inspired	-.286**	.353**	.156*	.350**	.255**	.411**	.261**	.434**	.390**	.232**	.327**
Interest	-.182*	.235**	.280**	.442**	.291**	.275**	.287**	.422**	.291**	.178*	.432**
Joyful	-.260**	.324**	.300**	.387**	.263**	.400**	.229**	.421**	.366**	.288**	.351**
Love	-.259**	.321**	.378**	.326**	.251**	.411**	.209**	.370**	.352**	.224**	.262**
Proud	-.289**	.361**	.141	.233**	.260**	.362**	.236**	.438**	.409**	.221**	.275**
Serene	-.335**	.399**	.209**	.241**	.200**	.394**	.224**	.314**	.417**	.247**	.312**
Positive emotions	-.365**	.463**	.361**	.431**	.348**	.563**	.358**	.565**	.536**	.320**	.478**
Positivity ratio	-.528**	.607**	.346**	.336**	.189*	.531**	.222**	.528**	.585**	.340**	.581**

The negative emotions produced a less consistent pattern of correlations with motivation-related constructs. As expected, the correlations between negative emotions and motivation variables tend to be negative, except for language anxiety, which correlates positively with these emotions. Considering the *columns* of Table 2, five of the motivation variables show significant correlations with all of the specific negative emotions. In particular, the measures of confidence, competence, quality of contact and the ideal self each correlated as expected with all of the negative emotions. However two scales, the ought-to self and instrumental orientations, showed non-significant correlations with the composite score for negative emotions. Considering the specific negative emotions individually, ought-to self correlated with only two emotions (anger and hate). Instrumental orientation also correlated weakly with all of the negative emotions, showing small correlations with hate, anger and contempt.

If attention is focussed on the emotions, as shown in the *rows* of Table 2, on the one hand a consistent pattern was observed for both anger and hate, which correlated significantly with all of the motivation-related constructs. On the other hand, feelings of guilt and embarrassment were not especially well correlated with motivation variables, correlating with four and five variables respectively. For ease of comparison, the final lines in Tables 1 and 2 provide the same information, that is, correlations involving the ratio of positive to negative emotions (the positivity ratio).

Table 2 Correlations of negative emotions with other learner factors

	L2 anx.	Confidence	Acculturation	Integrative	Instrumental	Ideal self	Ought-to self	L2 effort	Competence	Contact quantity	Contact quality
Angry	.316**	-.376**	-.163*	-.258**	-.162*	-.384**	-.226**	-.395**	-.392**	-.221**	-.425**
Contempt	.197**	-.217**	-.150*	-.295**	-.151*	-.189*	-.086	-.325**	-.213**	-.051	-.386**
Disgust	.361**	-.389**	-.251**	-.354**	-.129	-.263**	-.093	-.294**	-.335**	-.154*	-.504**
Embar.	.299**	-.311**	-.037	-.030	-.005	-.211**	-.014	-.137	-.246**	-.132	-.226**
Guilty	.203**	-.207**	.056	-.079	.040	-.159*	-.073	-.125	-.142	-.015	-.198**
Hate	.348**	-.386**	-.285**	-.354**	-.205**	-.371**	-.209**	-.344**	-.360**	-.172*	-.473**
Sad	.418**	-.418**	-.182*	-.201**	-.009	-.268**	-.022	-.210**	-.291**	-.139	-.394**
Scared	.345**	-.380**	-.202**	-.116	.023	-.249**	.042	-.138	-.322**	-.159*	-.290**
Stress	.399**	-.423**	-.193**	-.087	-.037	-.305**	-.069	-.091	-.337**	-.118	-.282**
Negative emotions	.479**	-.420**	-.265**	-.261**	-.089	-.391**	-.093	-.323**	-.420**	-.184*	-.509**
Positivity ratio	-.528**	.607**	.346**	.336**	.189*	.531**	.222**	.528**	.585**	.340**	.581**

3.2. Regression analyses

The second research question examines emotions that best predict the motivation variables. To address the question, and to limit the overlap among emotion predictors, the 19 positive and negative emotions were entered into stepwise

regression equations. Each of the 11 motivation variables served in turn as the criterion. Only predictors that enter the regression equation at the $p < .05$ level, and which are not subsequently eliminated ($p < .10$), will be reported in the final regression results.

