



Article scientifique

Article

2025

Published version

Open Access

This is the published version of the publication, made available in accordance with the publisher's policy.

---

## The meaning of 'frustration' across languages

---

Soriano, Cristina; Ogarkova, Anna

### How to cite

SORIANO, Cristina, OGARKOVA, Anna. The meaning of 'frustration' across languages. In: Language and Cognition, 2025, vol. 17, n° e16, p. 1–21. doi: 10.1017/langcog.2024.50

This publication URL: <https://archive-ouverte.unige.ch/unige:182650>

Publication DOI: [10.1017/langcog.2024.50](https://doi.org/10.1017/langcog.2024.50)

## ARTICLE

# The meaning of ‘frustration’ across languages

Cristina Soriano  and Anna Ogarkova

Swiss Center for Affective Sciences, University of Geneva, Geneva, Switzerland

**Corresponding author:** Cristina Soriano; Email: [Cristina.Soriano@unige.ch](mailto:Cristina.Soriano@unige.ch)

(Received 10 October 2023; Revised 22 May 2024; Accepted 25 July 2024)

### Abstract

Semantic equivalence in the affective domain is always a matter of degree, even for the words that may seem uncontroversial. For example, a word may be quoted in dictionaries as the semantic equivalent of another word and be used in practice as its most frequent translation equivalent, and yet those two words may significantly differ in meaning. This study focuses on one such case – that of the English term *frustration* and its cognates in Spanish (*frustración*), French (*frustration*) and German (*Frustration*). Using data from corpora and self-report, we find that, while frustration terms in Spanish, French and German reflect a cross-culturally stable type of low-power anger, or can denote affective experiences other than anger, English *frustration* refers to a prototypical anger experience characterized by high power. Converging evidence is presented from two psycholinguistic and two linguistic studies employing elicited and observational data. We offer a possible explanation for the observed semantic differences based on psychological appraisal theory and cross-cultural psychology. The novelties and limitations of our findings are discussed, along with their implications for researchers in the affective sciences.

**Keywords:** emotion terms; semantic equivalence; corpus; metaphor; frustration

## 1. Introduction

Linguistics is fundamental for the study of emotion. The language we use to talk about emotion provides valuable information about affective experience itself (see Soriano, 2022 for an overview of affective meaning in language). One important vantage point in the study of emotion is the lexicon, because emotion words tell us about the ways different lingual communities around the world conceptualize emotional experiences.

The number and meaning of emotion words can greatly vary from language to language, suggesting a fair amount of variation in the ways different communities encode their affective experiences. Quantitatively, differences can be observed between sizeable (ca. 400–2,000 words) emotion lexicons catalogued in contemporary languages like English (Russell, 1980; Wallace & Carson, 1973), Dutch (Hoekstra, 1986), Chinese

(Boucher, 1979; Zheng et al., 2023) or Czech (Slaměník & Hurychová, 2006) and considerably smaller affective vocabularies, typically counting mere dozens of lexemes, documented in languages such as Dalabon (Ponsonnet, 2014), Palauan (Smith & Tkel-Sbal, 1995) or Wolenian (Lutz, 1982; for further examples, see Ogarkova, 2021, p. 914). Likewise, in some languages, specific areas of the affective space may be either hyper- or hypocognized (Levy, 1973) – that is, have either multiple or very scarce, if any, labels denoting nuances of a specific emotional experience (Li et al., 2004; Russell, 1991a; Shaver et al., 1992). Furthermore, there are also numerous accounts of lexical lacunae, or emotion words without one-word translation in other languages, like German *Sehnsucht* (Scheibe et al., 2011),<sup>1</sup> Greek *stenahoria* and *ypohreosi* (Panayiotou, 2004), Portuguese *saudade* (Neto & Mullet, 2014) or Japanese *amae* (Niiya et al., 2006). All these observations suggest the existence of affective experiences that are significantly more salient in some communities than in others.

Qualitatively, translation equivalence of emotion words across languages is also known to be a matter of degree (Pavlenko, 2008). For example, seemingly uncontroversial translation-equivalents, such as English *shame* and Spanish *vergüenza*, were reported to have important differences in meaning (Hurtado de Mendoza et al., 2010), suggesting that the indigenous concepts denoted by those terms are not equivalent. Sometimes, such semantic differences can be traced back to cultural traits, as with ‘happiness’ in English and Japanese (Ishii, 2013), or ‘shame’ across cultures (Silfver et al., 2013). Cultural profiles can also explain semantic differences within the same language as spoken in different regions, as with the term *orgoglio* (‘pride’) in southern and northern Italy (Mortillaro et al., 2013), or *orgulho* (‘pride’) and *raiva* (‘anger’) in European and Brazilian Portuguese (Soares da Silva, 2020, 2021, 2022).

While most previous studies on semantic similarities and differences in the meanings of translation equivalents have focused on comparisons of emotion words in two (or, less frequently, several) languages, one area that has rarely been tapped upon is the meaning of emotion cognates – that is, emotion words from different languages that, stemming from a common origin, have retained similar spellings, pronunciations and meanings (e.g., English *joy* vs. French *joie*). Among the few relevant studies, Soriano et al. (2015) found that the French word *surprise* refers to an emotional experience that is comparatively more sudden, more expressive and more short-lived than the one denoted by English *surprise*. Likewise, in a comparative analysis of English *despair* and Spanish *desesperación*, Alonso-Arbiol et al. (2013) established that, while the former appears to be a low arousal emotion, Spanish *desesperación* is high in arousal.

The issue of identifying differences in the meanings of cognate emotion terms is not trivial because, in emotion psychology, there is frequently a tacit assumption that cognate emotions words would be best translation equivalents, and emotion

<sup>1</sup>In keeping with the convention in cognitive linguistics, in this article, specific words from a given language are written in italics (*Sehnsucht*) and conceptual categories in small caps (ANGER). In addition, quotation marks are used when an emotion word is meant to designate the variants of that word in different languages (e.g., ‘frustration’ to refer to English *frustration* and its translation-equivalent terms in French, Spanish, and German). Normal font is used to refer to an emotion as an experience rather than a concept (e.g., ‘Anger in general is known to induce heat and redness’); single quotation marks are used for the approximate translation into English of a vernacular term (e.g., *orgoglio*, ‘pride’).

researchers frequently rely on such dictionary translations in their experimental or conceptual work. However, in practice, cognate terms may not refer to the same kind of affective experience, which may undermine the validity of the intended investigation.

