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TRANSFER OF AFFECTIVE CONNOTATIONS IN THE BASIC LEXICON OF SPANISH LEARNERS OF L2 ENGLISH

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Abstract: *This study addresses emotion in second languages with the aim of understanding how late bilinguals incorporate the affective connotations of core vocabulary into their mental lexicon. Specifically, it examines whether there are emotionality differences between the L2 of learners and the native languages of reference, and whether linguistic competence, contact with the L2 and its culture, and attitudes explain the different tendencies. For this purpose, a group of Spanish learners of L2 English assessed a corpus of 300 words on the affective dimensions of valence and arousal. Different statistical analyses showed that English learners value the lexical repertoire in a very similar way to Spanish speakers, differing markedly from English speakers. It is mainly concluded that the mother tongue exerts a significant influence on this perceptual process and that the emotional connotations of the L2 are incorporated into the mental lexicon through translations from the L1 as a result of an emotional transfer.*

Key words: *valence, arousal, L2 English, transfer, emotionality.*

1. INTRODUCTION

Most studies on emotion in second languages (L2s) have been conducted with balanced bilinguals or with highly proficient speakers in the L2, profiles which are generally associated with consolidated acculturation processes. The focus on language learners is relatively recent and its growing interest lies in the necessity not only of understanding how the semantic-affective space is constructed in the target language, but also of promoting an effective and emotional communication process in learners' interpersonal encounters.

Research shows that there exists a great diversity of results in this respect, as a consequence of the different individual experiences and contexts surrounding bilingual speakers. On the one hand, studies on perceptions of the emotional intensity and the discursive construction of experiential representations agree that the first language (L1) is normally felt as more evocative and emotional than the L2 (Schrauf & Rubin, 2000; Dewaele, 2010; Pavlenko, 2012). On the other hand, research on the automatic processing of emotionally charged words and phrases in cognitive tasks (behavioural, electrophysical, and neuroimaging) shows mixed results. Some studies report an emotional L1 advantage (Anooshian & Hertel, 1994; Conrad et al., 2011; Foroni, 2015; Hsu et al., 2015; Lindquist et al., 2015; Fan et al., 2016; Baumeister et al., 2017; Rolland et al., 2017); others do not find language differences (Ferré et al., 2010; Eilola & Havelka, 2011; Ponari et al., 2015); and others evidence a higher emotional resonance in the L2 (Ayçiçeği-Dinn & Cadwell-Harris, 2004; Kazanas & Altarriba, 2016). Therefore, researchers face a complex phenomenon, since the methodological approach adopted (introspective, automatic processing, production), the type of bilingual (balanced, late), and other variables (contexts of language use, language and cultural experiences, language frequency) are determining factors.

With regard to studies on L2 learners (Caldwell-Harris, 2015), the existing results do not completely demonstrate that the L2 is less affective and activating and more emotionally distant than the L1 (Dewaele & Pavlenko, 2002; Keysar et al., 2012; Costa et al., 2014). There are cases where the L1 and L2 behaviour is very similar (Winskel, 2013) and others in which the L2 turns out to be more emotional. This emotional L2 advantage has been explained as a phenomenon of overdimension, the result of the idealised representation of the L2 and its sociocultural context

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and the remarkably positive attitudes of L2 learners in relation to both the target language and its learning (Blanco Canales & Hernández Muñoz, 2023). In other cases, it has been attributed to the consolidation of acculturation processes (Velez-Uribe & Rosselli, 2019).

In this context of diverging results and interpretations, there is an increasing awareness of the influence that sociocultural factors can have on all aspects of bilingualism (Titone & Tiv, 2023). Indeed, recent findings suggest that the incorporation of affective properties of words in L2 is modulated by the language and culture of origin, especially in late bilinguals, and interacts with a wide range of linguistic and extra-linguistic factors (Blanco Canales & Hernández Muñoz, 2023; Hernández Muñoz & Blanco Canales, 2023).

This study aims to examine how Spanish students of L2 English perceive the affectivity of basic words and the extent to which their behaviour differs from the original and target languages. Two research questions were formulated:

1. Are there any differences in the affective ratings (written valence and arousal) of basic words between L2 English, L1 English and L1 Spanish? How do Spanish learners of L2 English behave in relation to the original and target languages?

2. As to the affective ratings of words in L2 English, to what extent are they affected by perception modality, language level competence, and language contact with and attitudes towards the target language?

The results will enable a check on whether the tendency to overdimension also occurs in Spanish learners of L2 English and, if so, to assess whether there are factors (perception modality, language level, contact, and attitudes) that favour this behaviour or whether it is due to a transfer effect. This, in turn, will enable observation of how Spanish learners shape the affective space in L2 English in their learning process.

2. AFFECTIVITY IN SECOND LANGUAGES

Emotion and the affectivity of language have the role they deserve in linguistics, psychology, education, and all their research areas (Gkonou et al., 2020; Mavrou et al., 2022). However, despite its undeniable popularity and relevance over the last decades, emotion remains a complex construct to study, analyse, and understand (Dewaele, 2019). Part of the complexity of investigating affectivity in language and language acquisition processes lies in the differences in emotion (lexical) concepts across and within languages and cultures, as evidenced by studies from social and cultural psychology (Mesquita & Boiger, 2014; Barrett, 2017) and cognitive linguistics, among others (Wierzbicka, 1992, 1994, 1999, 2015; Pavlenko, 2005, 2008a, 2008b, 2012, 2014).