Each of the motivation-related constructs generated a significant prediction equation. Overall, Tables 3 and 4 show that 15 different emotions appear as predictors, with amused (6 times), angry (5 times), and peaceful (3 times) being the only ones to appear more than twice. Table 3 also shows that 60% of the significant predictors (21 out of 35) are positive emotions. Each motivation-related construct shows between 2 and 5 emotions as significant predictors. Finally, it can be noted that in every case, the positivity ratio shown in Table 1 provides slightly less predictive power than the stepwise multiple regression equation, although in many cases the level of prediction provided by each is quite similar.

Table 3 Results of stepwise regressions predicting motivation-related constructs

Criterion	R	Predictor 1	Predictor 2	Predictor 3	Predictor 4	Predictor 5
Competence	.63	Grateful .30	Angry -.23	Scared -.20	Peaceful .22	
Confidence	.63	Amused .22	Embarrassed -.16	Angry -.19	Sad -.20	Peaceful .19
Quality	.63	Disgust -.26	Amused .31	Angry -.22		
Effort	.62	Amused .25	Proud .26	Angry -.28	Awe .18	Stressed .18
Ideal	.59	Amused .31	Love .26	Angry -.23		
Anxiety	.56	Sad .26	Amused -.23	Embarrassed .18	Peaceful -.15	
Integrative	.51	Interest .24	Joy .23	Disgust -.18		
Acculturation	.45	Love .39	Scared -.22			
Quantity	.38	Amused .24	Joyful .20			
Ought	.36	Hope .28	Awe .20			
Instrumental	.32	Inspired .19	Proud .18			

Note. All Rs are significant at $p < .001$; all beta coefficients are significant at $p < .05$.

Table 4 Frequency of the differential emotions as predictors in the regression equations

Amused (6)	Angry (5)	Peaceful (3)
Proud (2)	Joy (2)	Love (2)
Awe (2)	Scared (2)	Embarrassed (2)
Sad (2)	Disgust (2)	Grateful (1)
Stressed (1)	Hope (1)	Inspired (1)

4. Discussion

The present data provide evidence that both positive and negative emotions are correlated with SLA motivation processes in the context of South Tyrol. Further, the data suggest a substantial role for positive emotion, a topic not widely studied in SLA but which might provide several productive lines of enquiry for future research (MacIntyre & Mercer, 2014). These results contribute to the developing interest in applications of positive psychology in SLA (Gabryś-Barker & Gałajda, 2016; MacIntyre et al., 2016), and in particular theory related to positive emotion (Arnold & Brown, 1999; Dewaele & MacIntyre, 2014, 2016).

4.1. A role for emotions

Overall, the present data show that motivation-related constructs are more consistently and strongly correlated with positive emotions than with negative emotions. Only four correlations involving positive emotions (3%) failed to reach the standard $p < .05$ level of significance compared to 31 non-significant correlations involving negative emotions (26%). But it is the magnitude of the correlations that provides strong support for the potentially motivational force of positive emotion. Izard (2007, p. 265) suggested that emotions were “by far the most prominent source of human motivation.” In the SLA literature, the role of attitudes and cognition has been emphasized, especially in the theories of Gardner and Dörnyei respectively. However, the present data show that emotion, and in particular positive emotion, is strongly associated with motivational processes. It is worth noting that positive emotions correlated more strongly with Gardner’s integrative orientation than with instrumental orientation, Clément’s quality of contact better than frequency of contact, and Dörnyei’s ideal self better than ought-to-self. Considering the literature as a whole, integrativeness, the ideal self, and positive contact between language groups all have been regarded as key to sustained motivation for language learning. The present data suggest that there may be a significant connection between emotion and those variables, which is worth further exploration.