To address this concern and to fill the aforementioned gap in research on emotion cognates, this study explores the interesting case of English *frustration* compared to its cognates in Spanish (*frustración*), French (*frustration*) and German (*Frustration*)<sup>2</sup>. What makes this case particularly interesting is that, according to several linguistic accounts, English FRUSTRATION may be a rather unique concept (Besemeres & Wierzbicka, 2009; Wierzbicka, 1999). As argued by Anna Wierzbicka (1999), ‘... *frustration* [sic] is a highly culture-specific concept, very characteristic of modern Anglo culture, with its emphasis on goals, plans, and expected achievements’ (p. 72). This specificity of English *frustration* seems to be supported by its untranslatability into Greek (Panayiotou, 2004) or Russian (Pavlenko, 2008) and the claim that, in languages other than English, frustration ‘exists only as a relatively recent loan from English (*Frustration* in German, *frustracja* in Polish, *frustracija* in Russian, *frustrasi* in Bahasa Indonesia, and so on)’ (Wierzbicka, 1999, p. 72).

And yet, according to the *Cambridge* and *Collins* bilingual dictionaries,<sup>3</sup> as well as the online neural translator *DeepL*,<sup>4</sup> the translation of English *frustration* into Spanish, French and German seems fairly straightforward, since cognate terms are available (*frustración*, *frustration* and *Frustration*, respectively); moreover, they are listed as first translation equivalents of the English term. In addition, as revealed by the *Europarl* parallel corpus (around 60 million words from European Parliament proceedings) (Koehn, 2005), using the OPUS automatic word alignment search engine<sup>5</sup> (Tiedemann, 2012), Spanish *frustración*, French *frustration* and German *Frustration* are also the most frequent translation equivalents of English *frustration* (see Table 1).

So here the question arises: is the meaning of ‘frustration’ the same in these languages? What is the extent of the alleged specificity of English *frustration*? Or, in other words, in spite of them being translation equivalents, does English *frustration* differ significantly in meaning from its cognate terms in Spanish, French and German?

In what follows, we explore these questions in two psycholinguistic (Studies 1 and 2) and two linguistic studies (Studies 3 and 4) employing elicitation and observational methods, respectively. First, we present a psycholinguistic study

<sup>2</sup>As pointed out by one of our anonymous reviewers, in German we also find the term *Frust*, very similar in meaning to *Frustration*, but not identical. *Frust* is a more colloquial and recent term that refers only to the emotion, while German *Frustration* – and its formally equivalent terms in the other three languages – can refer both to the emotion and to the action that causes it. A full account of the representation of the general concept of FRUSTRATION in German would require a characterization of similarities and differences between *Frust* and *Frustration*. This, however, exceeds the scope of our study that aims to investigate meaning differences between English *frustration* and its exact formally equivalent terms, which are also the most frequent translation equivalents in Spanish, French and German.

<sup>3</sup>The *Cambridge English Dictionary*, <https://dictionary.cambridge.org>; *Collins Dictionary*, <https://www.collinsdictionary.com>. However, the *Cambridge English-German* dictionary offered ‘Vereitlung’ (‘thwarting’) as first choice instead.

<sup>4</sup>*DeepL*, <https://www.deepl.com/translator>.

<sup>5</sup>*Europarl*, <https://opus.nlpl.eu/Europarl.php>; OPUS, <https://opus.nlpl.eu/lex.php>. Results from automatic word alignment.

**Table 1.** Translations of English frustration in Europarl corpus (OPUS search engine)

Spanish	<i>n</i>	French	<i>n</i>	German	<i>n</i>
<i>frustración</i>	395	<i>frustration</i>	351	<i>Frustration</i>	175
<i>frustraciones</i>	30	<i>frustrations</i>	48	<i>Enttäuschung</i>	87
				<i>Frust</i>	27
				<i>Frustrationen</i>	26
				<i>frustriert</i>	18

*n* = number of occurrences in corpus.

designed to identify the most typical types of ANGER in different languages (Study 1). Second, we present the semantic profile of the different ‘frustration’ words based on self-reported ratings of the features of those words using the GRID instrument (Fontaine et al., 2013a) (Study 2). Next, we present two types of corpus-based data: an analysis of the metaphorical profiles (Ogarkova & Soriano, 2014) of ‘frustration’ in English and Spanish (Study 3) and an analysis of sentence co-occurrences and usage-based synonyms of ‘frustration’ in the four target languages (Study 4). We will follow up with a discussion of the findings and their possible motivation and conclude with an account of the article’s limitations and an overview of the implications of our findings for emotion psychology.

2. Study 1 (emotion labeling)

In this section, we present unpublished results from an earlier study (Ogarkova et al., 2012) designed to investigate the centrality of different ANGER terms in different languages. The study adopted an elicitation approach and requested native speakers of different languages to label the emotion they would feel in a number of proposed scenarios. Different scenarios were built using a facet-approach (Elison, 2005) to represent varied situations susceptible of eliciting one of four types of conflict-related emotions – namely, anger, shame, guilt and pride. We report results about anger only.

Native speakers of English (*n* = 11), Spanish (*n* = 17), French (*n* = 12) and German (*n* = 17) read five anger-eliciting scenarios and, for each of them, reported as many words in their language as they wanted in the grammatical class of their choice (nouns, adjectives, or both) to name what they would feel in those situations. The scenarios reflected different combinations of the ‘facets’ of an anger scene, such as who the wrongdoer and the disadvantaged party are (e.g., the emoter/another person/nobody in particular), the nature of the anger-eliciting event (e.g., one-time/repeated) and whether or not the wrongdoing was intentional. For instance, a scenario with no identifiable human wrongdoer was ‘My computer crashed and I was not able to finish the work to meet a crucial deadline’. Table 2 reports the most frequent words in the ANGER family mentioned by the participants in each language, collapsing across scenarios.

As shown in Table 2, the most frequently mentioned words were words typical for the category ANGER in each language: *anger* in English, *colère* in French, *Wut* in German and *rabia* in Spanish. However, ‘frustration’ was significantly more frequently mentioned in English than in any of the other three languages. In fact, English *frustration* was mentioned just as frequently as *angry* (no significant statistical difference with *angry*,  $\chi^2(1) = 0.0212, p = \text{n.s.}$ ), whereas ‘frustration’ in the other three languages was mentioned significantly less frequently than the top ANGER word

**Table 2.** Words elicited in an emotion-labeling task with anger scenarios (excerpt)

Spanish	<i>n</i>	French	<i>n</i>	German	<i>n</i>	English	<i>n</i>
<b>rabia</b>	<b>30</b>	<b>colère</b>	<b>21</b>	<b>Wut</b>	<b>33</b>	<b>angry</b>	<b>24</b>
enfado	18	enervement	15	Ärger	25	<b>frustrated</b>	<b>23</b>
indignación	15	agacement	10	<b>Frustration</b>	<b>9</b>	annoyed	23
cabreo	11	rage	10	genervt	6	irritation	8
ira	8	indignation	6	Empörung	6	insulted	5
molesto	7	irritation	5	ungehalten	4	rage	4
<b>frustración</b>	<b>6</b>	<b>frustration</b>	<b>4</b>	beleidigt	4	furios	3
agresión	3	furieux	3	Unmut	3	indignation	3
disgustado	3	offense	2	aufgebracht	3	mad	3
fastidio	3	haine	2	Verdross	2	resentment	3
furioso	3	vexation	2	Zorn	2	exasperation	2
harto	3	camouflet	1	Aggression	2	aggravated	1
...	1	...	1	...	1	...	1

*n* = number of observations collapsing across grammatical class (words exhibit the most prevalent grammatical class observed for the root). In each language, the most frequent term and the ‘frustration’ word are highlighted in bold.