Emotion concepts are defined as scripts "embedded within larger systems of beliefs about psychological and social processes […] formed as a result of repeated experiences and involve causal antecedents, appraisals, physiological reactions, consequences, and means of regulation and display" (Pavlenko, 2008a: 150). As introduced above, variation across cultures is inherent in emotion conceptualisation and representation. At the most general level, experiences seen as emotional in some languages may be categorised and interpreted differently in others. While the Ifaluk language of Micronesia, for example, sees emotions as relational phenomena arising between people, other Western languages like English view feelings as inner states arising within individuals (Pavlenko, 2014). There may also be linguistic differences when talking about emotions at the structural level and, then, a preference for specific morphosyntactic patterns (Pavlenko, 2008a, 2008b). The English language, for instance, tends to favour adjectival constructions that stress the independence and individuality of Anglo cultures and, on the contrary, Russian favours verbs which reflect the collectivism and interdependence typical of this culture (Wierzbicka, 1999). Finally, languages may differ at the most conceptual level of lexical encoding (Pavlenko, 2014). Again, the Russian language does not have single-word equivalents of English nouns like *fun* or *frustration* (Pavlenko, 2014). Similarly, English distinguishes between the terms *shame* and *embarrassment* while Spanish only has the term *vergüenza* (Bosque, 2010). All in all, these differences in emotion concepts and their semantic content and boundaries across languages reflect "distinct cultural norms governing the domain of emotions in different societies" (Pavlenko, 2008b: 91).

This variation in emotion conceptualisation has direct implications for their representation in the bilingual and multilingual mind. Because the semantic and/or conceptual representations of lexical concepts are mostly language- and culture-specific, apparent translation equivalents in two languages (e.g., the L1 and the L2) can always present differences in meaning, emotionality, or appropriateness of use (Pavlenko, 2008a, 2008b; Athanasopoulos, 2015). Consequently, bilingual users and L2 learners in particular are continuously subjected to conceptual representation and restructuring in their minds. Athanasopoulos (2015), based on Pavlenko's and Wierzbicka's studies, proposes seven possible outcomes for conceptual representation in bilinguals. Among them, one of the most relevant for understanding this study is *L1 conceptual transfer*:

> This outcome entails that L1-based concepts underlie both the L1 and the L2 linguistic systems. That is, L2 words and grammatical constructions are anchored on the already established L1-based conceptual system. This state of the conceptual system is most apparent in foreign language learners and L2 users who have not reached advanced levels of proficiency in their L2. (Athanasopoulos, 2015: 279)

Thus, L2 learners may know the meaning of an (emotional) word in the L2 but they may not have acquired the full concept and its affective connotations, an idea directly linked to the notion of language embodiment (Pavlenko, 2012; Dewaele, 2022).

In studies on first and second language acquisition and learning, one of the methodologies frequently used to explore the emotional charge of language and vocabulary has been to subjectively measure their affectivity (usually in the written modality) by means of a semantic-affective map, consisting of the so-called emotional dimensions of valence and activation, among others (Barrett & Russell, 1999; Russell, 2003). Through this perceptual process of the charge of pleasantness and/or intensity, a subjective emotional evaluation can be obtained, reflecting the underlying feelings behind each concept. In order to understand the processing and representation of emotion in L1s, numerous studies have collected affective norms for words in many languages. For example, Warriner et al.'s (2013) is one of the most well-known and comprehensive studies for the development of later norms in other languages like Spanish, Italian, French, German, or Chinese (Monnier & Syssau, 2014; Schmidtke et al., 2014; Fairfield et al., 2017; Stadthagen-González et al., 2017; Yao et al., 2017).

In additional languages, though to a lesser extent, there are already a considerable number of studies that seek to understand the representation of emotion in L2s through the perceptual process of subjectively rating linguistic elements in valence and arousal (Winskel, 2013; Velez-Uribe & Rosselli, 2019; Garrido & Prada, 2021; Imbault et al., 2021; Blanco Canales & Hernández Muñoz, 2023; Hernández Muñoz & Blanco Canales, 2023; Pérez-García, 2023; Blanco Canales, 2024). Another line of studies focuses on emotional expression, the production of autobiographies or narratives and the measurement of the emotional charge of the lexical output through valence and arousal (Pérez-García & Sánchez, 2020; Blanco Ruiz & Pérez Serrano, 2021; Simón Cabodevilla & Martín Leralta, 2023).

With regard to the first set of studies, Winskel (2013), for instance, examined the valence ratings of negative and neutral words in users of L1 Thai and L2 English in non- immersion contexts. No differences were found between the ratings in L1 and L2. Velez-Uribe and Rosselli (2019) asked Latino students to rate the valence of emotional words (positive, negative, taboo) and neutral words in their L1 Spanish and L2 English and in two modalities (visual, auditory). Positive and negative words were perceived as more emotional (more extreme valence scores) in L2 (participants' dominant language), while taboo words were more extremely negative in L1. Garrido and Prada (2021) collected valence word ratings from Portuguese-English bilinguals in their L1 and L2. The results revealed an advantage for positive, negative and taboo words in L1. No differences were found regarding neutral words. Imbault et al. (2021) collected valence and arousal word ratings in L2 English and compared them with the L1 ratings in Warriner et al. (2013). Overall, more attenuated (less emotional) responses were found in L2 compared to native-like responses. Hernández Muñoz and Blanco Canales (2023) investigated the emotional perception of words in L1 and L2 Spanish (the latter, Chinese and European students) and found a decreased emotional resonance in L2 Spanish, although the Europeans' ratings were overall closer to L1 Spanish. Pérez-García (2023) explored how positive and negative emotion words are perceived in L1 and LX Spanish. An L1 advantage was found for positive emotion words in valence. In arousal, there was found an L1 advantage for positives and similar activation levels between L1 and LX for negative emotions. In addition, Spanish LX users with immersion and higher levels of integration in the target culture perceived emotion words as more extremely emotional. In a similar vein, Blanco Canales and Hernández Muñoz (2023) showed that Spanish L2 learners (Brazilian and Greek) with a higher competence in, cultural contact with, and positive attitudes towards L2 Spanish rated positive and neutral words as more emotional on valence than Spanish L1 users.