Perhaps it can be considered “good news” that negative emotions tend to be less consistently correlated with motivation. Among the negative emotions, the only two that correlate with all of the motivation-related variables are anger and hate; the regressions showed that anger was the single most frequent predictor among the negative emotions. It is difficult to imagine emotions with stronger motivational force than anger and hate; their intensity is undeniable. “Anger is not only the most passionate emotion, it is also the most dangerous, because its purpose is to destroy barriers in the environment” (Reeve, 2015, p.

408). The intensity of anger can be highly disruptive to ongoing thought and behaviour; anger makes it difficult to think clearly and can lead to verbal and/or physical aggression (Tafrate, Kassino, & Dundin, 2002). Dewaele (2012) devotes a full chapter to understanding the ways in which multilinguals express anger, a process that is both inherently difficult and socially important. In his analysis of the pragmatics of anger expression, Dewaele notes that “. . . anger, cursing and swearing involve a certain amount of loss of control over one’s emotions, and may very well include a similar lack of control over linguistic resources, which makes it all the more challenging in the foreign language” (p. 109). Several studies have shown that less proficient learners have considerable difficulty with pragmatic expression of emotion in the target language (Dewaele & Pavlenko, 2002; Graham, Hamblin, & Feldstein, 2001; Rintell, 1984). One of the limitations of the present study is that we do not have data concerning the triggers of the various emotions; we do not know, for example, whether negative emotions such as anger and hate are triggered by intrapersonal factors, linguistic factors, social factors, power relations or political differences, or by other sources. But the present results do suggest that those who experience anger more often also tend to have higher anxiety and lower scores on perceived competence, effort at learning, confidence, ideal L2 selves, with the strongest correlate being lower quality of intergroup contact. It is ironic that the experience of intense, negative emotions such as anger may be partially responsible for inhibiting learners from acquiring the vocabulary with which they can express and deal with those same emotions.

At their core, emotions provide information about the individual’s reaction to ongoing events. Defined as short-lived experiences, emotions function to facilitate situational adaptation. In the second language context, emotions may both contribute to and impair learning and communication processes, operating in complex ways. It is not a simple matter of negative emotions being “bad” and positive emotions being “good” for learning, because all emotions are fundamentally adaptive—the issue is the quality of that adaptation over a given period of time.

The present study examined emotions on a timescale that asked respondents to report on typical patterns of emotional arousal. The regression analyses show that positive and negative emotions combine to predict most of the motivational constructs studied here, with the exception of the ought-to self and instrumental orientation (which do not correlate with the negative emotions) and quantity of contact (showing a weak but significant correlation with the composite measure of negative emotion). It is an open question whether the pattern of correlations observed on this timescale would also apply to the dynamics of emotions as they wax and wane during the time span of a specific situation, such as a conversation or classroom lesson. To address emotions as they are experienced

moment-to-moment requires a different methodology than the one used in the present study, especially, if researchers are interested in describing the coordination of positive and negative emotional experiences during communication.

The adaptive value of both positive and negative emotion is best considered a conjoint, intertwined process (Dewaele & MacIntyre, 2014, 2016). For example, even though language anxiety has been consistently associated with negative outcomes (Horwitz, 2010; MacIntyre, 1999, in press), emotion theory would suggest that it is necessary to consider how anxiety might in some way aide adaptation. The present regression analysis shows that language anxiety is predicted by two positive and two negative emotions. It is not especially surprising that embarrassment or sadness would predict anxiety, but it is instructive to think about how language anxiety might be related to feeling amused and peaceful. If anxiety arises as a result of a threat to one's positive sense of self (Cohen & Norst, 1989), then part of its function might be to motivate a learner to take steps to restore one's positive self-image. This can be done on short timescales by avoiding communication to minimize the chance of making mistakes or on longer timescales by avoiding target language speaking contexts. However, the regression analysis predicting language anxiety appears to be suggesting that anxiety might be ameliorated by arousal of an opposing positive emotion such as amusement (perhaps the ability to laugh at one's self) or a sense of being comfortable, secure and at peace with the present situation. In essence, it is possible that competing positive emotions can ward off a negative reaction such as anxiety arousal before it really gets going. As suggested by Fredrickson's (2013b) work with the positivity ratio, the combined, interacting effects of positive and negative emotions might be especially interesting as a resource helping to sustain motivation.