(Spanish,  $\chi^2(1) = 16, p \leq 0.0001$ ; French,  $\chi^2(1) = 11.56, p = 0.0007$ ; German,  $\chi^2(1) = 13.714, p = 0.0002$ ).

These findings are congruent with several previous observations on the cognitive availability of English *frustration*. In a free-listing task where English-speaking participants were asked to write down salient exemplars of the category EMOTION, *frustration* was the 11th most frequent term among 383 words listed by the respondents (Fehr & Russell, 1984, p. 469). In addition to being a typical emotion word, Russell and Fehr (1994, p. 191) also reported *frustration* to be the most frequently reported term in the category ANGER in a free-listing task (mentioned by a third of a sample of 317 respondents).

Corpus-based analyses of language use provide congruent results revealing the salience of ‘frustration’ in English compared to other languages. ‘Frustration’ seems to be a more common word in English than in Spanish, French or German. A search for the terms in the comparable variants of the *TenTen* corpora<sup>6</sup> (Jakubíček et al., 2013), with over 10 billion words each, using Sketch Engine (Kilgariff et al., 2014) as search engine, reveals English *frustration* to be more frequently used than its cognate counterparts (Table 3).

Together, the observations reported in this section suggest that ‘frustration’ is a more salient ANGER term in English compared to Spanish, French and German. The relative distance to typical ANGER words in each language also suggests that English *frustration* is closer in meaning to English *anger* than the cognate ‘frustration’ terms

**Table 3.** Frequency of term ‘frustration’ in four languages in comparable *TenTen* corpora

Language (corpus)	Occurrences per million tokens
English (enTenTen20)	12.19
Spanish (esTenTen18)	9.32
French (frTenTen20)	7.6
German (deTenTen20)	2.24

<sup>6</sup>*TenTen Corpora*, <https://www.sketchengine.eu/documentation/tenten-corpora/>.

to typical ANGER words in the other three languages. Congruent results will be presented in the following section concerning the GRID study.

3. Study 2 (GRID profiles)

In this section, we present unpublished results of a study within the large cross-cultural framework of the GRID project (Fontaine et al., 2013a). The GRID is an international research collaboration led by psychologists and linguists to investigate the meaning of emotion words and the structure of affective space across languages and cultures. Using the GRID questionnaire, native speakers are asked to rate the extent to which a series of proposed features are part of the meaning of emotion words in their language. The features are extracted from a variety of psychology theories of emotion and are grouped under ‘emotion components’ (the different types of experience that together ‘compose’ or give rise to an emotional episode) – namely, cognitive appraisals, physiological changes, expressions (facial, gestural, etc.), action tendencies and subjective feelings. The average ratings across participants in a given language, or across languages, enable researchers to establish semantic profiles for the terms, as well as to explore similarities and differences among them, their emotion component structure, and the dimensionality of the affective space (Fontaine et al., 2013b).

The original GRID study investigated 24 emotion terms selected to represent all areas of affective space (Fontaine et al., 2013b). As a follow-up, we developed a more targeted instrument (ELIN) to investigate types of emotion *in the same family*, and more concretely types of four conflict-relevant emotion categories: ANGER, SHAME, GUILT and PRIDE (Soriano et al., 2013). The ELIN-GRID study was conducted in several languages; here, we report the findings regarding the representation of ANGER words specifically in Spanish ( $n = 83$ ), French ( $n = 91$ ), German ( $n = 44$ ) and English ( $n = 36$ ).

The ELIN-GRID pool of words in each language is shown in Table 4. These words ( $n = 28$ ) were selected on the basis of the elicitation study reported in Section 2 (Ogarkova et al., 2012), choosing the most frequently listed emotion words in each language and favoring cognate terms whose meaning we were interested in, like ‘frustration’. Their grammatical class reflected the most frequently observed for that lemma in the elicitation study.

The words were rated on 95 features pertaining to all emotion components, in addition to other sociocultural variables like degree of social acceptability, or frequency of the affective experience labeled by the word (see Soriano et al., 2013 for

Table 4. ANGER words investigated in the ELIN-GRID study in English, Spanish, French and German

English	Spanish	French	German
<i>angry</i>	<i>rabia</i>	<i>colère</i>	<i>Wut</i>
<i>frustrated</i>	<i>indignación</i>	<i>enervement</i>	<i>Ärger</i>
<i>annoyed</i>	<i>ira</i>	<i>agacement</i>	<i>genervt</i>
<i>irritation</i>	<i>molesto</i>	<i>rage</i>	<i>Empörung</i>
<i>rage</i>	<i>frustración</i>	<i>indignation</i>	<i>ungehalten</i>
<i>furious</i>	<i>irritación</i>	<i>irritation</i>	<i>Zorn</i>
<i>indignation</i>		<i>frustration</i>	<i>Frustration</i>
<i>resentment</i>			



**Table 5.** HCA of ANGER words per language based on ELIN-GRID feature profiles

	Cluster 1	Cluster 2
Sp	<i>rabia, irritación, ira, indignación, molesto</i>	<i>frustración</i>
Fr	<i>colère, agacement, énervement, rage, indignation, irritation</i>	<b>frustration</b>
Ge	<i>Wut, Ärger, Empörung, Zorn, genervt, ungehalten</i>	<b>Frustration</b>
En	<i>angry, annoyed, furious, <b>frustrated</b>, irritation, rage, indignation</i>	<i>resentment</i>

En = English, Fr = French, Ge = German, Sp = Spanish. ‘Frustration’ words in bold.

details). Each feature was rated on a nine-point Likert-like scale ranging from 1 (‘extremely unlikely’) to 9 (‘extremely likely’), where five occupied the middle, neutral point of the scale (‘neither likely, nor unlikely’). Average ratings per language were mean-centered for comparison across samples (to control for differences in scale use).

To analyze the data, first a hierarchical cluster analysis (HCA) was run to investigate the internal similarity structure of each language (see Table 5). The results showed that, in all languages but English, ‘frustration’ constitutes a cluster of its own, suggesting that the word is different in meaning from the others, which are comparatively closer to one another than they are to ‘frustration’.