3. METHODOLOGY

3.1. English L2 participants

A total of 73 Spanish students of English as a foreign language and with L2 English participated in this study. They were first-year undergraduate students (around 18 years of age) at a public university in Spain. There were 21 males, 49 females, and three non-binary students. They were divided into two English proficiency groups: level 1 ($n = 41$) and level 2 ($n = 32$, B1 and B2 levels respectively according to the CEFR, Council of Europe, 2001); two groups based on their contact with the English language and culture: low contact ($n = 39$) and high contact ($n = 34$); and two groups with positive ($n = 35$) or very positive attitudes ($n = 38$) towards the target language.

3.2. Questionnaires

In an online questionnaire, each student rated 300 words in (L2) English: 150 on valence (75 in the written modality and 75 in the oral) and 150 on arousal (75 per modality). Participants scored the items on a 7-point scale, where 1 indicated *negative* or *no arousal* and 7 indicated *positive* or *high arousal*. An additional box was included in case they did not know the meaning of the word. They were also asked to complete a sociodemographic questionnaire, which allowed the collection of information on language learning experiences and contact with and attitudes towards L2 English. Both online questionnaires were designed and administered with *Google Forms*, but they were completed by participants in class under their teacher's supervision. Their participation was voluntary and they received extra credits for their collaboration. They also signed an informed consent form.

3.3. Word stimuli

The questionnaires consisted of 300 words belonging to basic vocabulary (see Appendix). The English words were translations of a set of Spanish words. All Spanish words were originally drawn from the repertoire established by the Instituto Cervantes (2006) for Spanish A1 and A2 levels (for similar repertoires in other languages, see Van Ek & Trim, 1991a, 1991b, 2001, for English; Beacco, 2004, for French) and supported by the ALTE Can Do project (https://www.alte.org/), and by the CEFR (Council of Europe, 2001). The repertoire has been used in similar studies with L2 Spanish (Hernández Muñoz & Blanco Canales, 2023). Since the participants in this study were English learners at B1 and B2 levels (CEFR, Council of Europe, 2001), it is assumed that the denotative meanings—those that emerge in the absence of context, as in this case—associated with the selected terms were familiar, even in the case of polysemic words. The translation into English was carried out by a speaker of L1 Spanish and L2 English, highly proficient in both languages. For the oral modality, the English equivalents were recorded by a young female L1 user of English with an Irish accent. She was instructed to speak neutrally, avoiding prosodic changes that might affect emotional interpretation. The word corpus includes 142 nouns, 84 adjectives, and 72 verbs. In terms of word type according to valence, 160 were positive, 90 were neutral, and 50 were negative. In addition, 167 were low-intensity words and 133 were high-intensity words. Both dimensions were calculated from the valence and arousal data provided by the Emofinder database (Fraga et al., 2018). In the first case, the total scale was divided into three levels of similar amplitude: from 1 to 3 for negative words; from 3.1 to 6 for neutral words; and from 6.1 to 9 for positive words. With regard to arousal, the limits were established on the basis of the total mean score (4.25) and the words were divided into high or low according to whether they were above or below this score.

3.4. L1 word ratings

The valence and arousal (written) ratings for the words provided by L1 users of the respective language (L1 Spanish or English) were extracted from existing databases. The affective word ratings in L1 Spanish were collected from the Emo/Ele database (https://grupoleide.com/emo-ele/; Blanco Canales & Hernández Muñoz, forthcoming). In L1 English, the word ratings by Warriner et al. (2013) were employed.

4. RESULTS

4.1. Research Question 1

As a preliminary step to the analyses, Pearson's *r* for each dimension was calculated in order to check if the new data (L2 English) correlated favourably with the other databases used. The trends between databases were similar, which makes the data reliable (L2 English and L1 English *r*s = 0.762 for valence and 0.348 for arousal; L2 English and L1 Spanish *r*s = 0.757 for valence and 0.817 for activation; in all cases, the significance was <0.001).

4.1.1. Valence

The descriptive data (Table 1) show that the mean differences between the three groups are small, especially in the case of neutral words. Overall, English L2 and Spanish L1 ratings are very close, with the English L1 ratings being more distant (Figure 1). Positive and negative words are more affective (more extreme valence scores) in L1 Spanish, followed by words in L2 English, that are perceived as more extremely pleasant and unpleasant than in L1 English. This leads to the conclusion that English learners conceptualise the words in the same way as they do in Spanish.

Table 1. Descriptives for valence.

	Word type	Group	*N*	Mean
valence	positive	L2 English	80	5.59
		L1 English	79	5.20
		L1 Spanish	80	5.69
	neutral	L2 English	44	4.18
		L1 English	42	4.26
		L1 Spanish	44	4.28
	negative	L2 English	26	2.43
		L1 English	26	2.58
		L1 Spanish	26	2.30

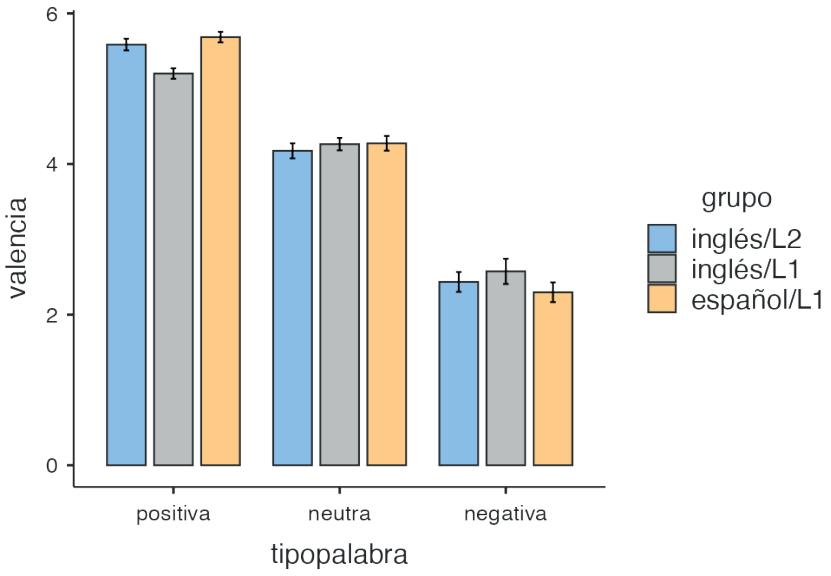

Figure 1. Valence.