4.2. Interactions among emotions

The interaction among emotions, and the motivational correlates of those interactions, is evident in the present data. Examining the regression results, in the context of South-Tyrol the two emotions most often predictive of second language motivation-related constructs were amused and angry. The function of anger to destroy obstacles has been described above; amusement can work in opposition to anger. Fredrickson (2013a, p. 6) suggests:

Amusement occurs when people appraise their current circumstances as involving some sort of nonserious social incongruity. It can erupt, for instance, in the wake of a harmless speech error or physical blunder. Amusement creates urges to share a laugh and find creative ways to continue the joviality. As people follow these urges, they build and solidify enduring social bonds.

In the present data, amusement correlated with all of the motivation-related variables and was significantly predictive of six variables in the regressions: confidence, frequency and quality of contact, effort, ideal L2 self, and language anxiety (negatively correlated). The enduring social bonds that Fredrickson describes likely emerge from intergroup contact wherein mistakes and gaffes can be taken as matters to be ignored, accommodated, or perhaps laughed off. Reducing the seriousness of the emotional reaction to communication errors has been recommended for learners who experience language anxiety as a way to minimize self-critical thoughts and deal with perfectionistic tendencies (Gregersen & Horwitz, 2002; Gregersen & MacIntyre, 2014). The correlation between amusement and effort further suggests that a setting that allows for amusement might facilitate sustained engagement with the other language group. Perhaps then it is not surprising that amusement is also predictive of both quality of contact and confidence with the language. Among the 19 emotions, the single strongest correlate of the ideal L2 self is amusement. This unexpected result might suggest that amusement facilitates intergroup contact and language learning in this particular context in ways that have not yet been described in the SLA literature. If ability to find humour in mistakes and to enjoy minor social incongruities becomes a valued part of the linguistic landscape, facilitating frequent and enjoyable contact, then it makes sense for learners in this context to integrate amusement into their sense of future self and who they want to become.

Anger also appears frequently in the regression equations. The core function of anger is to remove obstacles or barriers (Reeve, 2015). The negative regression coefficients suggest that lower levels of anger facilitate more frequent and pleasant social contact, attendant feelings of confidence and competence, and development of the ideal self. With the exception of Dewaele's (2012) work, the role of anger itself has not been widely studied in the SLA literature, but the present results suggest that higher levels of anger are related to both intergroup contact and the sense of self.

Further examination of the regression results reveals that feeling peaceful (serene and content) correlated with all of the motivation-related concepts and appeared as a significant predictor in three of the regression equations, specifically predicting competence, confidence and low anxiety. There have been efforts recently to link peace and language learning, notably, Oxford's (2013) book *The Language of Peace: Communicating to Create Harmony*. Fredrickson (2013a, p. 4) suggests that the cluster of emotions involving peacefulness,

... emerges when people interpret their current circumstances as utterly cherished, right, or satisfying. People feel serenity, for instance, when they feel comfortable, at ease in, or at one with their situation. Serenity creates the urge to savor those current circumstances and integrate them into new priorities or values. The durable resources

created through savoring and integrating include a more refined and complex sense of oneself and of one's priorities.

The combination of amusement and peace, evident in two of the regressions, provides a potentially powerful social and emotional context that can help develop competence and confidence when people feel at ease in the social context, further emphasizing the contributions to language learning from interacting emotions.