A cluster analysis of all samples together, conducted to explore the overall similarity structure of their common space (see Figure 1), confirmed this observation. At the highest level of the dendrogram, two clusters emerged: a small one with four words, including ‘frustration’ in Spanish, French and German plus English *resentment*, and a larger one with the remaining 24 ANGER words. Said differently, English *frustration* clustered with typical ANGER terms in the four languages, such as English *angry* and *annoyed*, Spanish *ira* and *rabia*, French *colère*, or German *Wut*, *Zorn* and *Ärger* (Durst, 2001; Oster, 2014).<sup>7</sup>

A similar pattern emerged from Pearson profile correlations that were calculated to identify the closest terms to ‘frustration’ in each language (Table 6). The results showed that, while the closest synonyms were never the most typical ANGER terms of each language, the proximity of ‘frustration’ to them was greater in English (*angry* 0.746, *annoyed* 0.826) than in Spanish (*ira* 0.271, *rabia* 0.416), French (*colère* 0.590), or German (*Wut* 0.142, *Zorn* 0.406, *Ärger* 0.127).

To further elucidate in what specific ways English *frustration* was different from ‘frustration’ in the other three languages, and which features it shared with typical ANGER terms in the four languages, an ANOVA with cluster means as dependent variables and features as independent variables was run to determine the specific GRID features that differentiated the two clusters. A total of 19 features emerged as significantly differentiating (see Table 7). The greatest contrasts (i.e., features that scored in one direction in one cluster and the opposite direction in the other) indicate that ‘frustration’ in Spanish, French and German is characterized by feelings and expressive behaviors typical of **low power** (feeling weak [#1], exhibiting a slumped bodily posture [#9], lowering the head [#11]) and is more of an individual affair (experienced alone, rather than with other people [#17, 19]). By contrast, English *frustration* and the words in its cluster are characterized by expressive **high-power** behavior (speaking loud [#6] and fast [#7], lifting one’s chin [#10], pushing the chest

<sup>7</sup>Cf. also congruent results about the salience of some of these terms in Studies 1 and 4.



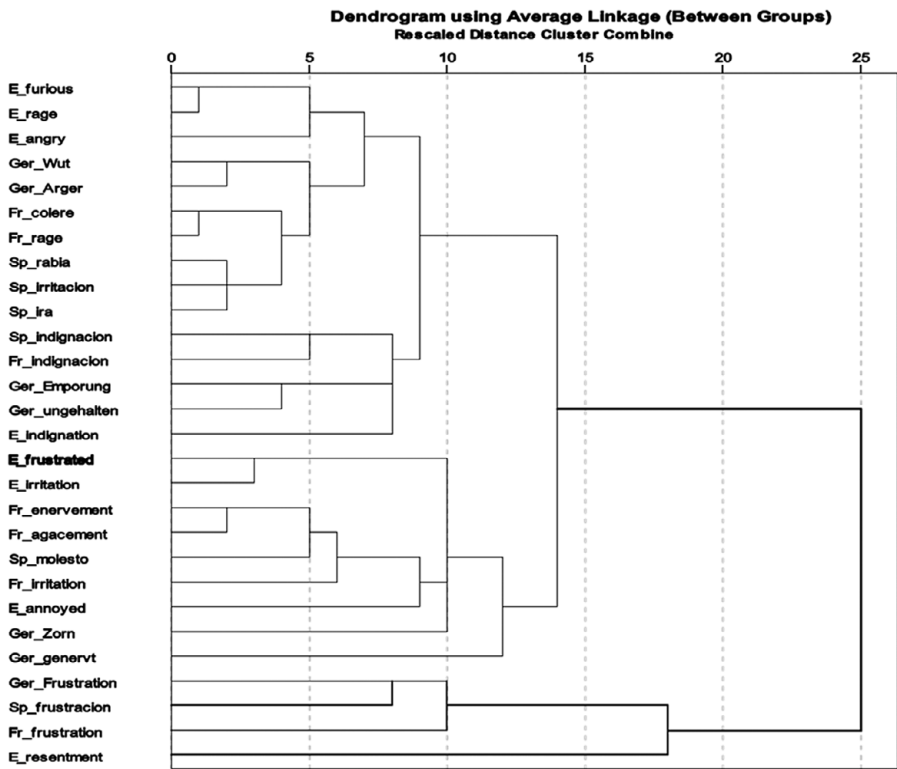


Figure 1. HCA of ANGER words across languages based on ELIN-GRID feature profiles.  
Note: E = English, Fr = French, Ger = German, Sp = Spanish.

Table 6. Pearson profile correlations of ‘frustration’ words with other ANGER words in each language based on ELIN-GRID feature profiles

EN <i>frustrated</i>		SP <i>frustración</i>		FR <i>frustration</i>		GE <i>Frustration</i>	
<i>irritation</i>	0.940	<i>molesto</i>	0.598	<i>irritation</i>	0.784	<i>genervt</i>	0.412
<i>annoyed</i>	0.826	<i>indignación</i>	0.490	<i>agacement</i>	0.686	<i>Zorn</i>	0.406
<b><i>angry</i></b>	<b>0.746</b>	<i>irritación</i>	0.444	<i>ennervement</i>	0.679	<b><i>Wut</i></b>	<b>0.142</b>
<i>furious</i>	0.628	<b><i>rabia</i></b>	<b>0.416</b>	<b><i>colère</i></b>	<b>0.590</b>	<b><i>Ärger</i></b>	<b>0.127</b>
<i>rage</i>	0.603	<b><i>ira</i></b>	<b>0.271</b>	<i>indignation</i>	0.584	<i>Empörung</i>	0.089
<i>resentment</i>	0.578			<i>rage</i>	0.565	<i>ungehalten</i>	−0.026
<i>indignation</i>	0.548						

Note: Correlations of ‘frustration’ words with prototypical anger terms are in bold. EN = English, SP = Spanish, FR = French, GE = German.

forward [#8], exaggerating one’s emotion [#14]) and are more of a social experience (experienced with other people [#17, 18], triggered by a third person [#15]). The existence of another person as agent that causes the emotion [#15] is a prototypical ANGER feature (Ellsworth & Smith, 1988) characterizing only the first cluster of terms in our data. This means that the presence of an external agent doing something wrong is less likely in Spanish, French and German ‘frustration’ than in English.