In order to test whether the differences between the groups are relevant, a two-way ANOVA (word type and group) with the mean score of each word as dependent variable was performed. Previously, the assumptions of homogeneity of variance (Levene's test, $p = 0.371$) and normality (Shapiro-Wilk test, $p = 0.148$) were verified. The results show that the interaction of the two factors is significant ($p = 0.001$), with F (8, 4) = 4.669, although it explains only 4% of the variance (partial $\eta^2 = 0.041$).

Table 2. ANOVA valence.

	Sum of squares	*df*	Mean square	*F*	*p*	η^2p
Global model	580.375	8	72.547	170.543	<0.001	
word type	572.043	2	286.022	667.944	<0.001	0.753
group	0.334	2	0.167	0.390	0.677	0.002
word type*group	7.998	4	2.000	4.669	0.001	0.041
Residuals	187.557	438	0.428			

Table 3 shows the average standard deviations by word type to explore the valence differences between the groups in more detail. The differences occur for positive and negative words (not neutral words) and only between L2 and L1 English and, especially, between L1 English and L1 Spanish. In addition, the negative words are the ones with the widest disparity in proportion (Figure 2).

Table 3. Average standard deviations by word type for valence.

	L2 English–L1 English	L2 English–L1 Spanish	L1 English–L1 Spanish
positive	0.33	0.25	0.41
neutral	0.29	0.21	0.26
negative	0.31	0.23	0.40

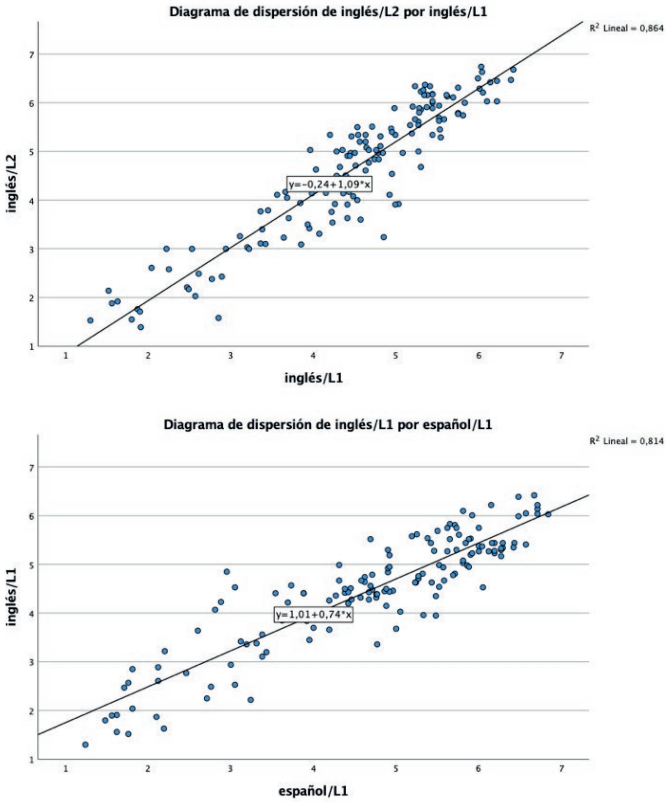

Figure 2. Scatter plots of L2–L1 English and L1 English and Spanish contrasts for valence.

As to the comparisons between English L2 and L1, the words with a deviation higher than 0.5, in order from highest to lowest, were: *to pay, poor, black, quiet, luck, to run, to change, nature, to matter, serious, nice, to learn, to know, piano, hot, cinema, classic, modern, identity, bald, short, sun, institute, closed, moon, excursion, to understand, winter, tale, peace.* All of them obtained higher scores in L2 English, with the exception of *to pay, poor, quiet, to run, serious, classic, short, institute* and *closed*, whose scores were higher in L1 English. The fact that they are mainly negative and neutral words implies that English L2 students tend to perceive higher word negativity than L1 speakers.

The words that differed between L2 English and L1 Spanish were the following: *dark, quiet, beer, cold, to order, the end, black, dream, straight, blue, thirst, classic, argument, ice cream, to sell, journey, typical, poetry.* Out of 18 words, 10 were more positive in L1 Spanish and eight in L2 English (*beer, to order, black, dream, thirst, classic, argument* and *ice cream*).

The highest number of word differences were found between L1 English and L1 Spanish: *to pay, brown, to matter, to order, cold, to change, deep, to end, closed, nice, town, journey, nature, poor, to leave, bald, thirst, to guess, water, identity, to know, to read, cinema, to learn, birthday, friend, full, poetry, white, piano, short, serious, to snow, moon, peace, selfish, tale, quiet, ambulance, dirty, fruit, to sell, walk, blue, concert, to understand.* These were always more positive in L1 Spanish, except for a group of negative (*deep, closed, poor, to leave, bald, thirst, serious, selfish, ambulance*, *dirty*) and neutral words (*to pay, to order*), which obtained higher scores (perceived as more positive) in L1 English. It is shown again that the negative words tend to be more emotional (more extreme scores) in L1 Spanish.