The highly consistent pattern of correlations observed for the positivity ratio suggest that positive emotions make a significant contribution to a variety of motivational processes. The five strongest correlates of the positivity ratio were (in descending order): confidence, competence, quality of contact, effort, and a lack of anxiety. The results are remarkably consistent with Clément's (1980, 1986) socio-contextual model, which emphasizes the psychological effects of contact between language communities. According to research done by Clément's group,

. . . contact with or confidence in an L2 leads individuals to identify with the L2 community. This process, in turn, guides individuals to more positive representations of the L2 culture. In day-to-day life, this research suggests that learning an L2 might positively influence intergroup relations. In the context of learning an L2, we see greater identification with that community, which, in turn, leads us to feel more positively about the community . . . It is also conceivable that having positive cultural representations of a language community will motivate individuals to learn that L2. (Rubenfeld, Clément, Lussier, Lebrun, & Auger, 2006, p. 627)

The present data provide evidence that both positive and negative emotions support the intergroup processes at play. The positivity ratio captures the notion that the stronger positive emotions are relative to negative emotions, the more favourable the intergroup, interpersonal and intrapersonal outcomes are likely to be.

The present study has several limitations that should be taken into consideration. Data were gathered using a convenience sample of young persons in a cross-sectional research design. The data do not allow for an understanding of the developmental patterns of emotions and the potential for their relationships to motivation to change over time. The data also reflect a longer term time scale than the ones on which emotions are felt *in situ*. Respondents reported on long term tendencies to experience specific emotions rather than the specific emotions that they were feeling at a given time. Whether older adults show a similar pattern of emotional reactions and correlates with language learning motivation, whether shorter and longer timescales might show different patterns, and whether those patterns change as the present cohort ages, is an empirical question for future research. Further, the social context provides for intergroup contact that might serve to magnify the role of emotions compared to

contexts with infrequent contact between groups, although that is an empirical question awaiting future research. Although group-level analysis can describe general patterns, the research approach used here does not speak to patterns of emotions experienced by specific individuals. It is not known to what extent emotions experienced by individuals, or their changes over time, mirror the group-level patterns reported here (see Molenaar & Campbell, 2009). It also is an open question whether positive emotion would show the same patterns in foreign language contexts, such as learning English in Japan or China (Jin, de Bot, & Keijzer, 2015). Finally, the translation of the Differential Emotions measure into the Italian language raises an issue that has been identified in the literature on emotions, that is, to what extent emotions are universal and cross-cultural versus shaped by learning within a social context. The difficulty in translating one of the negative emotion items (“ashamed, humiliated, or disgraced” converged on the same terms in Italian as “embarrassed, self-conscious, or blushing”) suggests that emotion schemas are influenced by language and culture. Although a small number of basic emotions might be powerful and universal, it is emotion schemas that account for the majority of felt emotions (Izard, 2007; Reeve, 2015) and they are contextualized within languages.

In spite of its limitations, the present study provides new evidence for the relevance and importance of emotion in the motivation for language learning. The particular role of specific positive and negative emotions in language learning warrants further investigation, but it is the interaction of positive and negative emotion that has strongest potential to inform future research and theory development. The positivity ratio described in the present study emphasizes a concern for the interactions among emotions. Understanding the accumulated effect of emotional arousal over time can inform motivation theory and research. However, the dynamic interaction of positive and negative emotion during language learning and communication processes, that is, their coordinated effects in real time at the individual level, would also be an especially interesting avenue of research.

5. Conclusions

The study of emotion in SLA in general, and positive emotion in particular, is a potentially rich and powerful avenue for future investigations. We have found that there are a large number of emotions that are correlated with well-established motivational variables in SLA, including Gardner’s (2010) integrative and instrumental orientations, Dörnyei’s (2005) L2 self-system, and Clément’s (1986) socio-contextual variables including quantity and quality of intergroup contact. The positivity ratio (Frederickson, 2013b) provides one way to capture succinctly the notion that positive and negative emotions interact and, to the

extent that persons tend to experience positive emotions more often than negative ones, correlate well with language learning motivation.

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