**Table 7.** Differences between the two overall ANGER clusters based on ELIN-GRID feature profiles (ANOVA)

#	Features	Sig.	M1	M2
1	<b>The person felt weak</b>	<b>0.000</b>	<b>−0.444</b>	<b>0.879</b>
2	The person felt degraded	0.000	0.325	1.318
3	The person felt socially unworthy	0.000	−0.235	0.994
4	The person felt cold	0.000	−1.705	−0.433
5	The person got pale	0.000	−1.187	−0.299
6	<b>The person spoke louder</b>	<b>0.000</b>	<b>1.415</b>	<b>−0.213</b>
7	<b>The person spoke faster</b>	<b>0.000</b>	<b>1.110</b>	<b>−0.265</b>
8	<b>The person pushed her/his chest forward</b>	<b>0.000</b>	<b>0.357</b>	<b>−1.468</b>
9	<b>The person had a slumped bodily posture</b>	<b>0.000</b>	<b>−1.135</b>	<b>0.965</b>
10	<b>The person lifted the chin</b>	<b>0.000</b>	<b>0.419</b>	<b>−1.279</b>
11	<b>The person lowered her/his head</b>	<b>0.000</b>	<b>−1.033</b>	<b>1.207</b>
12	The person wanted to withdraw from people or things	0.000	0.211	1.411
13	The person wanted to be seen, to be in the center of attention	0.000	−0.290	−1.418
14	<b>The person showed her/his emotion more than s/he felt it</b>	<b>0.000</b>	<b>0.124</b>	<b>−0.653</b>
15	<b>The eliciting event was caused by someone inferior in social status</b>	<b>0.000</b>	<b>0.218</b>	<b>−0.500</b>
16	The eliciting event had impact on the person's self-image (that is, on how the person sees her-/himself)	0.000	0.363	1.017
17	<b>The emotion is experienced together with other people</b>	<b>0.000</b>	<b>0.089</b>	<b>−0.731</b>
18	<b>The emotion happens when other people are present</b>	<b>0.000</b>	<b>0.753</b>	<b>−0.018</b>
19	<b>The emotion happens when the person is alone</b>	<b>0.000</b>	<b>−0.250</b>	<b>0.630</b>

Note: Only features significant after Bonferroni correction. M1 = mean cluster 1, M2 = mean cluster 2. Bold for the most differentiating features, where each cluster behaves in opposite ways.

Other differences between both clusters are a matter of degree. In all languages, the person feels disadvantaged in some way (#2), which has an impact on their self-image (#16) and may make the person want to withdraw (#12) and not be seen (#13); but these low-power feelings and behaviors are significantly more typical in Spanish, French and German frustration words than in English. Conversely, confrontation rather than withdrawal may be a more typical response in the English sense of ‘frustration’. Regarding physiology, ‘frustration’ exhibits anger-like symptoms in all languages. Anger in general is known to induce heat and redness (Fetterman et al., 2011), and congruently, the features coldness (#4) and paleness (#5) are rated as atypical of ‘frustration’ in all languages. However, in English, the rejection is significantly stronger.

Together, the feature profile differences reported above suggest that English *frustration* is a better example of prototypical ANGER than its cognate terms in Spanish, French and German. More specifically, the meanings of the cluster of words to which English *frustration* belongs appear to be close to the conceptual prototype of ANGER as suggested in both psychology (Ellsworth & Smith, 1988; Kuppens, 2009; Russell, 1991b; Russell & Fehr, 1989, 1994) and linguistics (Lakoff & Kövecses, 1987; Wierzbicka, 1999, pp. 88–89; see also Fries, 2004; Oster, 2014; Soriano, 2013; Soriano et al., 2013; Weigand, 1998). The ANGER prototype (understood as a broad category, applicable cross-culturally) is an emotion triggered by a stimulus (an event or state of affairs, but typically the actions of an external agent) assessed as bad (e.g., an injustice, an offense) for the person or for relevant others, during which the emoter feels physiologically activated and compelled to oppose the perceived wrongs, often through violence or aggression (e.g., Bender et al., 2007; Fernandez et al., 2014; Ogarkova & Soriano, 2022). From a dimensional point of view, the emotion is characterized as negative, aroused and high in power (e.g., Scherer & Fontaine, 2013).

This high power is one of the most important characteristics of anger, differentiating it from other negative and aroused emotions like fear. The results reported in this section suggest that, unlike its cognates in Spanish, French and German, the English term *frustration* shares more similarity with the prototypical high-power anger experience outlined above.

#### 4. Study 3 (metaphorical profiles)

In this section, we report results from a linguistic observational study of the metaphors used to represent FRUSTRATION in English and Spanish.<sup>8</sup> The study fits within the framework of conceptual metaphor theory (CMT) in cognitive linguistics, which assumes that patterns in figurative language use are indicative of underlying conceptual associations – referred to as *conceptual metaphors* – between conceptual domains. The general claim is that abstract concepts, like emotion concepts, are cognitively represented in terms of more concrete physical experiences like temperature, force or containment (Lakoff, 1993; Lakoff & Kövecses, 1987).

The literature on conceptual metaphors for the representation of ANGER in English and Spanish is abundant (Barcelona, 1988; Kövecses et al., 2015; Lakoff & Kövecses, 1987; Ogarkova & Soriano, 2014; Ogarkova et al., 2018; Soriano, 2003, 2005; Suarez Campos, 2020). Here, we report unpublished results from a study of *types* of ANGER (including ‘frustration’) in those languages (Ogarkova & Soriano, 2014). The study constitutes a quantitative, corpus-based approach to the metaphorical expressions used with seven ANGER words in English (*anger*, *rage*, *fury*, *irritation*, *indignation*, *resentment* and *frustration*) and six such words in Spanish (*ira*, *rabia*, *furia*, *irritación*, *indignación* and *frustración*).<sup>9</sup>

One thousand random Key Word In Context (KWIC) citations were extracted for each word from the *British National Corpus* (BNC) and *Corpus del Español*.<sup>10</sup> When needed to reach that number, additional citations were culled from *the Bank of English* and *Corpus de Referencia del Español Actual* (CREA).<sup>11</sup> The careful manual analysis of these expressions into metaphorical patterns (MP) (Stefanowitsch, 2006), their classification into conceptual metaphors, and the quantification of MP tokens and types resulted in the creation of ‘metaphorical profiles’ for each word (see Ogarkova & Soriano, 2014 for details). The metaphorical profile of a term is composed by the number of metaphorical patterns observed for each conceptual metaphor identified for that term. Since a common inventory of metaphors was observed for all ANGER terms (Ogarkova & Soriano, 2014), the vector of frequencies per term allowed us to statistically explore both commonalities and differences in the way those ANGER types are represented via metaphor.

To explore similarities within each language, we calculated profile correlations of ‘frustration’ with the other terms in English and Spanish separately. As shown in

<sup>8</sup>No data are currently available about French and German. Therefore, Study 3 is narrower in scope than Studies 1, 2, and 4, providing only partial evidence for English and Spanish.

<sup>9</sup>The original study included Russian words too, which are not reported here.

<sup>10</sup>*The British National Corpus*, <http://www.natcorp.ox.ac.uk/>; *Corpus del Español*, <https://www.corpusdelespanol.org/>.

<sup>11</sup>*The Bank of English*, <http://www2.lingsoft.fi/doc/engcg/Bank-of-English.html>; *Corpus de Referencia del Español Actual*, <https://www.rae.es/banco-de-datos/crea>. Additional citations were needed for *indignation* (594), *indignación* (250), *furia* (107), *frustración* (796) and *irritación* (828).