4.1.2. Arousal

The arousal dimension shows more marked contrasts between the groups (Table 4). As in valence, the differences between L2 English and L1 Spanish are small, with the English L1 group presenting the most distant and lowest arousal scores. Indeed, as illustrated in Figure 3, the English L2 group perceive the words as more activating (higher arousal scores for low- and high-intensity words) than the English L1 group.

Table 4. Descriptives for arousal.

						Shapiro-Wilk	
	Intensity	Group	*N*	Mean	*SD*	*W*	*p*
arousal	low	L2 English	87	3.90	0.780	0.987	0.538
		L1 English	85	2.99	0.684	0.943	<0.001
		L1 Spanish	87	3.81	0.766	0.991	0.842
	high	L2 English	63	4.79	0.750	0.976	0.252
		L1 English	61	3.73	0.636	0.990	0.905
		L1 Spanish	63	4.61	0.826	0.980	0.382

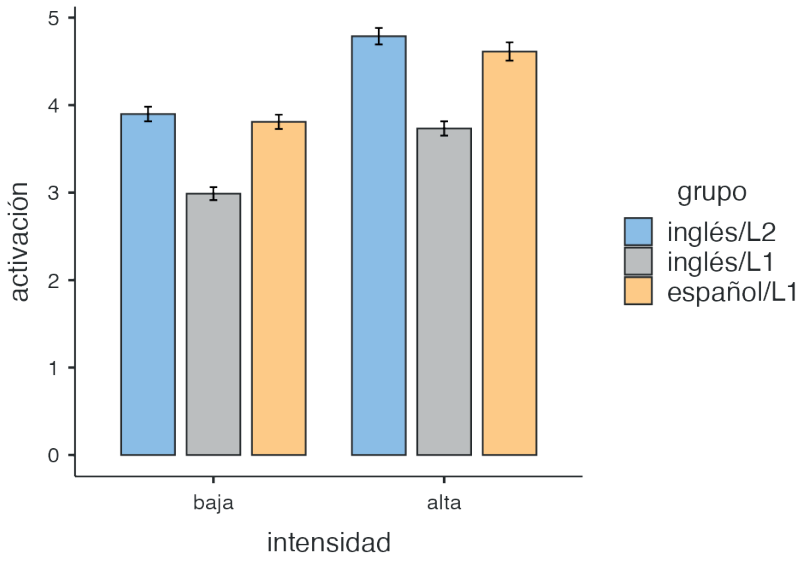

Figure 3. Arousal.

After the Levene's and Shapiro-Wilk tests to check the assumptions of homogeneity ($p = 0.10$) and normality ($p = 54$), an ANOVA test (Table 5) showed that both intensity [F (5, 1) = 129.58, partial $\eta^2 = 0.22$] and group [F (5, 2) = 73.67, partial $\eta^2 = 0.25$] reached statistical significance (p <0.001), but not their interaction ($p = 0.71$). Indeed, as seen in Figure 3 above, the arousal pattern across groups for low- and high-intensity words is similar.

Table 5. ANOVA arousal.

	Sum of squares	*df*	Mean square	*F*	*p*	η^2p
Global model	153.599	5	30.720	55.906	<0.001	
word intensity	71.697	1	71.697	129.589	<0.001	0.228
group	81.522	2	40.761	73.673	<0.001	0.251
word intensity*group	0.380	2	0.190	0.343	0.710	0.002
Residuals	243.439	440	0.553			

The average standard deviations by word intensity between groups are similar to but higher than valence deviations rates. Again, the difference lies between L2 and L1 English and between L1 English and Spanish (Table 6). The areas of dispersion are not particularly different and quite homogeneous (Figure 4), which suggests that the differences do not occur in one type of words (high or low intensity) in particular, but they affect specific items across the whole spectrum.

Table 6. Average standard deviations by word intensity for arousal.

	L2 English–L1 English	L2 English–L1 Spanish	L1 English–L1 Spanish
low	0.71	0.31	0.66
high	0.79	0.30	0.75

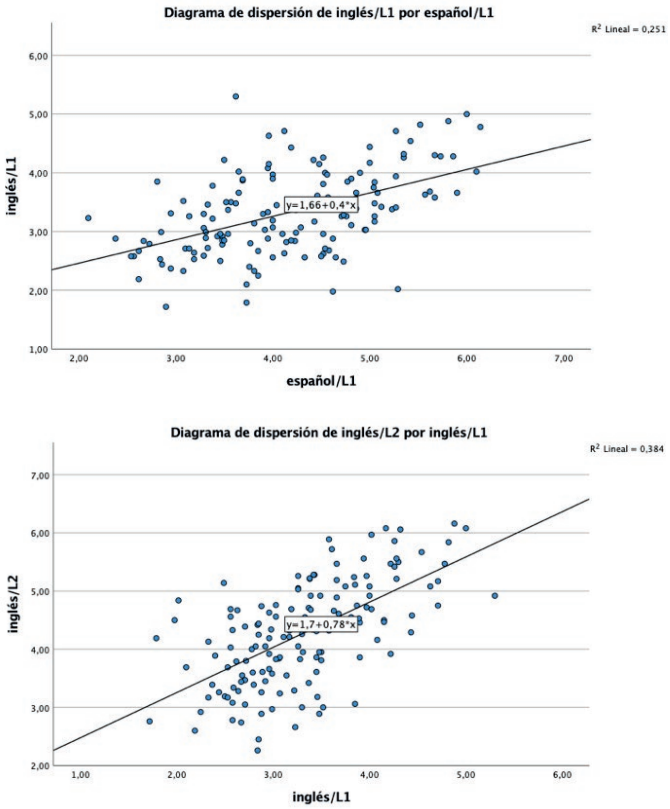

Figure 4. Scatter plots of L2–L1 English and L1 English and Spanish contrasts for arousal.