**Table 8.** Pearson profile correlations of ‘frustration’ words with other ANGER words in English and Spanish based on metaphorical profiles

English <i>frustration</i>		Spanish <i>frustración</i>	
<i>anger</i>	0.918	<i>irritación</i>	0.894
<i>irritation</i>	0.908	<i>indignación</i>	0.880
<i>indignation</i>	0.813	<i>rabia</i>	0.823
<i>resentment</i>	0.811	<i>furia</i>	0.688
<i>fury</i>	0.696	<i>ira</i>	0.425
<i>rage</i>	0.674		

Table 8, while English *frustration* enjoyed reasonably high profile correlations with the other six ANGER words in English (above 0.7 in most cases), the highest correlation was found with the word *anger* itself, with an extremely high coefficient (0.918). This means that, in terms of metaphorical behavior, English *anger* and *frustration* behave in the same way. By contrast, in Spanish, *frustración* has a low profile correlation with *ira*, a typical ANGER word and frequent translation of English *anger*. The correlation is better with more moderate forms of anger like *irritación*, *indignación* and *rabia*.

The differences in profile correlations suggest that the metaphors used to talk about *frustration* and *anger* in English are more similar than the metaphors used to talk about *frustración* and *ira* in Spanish. To capture some of these differences we investigated the relative frequency of metaphors for ‘anger’ and ‘frustration’ in English and Spanish<sup>12</sup> (Table 9).

A series of Fisher exact tests (with Bonferroni correction to control for multiple comparisons) revealed interesting contrasts. For example, English *anger* and *frus-*

**Table 9.** Frequency of expressions (*n* tokens) of different metaphorical source domains in the representation of ‘anger’ and ‘frustration’ in English and Spanish

Source domain	English		Spanish	
	<i>anger</i>	<i>frustration</i>	<i>ira</i>	<i>frustración</i>
PRESSURIZED FLUID IN THE BODY	60	43	47	24
HOT FLUID IN THE BODY	23	9	3	0
FIRE	30	3	44	0
OPPONENT IN A STRUGGLE	20	8	25	33
FORCE OF NATURE	10	3	28	0
INSANITY	3	6	34	2
ILLNESS	6	29	5	34
ANIMAL	13	9	22	6
WEAPON	29	4	22	7
Total	194	114	230	106

<sup>12</sup>Our full metaphor inventory contains four categories of metaphors: specific (e.g., ANGER IS FIRE), generic (e.g., ANGER IS A LOCATION), primary (e.g., INTENSITY IS HEAT) and infrequent (e.g., ANGER IS COLD) (see Ogarkova & Soriano, 2014). In this study, for space considerations, statistical analyses were run only on the subset of specific metaphors, namely metaphors that invoke fairly complex scenarios rich in detail and entailments, which can be considered the most characteristic in the metaphorical representation of ANGER.

tration exploit the metaphors OPPONENT (1), FORCE OF NATURE (2) and INSANITY (3) to the same degree ( $p = ns$ ).

- (1) *fight anger down, beset by frustration*
- (2) *wave of anger/frustration, anger/frustration ebb away*
- (3) *beside oneself with anger, insane with frustration*

This is not the case in Spanish, though. In Spanish, *ira* is more associated than *frustration* to FORCE OF NATURE (4) ( $p < 0.001$ ) and INSANITY (5) ( $p < 0.001$ ), whereas *frustration* is more associated with OPPONENT (6) instead ( $p < 0.001$ ). In addition, *ira* is significantly more associated with FIRE (7) ( $p < 0.001$ ) and *frustración* to ILLNESS (8) ( $p < 0.001$ ).

- (4) *relámpagos de ira* ('lightning flashes of anger'), *marea de ira* ('tide of anger')
- (5) *loco de ira* ('mad with anger'), *perder el juicio de ira* ('lose one's senses with anger')
- (6) *combatir la frustración* ('fight frustration'), *dominar la frustración* ('dominate frustration')
- (7) *encender la ira* ('kindle anger'), *arder de ira* ('burn with anger'), *abrasar la ira X* ('anger scorches X')
- (8) *padecer frustración* ('suffer frustration'), *secuela de frustración* ('sequelae of frustration'), *terapia a la frustración* ('therapy for frustration')

The preference of Spanish *ira* for expressions involving INSANITY, FORCE OF NATURE and FIRE and *frustración* for ILLNESS and OPPONENT, underscore their very different nature, more virulent and uncontrolled in the case of *ira*. By contrast, English *frustration* is indistinguishable from English *anger* in the use of intense and virulent source domains like FORCE OF NATURE or INSANITY. To the extent that patterns in metaphorical language can reveal differences in conceptualization – as assumed in CMT – these linguistic differences reveal a different conceptualization of FRUSTRATION in English compared to Spanish, and one that brings English *frustration* comparatively closer than its Spanish counterpart to prototypical ANGER concepts.

## 5. Study 4 (corpus analysis)

Our last study offers a different corpus-based analysis of the representation of 'frustration' across languages. In order to identify the emotion concepts that are semantically similar to 'frustration' in each language, we first looked at near-synonyms of the target words in the thesauruses of the online platform Sketchengine (Kilgariff et al., 2014), which are built on the basis of usage patterns in corpora. A search of the word 'frustration' in the TenTen corpora (Jakubíček et al., 2013) in English (EnTenTen2021), Spanish (EsTenTen18), French (FrTenTen20) and German (GeTenTen20) provided converging evidence for the specificity of English *frustration* discussed so far. As shown in Table 10, the closest synonym of English *frustration* is *anger*; by contrast, in the

**Table 10.** Top five noun synonyms of word ‘frustration’ in the four languages in Sketch Engine thesauruses (TenTen corpora)

English	Spanish	French	German
<i>anger</i>	<i>angustia</i> (‘anguish’)	<i>déception</i> (‘disappointment’)	<i>Unzufriedenheit</i> (‘discontent’)
<i>disappointment</i>	<i>decepción</i> (‘disappointment’)	<i>désespoir</i> (‘despair’)	<i>Frust</i> (‘frustration’)
<i>confusion</i>	<i>desesperación</i> (‘despair’)	<i>incompréhension</i> (‘incomprehension’)	<i>Resignation</i> (‘resignation’)
<i>anxiety</i>	<i>tristeza</i> (‘sadness’)	<i>angoisse</i> (‘anguish’)	<i>Enttäuschung</i> (‘disappointment’)
<i>despair</i>	<i>malestar</i> (‘malaise’)	<i>tristesse</i> (‘sadness’)	<i>Hilflosigkeit</i> (‘helplessness’)

remaining three languages, no ANGER terms were found among the top five synonyms of ‘frustration’; instead, top positions were occupied by words from the SADNESS (e.g., *deception*, *Unzufriedenheit*) or FEAR (e.g., *angustia*) families.

Another approach to explore the representation of ‘frustration’ in the four languages is to look at sentence co-occurrences. Co-occurrence at sentence level can be considered a measure of semantic relatedness. It indicates words that frequently co-occur with the target word in the same sentence. Emotion words of this type are likely to designate affective experiences *coherent* with ‘frustration’. Accordingly, we extracted significant (log-likelihood) sentence co-occurrences for the four ‘frustration’ words from the English, Spanish, French and German News corpora in the Leipzig corpora collection.<sup>13</sup> The results complemented the picture afforded by the Sketchengine thesaurus in the TenTen corpora presented above.