In this affective dimension, the differences in scores between the different groups were higher than in valence. As to the comparisons between English L2 and L1, the words—more arousing in the L2 in all cases—with a deviation above 1 (cut-off point in this dimension) were, in order from highest to lowest: *grow up, grandmother, to study, information, song, to call, to give, necessary, to drive, rain, exam, to love, language, to like, handsome, to earn, sociable, to live, station, to speak, optimistic, academic, to travel, to visit, to ask, message, hospital, summer, countryside, to need, swimming pool, important, bar, to be born, film, tolerant, to rain, army.*

The word differences between L2 English and L1 Spanish were always under the deviation cut-off point (under 1), which shows the similarity between both groups.

The words that differed between L1 English and L1 Spanish were the following: to *grow, to study*, *grandmother, to live, to call, song, exam, information, mother, sick, to be born, to visit, academic, to watch, to reply, deep, to pass, to earn, to ask, optimistic, to rain, language, bill, to like, rich, countryside, slow, to fail, woman, brother, to drive, necessary, station, to interest, to speak, disease, bookshop, rain, important.* As in the first case, they were perceived significantly less activating in L1 English, with the notable exception of the word *rich*.

4.2. Research Question 2

The second research question focuses specifically on the ratings of English L2 learners and seeks to find out whether the set of factors under study can form an explanatory model of lexical affectivity, and which have the most effect on variation. To this end, two linear mixed models with valence or arousal scores as dependent variable were conducted. Each model contains the main effects of five fixed effects (modality, word type or intensity, level, contact, and attitudes) and the critical interaction between them (second-level interactions). Item was included as random factor, taking into account the differences of each on the intercepts, but not on the slopes of the fixed factors (it was included initially, but did not improve the analysis).

4.2.1. Valence

The model (9832 observations) was favourable as it explains 47 % of variation ($R^2 = 0.473$). The fixed-effects omnibus test (Table 7) reveals that all factors (except language level) and most interactions are significant. The non-significant interactions were modality*level ($p = 0.881$), modality*contact ($p = 0.133$), and contact*word type ($p = 0.596$). The interaction contact*attitudes ($p = 0.515$) was non-significant too, probably caused by overlapping coefficients.

Table 7. Fixed-effects omnibus test for valence.

	F	Num df	Den df	*p*
modality	37.80664	1	9655	<0.001
level	2.45130	1	9656	0.117
contact	7.71957	1	9723	0.005
word type	208.29474	2	148	<0.001
attitudes	10.93828	1	9681	<0.001
modality*level	0.02240	1	9654	0.881
modality*contact	2.25237	1	9656	0.133
level*contact	6.33849	1	9676	0.012
modality*word type	33.59399	2	9655	<0.001
level*word type	30.58246	2	9655	<0.001
contact*word type	0.51678	2	9717	0.596
modality*attitudes	4.56563	1	9655	0.033
level*attitudes	9.36279	1	9700	0.002
contact*attitudes	0.42343	1	9666	0.515
word type*attitudes	9.49357	2	9683	<0.001

Note. Satterthwaite method for degrees of freedom.

As the averages of the levels of each factor are quite close (Table 8), post hoc tests were further performed. Among level 1 participants only, there was a significant difference between those with more and less contact with the English language and its culture, as well as between those with positive and very positive attitudes ($p = <0.001$ in both cases). Thus, as the level increases (level 2), the effect of these factors is neutralised. Written words are perceived more positively than oral words for both proficiency levels. As far as attitudes are concerned, the difference affects the written words only (but not the oral ones) and rather more the negative words. In both cases, very positive attitudes towards L2 English result in slightly lower scores, which makes them closer to the ones of native English users.

Table 8. Average valence scores.

Word type			Modality		Level		Contact		Attitudes	
positive	neutral	negative	written	oral	level 1	level 2	low	high	positive	very positive
5.34	4.11	2.47	4.07	3.87	3.95	4.00	3.93	4.02	4.03	3.92

4.2.2. Arousal

The model (9818 observations) only explains 17% ($R^2 = 0.173$) of the existing variation, although it resulted in all factors and most interactions being significant (Table 9). The three non-significant interactions involve the attitude factor in all cases, even though it is statistically relevant in isolation.

Table 9. Fixed-effects omnibus test for arousal.

	F	Num df	Den df	*p*
intensity	49.8539	1	153	<0.001
modality	66.4855	1	9646	<0.001
level	30.0533	1	9651	<0.001
contact	4.8937	1	9737	0.027
attitudes	6.3633	1	9686	0.012
intensity*modality	10.4123	1	9645	0.001
intensity*level	26.6599	1	9645	<0.001
modality*level	10.5602	1	9645	0.001
intensity*contact	11.3476	1	9730	<0.001
modality*contact	32.5201	1	9645	<0.001
level*contact	15.3382	1	9688	<0.001
intensity*attitudes	0.0153	1	9684	0.901
modality*attitudes	5.2793	1	9650	0.022
level*attitudes	1.2065	1	9699	0.272
contact*attitudes	1.7326	1	9658	0.188

Note. Satterthwaite method for degrees of freedom.

The mean scores (Table 10) show that written words are more activating than spoken words. In addition, post hoc tests indicate that modality is only relevant among high-contact participants (written $M = 4.51$ vs. oral $M = 4.06$), although its interaction with the other factors is significant. Participants with more language contact, more positive attitudes, and regardless of language level are more likely to perceive higher activation.

Participants with a higher proficiency perceive lower arousal scores, especially in the case of high-arousal words in the oral modality. As in the case of valence, these data suggest that they are closer to L1 English.

Table 10. Average arousal scores.

Word intensity		Modality		Level		Contact		Attitudes	
low	high	written	oral	level 1	level 2	low	high	positive	very positive
3.83	4.63	4.36	4.10	4.32	4.14	4.19	4.28	4.17	4.30

5. DISCUSSION

The first question examined how Spanish learners of L2 English perceive basic words on the affective dimensions of valence and arousal and whether their L2 perceptions (written ratings) differ with respect to the target language (L1 English) and the original language (L1 Spanish).

In this study, the English L2 learners, despite being in a non-immersion context, perceive the words and, therefore, the language they are learning more emotionally (more extreme valence scores for positive and negative words, and higher activation scores) than English L1 users. There are studies that indeed report a higher emotionality of the additional (L2) language and that attribute this a priori anomalous behaviour to acculturation processes, the degree of socialisation in the L2 and its frequency of use (Dewaele, 2008), the context and age of L2 learning (Puntoni et al., 2009; De Houwer, 2018), or to the learners' language proficiency (Altarriba & Basnight-Brown, 2011). However, although the results of this study partially agree, the reasons behind this phenomenon are not the same, as discussed later.

By focusing on studies with similar approaches and objectives, these results generally coincide with those reported by Blanco Canales and Hernández Muñoz (2023), with Greek, American and Brazilian learners of L2 Spanish, and those of Vélez-Uribe and Roselli (2019), with Latino students, but highly competent in L2 English. Nevertheless, they differ from those of Hernández Muñoz and Blanco Canales (2023) with Chinese learners of Spanish; Garrido and Prada (2018) with Portuguese learners of English; and Imbault et al. (2021), also with learners of English from different nationalities. Thus, the enormous diversity of the phenomenon makes it difficult to find a clear explanation. In fact, although there are similarities between studies, the behaviour of each group of participants and the factors that determine how this behaviour may vary need a specific interpretation according to the linguistic and socio-cultural context under study.

Another relevant finding is that negative words are perceived as more negative in L2 English than in L1 English, something that contrasts with the general tendency towards the neutralisation of negativity in L2s (cf., Hernández Muñoz & Blanco Canales, 2023). Furthermore, English L2 learners perceive (subjectively rate) the lexical repertoire in the L2 more similarly to Spanish native speakers than to English native speakers. This suggests that (Spanish) learners of L2 English conceptualise, represent, and perceive the lexicon in the same way as they do in L1 Spanish. This study argues that the learners' mother tongue (L1 Spanish) exerts a notable influence and that the English L2 words are incorporated into the mental lexicon through L1 translations that convey both their conceptual value and their emotional connotations. It is the learners' L1 that determines the assignment of affective values to the new lexicon, something more related to a case of emotional transfer than a new emotional construction, at least in the interlanguage stage. This hypothesis is reinforced by some neuroimaging studies which suggest that there is a strong overlap in the neural activation of L1 and L2 words in bilinguals (Rodríguez-Fornells et al., 2002; Marian et al., 2003; Martin et al., 2009). Thus, the understanding of a word in L2 and the knowledge of its translation in L1 could be sufficient to produce similar affective behaviours and evaluations, since through translation the word is connected to conceptual memory (Pavlenko, 2008a, 2012, 2014).

The differences between the L1s under study (English and Spanish) are even more pronounced. The affectivity of the lexicon in English is significantly lower than in Spanish, as the words were rated as less positive and negative on the valence dimension and as less activating on arousal. This is in line with the idea that languages and cultures shape the emotional space differently (Pavlenko, 2008a, 2012, 2014). The repertoire of emotional terms (concepts) available in each language, as well as their semantic-affective representation, has specific properties. Each culture and linguistic community conceptualises emotions according to a set of cultural scripts that reflect how we feel, how we express our feelings, and how we think about our own and others' emotions, which in turn is manifested in the lexical, grammatical or discursive features of each language (Wierzbicka, 1992, 1994, 1999, 2015; Pavlenko, 2005, 2014). In the present study it is clearly shown how these cultural scripts permeate the lexicon, endowing it with a language-specific emotional charge (less positive and activating in English than in Spanish). As the results suggest, the L2 is constructed from the same scripts as the L1.

The second question focused on English L2 learners only and the factors which have the most significant effect on their perceptual process. Although the two mixed models (valence and arousal) were significant, the factors (except for modality) do not seem to modulate valence and arousal perception in the same way.

In terms of modality perception, written words are always more positive and activating than words perceived through the oral modality. As similar studies argue (Blanco Canales, 2023), in many languages, the written modality tends to be more emotional due to the prestige of the written register. The evocative power of the written word may indeed be accentuated in formal learning contexts and thus have led students in this case to overload the written words with positivity and intensity. Other studies did not find an effect of sensory modality or significant interaction between modality and lexical word type (Ayçiçeği-Dinn & Caldwell-Harris, 2004; Vélez-Uribe & Roselli, 2019). Furthermore, the written words are the ones with the largest variance, as they are affected by participants' attitudes (more positive attitudes, higher positivity) and contact (more contact, higher arousal), but not by language level. In the oral modality, behaviours are rather homogeneous.

With regard to English L2 level, higher language proficiency implies neutralisation of the effect of contact and attitudes in valence, and closer approximation to native speakers in arousal (lower scores). Thus, language proficiency emerges as an important factor in the incorporation of affective values, although the difference in mean scores is minimal. Numerous studies identify language proficiency as a determining factor (Degner et al., 2012). They point out that the difference in emotionality between L1 and L2 decreases with higher proficiency and thus balanced bilingualism (Ferré et al., 2010; Altarriba & Basnight-Brown, 2011; Eilola & Halvenka, 2011). In this work, the results are not so conclusive and only a slight relationship between L2 proficiency and approximation to affective values of the L1 can be pointed out. It is possible that this relationship is due to the fact that higher L2 proficiency necessarily implies more contact with the L2 and more affective experiences in the target language context (Dewaele, 2004; Caldwell-Harris et al., 2015).