As shown in Table 11, the most frequent emotion co-occurrence of ‘frustration’ in all languages was an ANGER word (*anger*, *rabia*, *colère*, *Wut*); however, in Spanish, French and German, ‘frustration’ co-occurred with a variety of other emotions too (marked in grey cells), whereas, in English, it co-occurred only with *anger*. This suggests that the meaning of the word ‘frustration’ is indeed coherent with ANGER in all languages, but the link is more specific and exclusive in English.

The suggestion that, in languages other than English, ‘frustration’ can refer to emotions other than anger is supported by dictionary definitions of the corresponding lexemes. In the definitions provided by the *Merriam-Webster* (9), *Cambridge* (10) and *Collins* (11) English dictionaries,<sup>14</sup> English *frustration* is explained through ANGER words (*anger* and *annoyance*). If we compare these definitions with the definitions of the verb *frustrate* in the *Oxford English Dictionary* and *Middle English Dictionary* of the University of Michigan,<sup>15</sup> the English term

<sup>13</sup>Leipzig Corpora Collection, <https://corpora.uni-leipzig.de>. English Eng\_news\_2020 (688,052,729 tokens), Spa\_news\_2022 (431,825,821 tokens), Fra\_news\_2022 (134,190,247 tokens), German Deu\_news\_2022 (500,417,630 tokens), news corpus based on material from 2020 and 2022.

<sup>14</sup>*Merriam-Webster Dictionary*, <https://www.merriam-webster.com/dictionary/frustration>; *Cambridge English Dictionary*, <https://dictionary.cambridge.org/dictionary/english>; *Collins English Dictionary*, [www.collinsdictionary.com/dictionary/english](http://www.collinsdictionary.com/dictionary/english).

<sup>15</sup>*Oxford English Dictionary*, [www.oed.com](http://www.oed.com); *Middle English Dictionary of the University of Michigan*, <http://quod.lib.umich.edu/m/middle-english-dictionary/dictionary>.

**Table 11.** Ten most frequent sentence co-occurrences of word ‘frustration’ in English, German, French and Spanish in News corpora of the Leipzig corpora collection

English	Spanish	French	German
<i>expressed</i> (7,452)	<i>rabia</i> (942) (‘anger’)	<i>colère</i> (309) (‘anger’)	<i>Wut</i> (702) (‘anger’)
<i>anger</i> (6,174)	<i>impotencia</i> (776) (‘impotence’)	<i>sentiment</i> (265) (‘feeling’)	<i>und</i> (315) (‘and’)
<i>with</i> (1,198)	<i>enojo</i> (723) (‘anger, annoyance’)	<i>certaine</i> (212) (‘certain’)	<i>verstehe</i> (306) (‘[I] understand’)
<i>expressing</i> (1,192)	<i>ansiedad</i> (587) (‘anxiety’)	<i>la</i> (199) (‘the’)	<i>Enttäuschung</i> (289) (‘disappointment’)
<i>over</i> (1,052)	<i>ira</i> (554) (‘anger, wrath’)	<i>déception</i> (176) (‘disappointment’)	<i>über</i> (276) (‘over’)
<i>express</i> (1,005)	<i>sentimiento</i> (532) [‘feeling’]	<i>face</i> (139) (‘face/ facing’)	<i>Verzweiflung</i> (208) (‘despair’)
<i>lack</i> (999)	<i>tristeza</i> (524) (‘sadness’)	<i>sa</i> (136) (‘his/her’)	<i>Ärger</i> (159) (‘anger’)
<i>of</i> (995)	<i>sentimientos</i> (398) (‘feelings’)	<i>exprimé</i> (117) (‘expressed’)	<i>Ausdruck</i> (129) (‘expression’)
<i>his</i> (966)	<i>tolerancia</i> (391) (‘tolerance’)	<i>intolérance</i> (117) (‘intolerance’)	<i>Verständnis</i> (114) (‘understanding’)
<i>vent</i> (963)	<i>no</i> (366) (‘no’)	<i>comprends</i> (115) (‘understands’)	<i>Traurigkeit</i> (103) (‘sadness’)

Note: Values in brackets indicate co-occurrence frequency counts. Gray cells indicate emotion labels (words directly naming emotions). The most frequent emotion co-occurrence in each language is highlighted in bold.

seems to have specialized in meaning over the years from mere ‘goal-obstruction’ to specifically ‘anger’.<sup>16</sup>

- (9) *Frustration*: ‘The act of frustrating’. *Frustrating*: ‘causing feelings of **anger** and **annoyance**’.
- (10) *Frustration*: ‘the feeling of being **annoyed** or less confident because you cannot achieve what you want, or something that makes you feel like this’.
- (11) *Frustration*: ‘the condition of being frustrated’. *To frustrate*: ‘If something frustrates you, it upsets or **angers** you because you are unable to do anything about the problems it creates’.

By contrast, in Spanish, French and German, ‘frustration’ can refer to other emotions too. The reason is that, according to the definitions in the *DRAE* (12), *Larousse* (13) and *Duden* (14) dictionaries,<sup>17</sup> the meaning of ‘frustration’ in those languages profiles goal obstruction (i.e., thwarting of desires), rather than one specific emotion. When an emotion is mentioned, though, it is not ‘anger’, but rather

<sup>16</sup>MED: *Frustraten*: ‘(a) to prevent (a person from attaining an object), to disappoint; (b) to make (something) ineffectual or useless’. OED: *Frustrate*, v (first attested mid15th C): ‘(1a) To balk, disappoint (a person). (2a) To deprive of effect, render ineffectual; to neutralize, counteract (an effort or effect)’. *Frustration*, n (first attested second half 16th C): ‘The action of frustrating; disappointment; defeat; an instance of this’.

<sup>17</sup>*Diccionario de la Academia Española de la Lengua (DRAE)*, <https://dle.rae.es/>; *Dictionnaire de français Larousse*, <http://www.larousse.fr>; *Duden Wörterbuch*, <https://www.duden.de/woerterbuch>.



emotions in the SADNESS family like ‘dissatisfaction’ (12) or ‘disappointment’ (14). Notions of ‘degradation’ (14) and ‘failure’ (12) are mentioned too.

- (12) *Frustración*: ‘Sentimiento de insatisfacción o fracaso’ (feeling of **dissatisfaction** or **failure**).
- (13) *Frustration*: ‘État de quelqu’un qui est frustré, empêché d’atteindre un but ou de réaliser un désir’ (The state of being frustrated, prevented from achieving a goal or fulfilling a desire).
- (14) *Frustration*: ‘[Erlebnis einer] Enttäuschung und [vermeintlichen] Zurücksetzung durch erzwungenen Verzicht oder versagte Befriedigung’ ([Experience of] **disappointment** and [perceived] **degradation** due to forced renunciation or denied satisfaction).