Contact with the target language and culture leads to higher scores for both valence and activation at the lowest proficiency level and in the written modality only. Although contact reaches statistical significance in the analyses, it cannot be considered as a revealing factor of learners' behaviour. Possibly this is because the Anglo-Saxon culture holds sway over all and to some extent neutralises the possible influence of relations with the sociocultural environment of the target language, despite the differences in learners' experiences, travel and contacts in this context. This factor may only have a real leverage effect when it comes to processes of cultural immersion or continuous and highly relevant (professional, personal) relationships (see Pavlenko, 2012, for a review).

Attitudes influence valence on some occasions, with more positive attitudes generating lower scores (thus closer to English native speakers) for negative and written words and at lower proficiency levels. On the arousal dimension, in general, more positive attitudes result in higher activation scores, meaning more distance from English native speakers and more similarity to their mother tongue (L1 Spanish). Unsurprisingly, English L2 learners are closer to English native speakers in valence—a cognitive and representational dimension in nature—than in arousal, which is characterised as a more physiological and perceptual dimension.

6. CONCLUSIONS

The primary aim of this paper was to analyse the affectivity of basic lexical concepts in L2 English and compare it with the L1 referents (L1 English and L1 Spanish). In line with the emotionality pattern found in other works, this study asked whether the L2 would show a certain emotional disadvantage, given that the Spanish participants of L2 English were in a non-immersion learning context.

On the one hand, the perception of words in L2 English is more positive and more activating compared to L1 English. On the other hand, English learners perceive the L2 words with the same affective charge as native Spanish speakers do. Although learners perceive English L2 vocabulary more intensely than English L1 users, it is argued that this pattern is not due to a real construction of the emotional space in the target L2, but rather to the transfer of connotative values from participants' L1 Spanish to their L2 English. Thus, in the emotional configuration of the L2 and in the absence of the sociocultural and affective experiences that permeate language, the learners' mother tongue imposes its own affective values. Consequently, L2 words are incorporated with predetermined affective information, producing a dissociation between cognition and emotion.

Narrowing the focus to L2 English, although the influence of the factors under study is rather discrete, the results show that higher proficiency in and more positive attitudes towards the target language make the learners' valence and arousal evaluations to be more moderate and thus come closer to those of native speakers of English.

In the light of these results, it is questionable to what extent L2 learners' high valence and arousal word ratings can be considered a reflection of a felt emotion in the target language. It is hypothesised that, in the learners' interlanguage, higher word ratings in the affective dimensions do not always mean more emotionality. Instead, emotionality in the L2 should mean an approximation to the native representations of the target language, which may sometimes involve lowering the emotional values attributed to the words. This is the case of the Spanish learners of English in this study, for whom moving closer to the target English language means lowering the values with respect to Spanish. The L2 learning process, therefore, involves readjusting the emotional content to make it meaningful in the target language. It is necessary to carry out further studies along these lines, using different methodological and analytical approaches, which will enable the hypothesis to be explored in more depth.

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APPENDIX

English word list

academic	optimistic	boss	institute	shirt	to grow
amazing	orange	bottle	invitation	size	to guess
ancient	perfect	breakfast	island	sleep	to hate
angry	poor	brother	job	song	to have
automatic	quiet	bus	journey	soup	to have breakfast
bald	red	butcher's	joy	sport	to hear
beautiful	rich	cake	key	stairs	to hurt
big	sad	card	language	station	to interest
black	safe	cheese	leaf	stomach	to invite
blonde	selfish	child	love	summer	to know
blue	serious	chocolate	luck	sun	to learn
bored	short	cinema	message	swimming pool	to leave
brown	shy	city	minister	tale	to like
cheerful	sick	coffee	mistake	thirst	to listen
classic	single	concert	money	town	to live
closed	slow	countryside	moon	trip	to look
cosmopolitan	small	couple	morning	unemployment	to love
dark	smart	course	mother	walk	to matter
deep	sociable	customer	mouth	war	to need
different	Spanish	danger	nature	water	to order
dirty	straight	darkness	neighbour	widow	to paint
easy	strong	death	noise	wind	to pass
fast	thin	depression	onion	wine	to pay
fat	tired	director	pain	winter	to practice
favourite	tolerant	disease	partner	woman	to rain
foreign	tourist	dish	party	worker	to read
free	typical	dog	peace	cold	to repeat
friendly	ugly	emergency	pencil	to answer	to reply
full	unique	exam	people	to ask	to return
generous	useful	factory	perfume	to be born	to run
good	usual	fear	pharmacy	to book	to search
green	white	fever	photo	to bring	to sell
grey	width	film	piano	to buy	to send
handsome	yellow	finger	poetry	to call	to sing
hard	activity	flat	police	to change	to snow
healthy	advertising	flower	police station	to clean	to speak
hot	age	friend	politician	to cook	to stroll

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important	air	fruit	politics	to cost	to study
inside	alcohol	game	power	to cross	to swim
interesting	ambulance	government	present	to dance	to touch
kind	argument	grandmother	price	to die	to travel
low	army	group	pub	to draw	to turn
modern	baby	gym	question	to drink	to understand
narrow	back	hair	rain	to drive	to visit
necessary	bag	head	restaurant	to earn	to walk
nervous	beach	hospital	sadness	to eat	to wash
new	beer	hunger	salad	to end	to watch
nice	bill	ice cream	schedule	to fail	to weigh
old	birthday	identity	science	to finish	to work
open	bookshop	information	ship	to give (a gift)	to write