In sum, a corpus analysis of usage-based synonyms and sentence co-occurrences of the four ‘frustration’ words, corroborated by dictionary evidence, suggests that English *frustration* is semantically related only to the emotion family ANGER, whereas its cognates in the other three languages are also associated with other emotions (in the SADNESS and FEAR families).

## 6. Discussion

Taken together, the observations reported in Sections 2–5 congruently support the claim that ‘frustration’ is uniquely conceptualized in English as compared to Spanish, French or German. The first reason is that it seems to be a comparatively more salient emotion concept. The second reason is that, compared to its cognates, English *frustration* is closer in meaning to prototypical ANGER, characterized by a high-power profile.

But why would English *frustration*, unlike its cognates in the other three languages, come to mean ‘anger’ in English? A look at emotion psychology allows us to explain this process. According to psychology appraisal theory (e.g., Ellsworth, 2013; Lazarus, 1991; Scherer, 2001, 2009), different emotions are the result of different configurations of appraisals, or cognitive assessments. Among the key appraisals necessary to experience emotion, we find ‘goal congruence’, or the assessment of whether a particular event or stimulus supports or else blocks our goals (i.e., whether the emotion-eliciting event is ‘goal-conducive’ vs. ‘goal-obstructive’). Typically, appraisals of goal-conduciveness lead to positive emotions, whereas appraisals of goal-obstructiveness lead to negative ones (cf. Scherer & Moors, 2019). ‘Goal-obstruction’ is what the term *frustration* originally referred to: being impeded or blocked at something<sup>18</sup>. This sense is still retained in the technical use of the term *frustration* in psychology (Berkowitz, 1989, 2009).

According to Klaus Scherer’s CPM appraisal theory (Scherer, 1984, 2001), at a subsequent stage in the process, the brain also engages in another appraisal: our coping potential vis-à-vis the event, that is, our capacity to deal with (e.g., to adjust to

<sup>18</sup>The current affective meaning (what one feels while being impeded or blocked) can be considered a metonymic extension of it (via EFFECT FOR CAUSE). We thank one of our anonymous reviewers for this observation.

or to change) the event or its consequences. In cases of goal-obstruction, an appraisal of high coping-potential leads to anger, and an appraisal of low coping-potential leads to sadness or fear.<sup>19</sup> To put it simply, in cases where something happens that is bad for us, we typically feel anger if we appraise that we can do something about it, and we feel sadness or fear if we appraise that we cannot.

This means that the English word *frustration*, whose meaning originally profiled goal-obstruction only and was emotion-agnostic, incorporated at some point an additional nuance of *high* coping-potential and became biased toward a specific type of emotion: anger. In the other languages, it has remained rooted in goal-obstruction only; therefore, 'frustration' in Spanish, English and German can refer both to ANGER (high coping potential) or to SADNESS and FEAR (low coping potential), or simply to underspecified negative affect (goal-obstruction, as shown in Study 4). What the GRID results in Study 2 revealed as well is that, when Spanish, French and German cognates do refer to ANGER, it is to a version with a low-power profile, that is, to a less prototypical form of this emotion.

But why is high coping potential, and therefore anger, salient only in the English meaning of 'frustration'? Since cognitive appraisal preferences may be affected by culture (Bender et al., 2007, p. 199), a possible explanation may be found in the cultural traits of influential English-speaking communities like the UK and USA. According to Wierzbicka (1999), Anglo-Saxon cultures are characterized by 'achievement expectations' (p. 72). In addition, the UK and USA have marked profiles in several of Hofstede's (2001) cultural dimensions – namely, individualism (which means that these cultures promote a focus on the person, rather than collective orientation), low power distance (so they reject power imbalance) and masculinity (they support assertiveness, strength, a 'can-do' attitude and competition). All these cultural traits may conspire so that, in Anglo-Saxon cultures, a goal obstruction (i.e., a threat to individual goals, which is important to individualistic communities) may be more likely met with an appraisal of high-coping potential (promoted by masculine cultures) and opposition (due to low tolerance for being disempowered). Accordingly, it is possible that, in those cultures, 'literal frustration' (i.e., goal obstruction) more likely leads to anger by default, and the meaning of the word *frustration* therefore shifts to represent the emotion experience it most frequently designates in practice.

## 7. Conclusion

'Frustration' cognates in English, Spanish, French and German are quoted as translation equivalents in dictionaries and used as translation-equivalent terms in practice. However, the data reported in this article evidence they do not mean the same.

Specifically, our findings suggest that English *frustration* is a clear ANGER word (Study 4), a good example of the ANGER prototype because of its high-power profile (Study 2), close in meaning to *anger* (Studies 2 and 3) and cognitively accessible to speakers of English and thus frequently used in the language (Study 1).

By contrast, the cognates of English *frustration* in the other three languages are comparatively less frequently used and less conceptually salient (Study 1), further apart in meaning from typical ANGER words in their respective languages (Studies

<sup>19</sup>Sadness and fear are differentiated by other appraisals too (e.g., Ellsworth & Smith, 1988).

2 and 3), poor examples of the prototypical ANGER category because of their low-power profile (Study 2) and more open-ended as to the emotion family they may refer to (ANGER, SADNESS, FEAR, or simply unspecified negative affect) (Study 4).

As a way to interpret these findings, we explained how cognitive appraisals may relate to the observed semantic differences. We pose that, in all cases, ‘frustration’ refers to goal obstruction. The difference lies in the representation of another appraisal, coping potential, which we posit to be high in English and low in the other languages. Since prototypical ANGER is a high-power type of emotion, ‘frustration’ emerges as a typical form of ANGER in English only. In the other languages, it refers either to a non-prototypical form of anger (low coping potential) or to other (low-coping potential) emotions (e.g., varieties of SADNESS).

This study has several limitations. First, our claims regarding power and the specific appraisals of goal congruence and coping potential are based on indirect (albeit congruent) evidence. To further substantiate these claims, it would be desirable to collect direct measurements of the dimensional (especially power) and appraisal profile of ‘frustration’ in the studied languages. Complementary direct evidence of the meaning of ‘frustration’ could also be collected with a corpus-based usage-feature analysis (e.g., Glynn, 2014; Soares da Silva, 2020) of each term in the four languages.

Another limitation is that the study describes ‘default’ or ‘average’ meanings. Yet, the word ‘frustration’ could still mean exactly the same in a given context in the four languages and be the most appropriate translation choice between them. This is underscored by the observation that the terms that appear to have a closer semantic profile to English *frustration* in the three other languages can vary slightly depending on the methodology used for comparison and the specific data employed (observational vs. elicited data, metaphorical construal similarity vs. usage-based synonyms, type of corpus, etc.). Therefore, we should not make sweeping statements about the non-equivalence of the different ‘frustration’ words *in practice*, and be prepared instead to evaluate said equivalence for translation on a case-by-case basis and in specific contexts. This, however, is fully compatible with the goal of our article, which was to raise awareness of the semantic differences that exist *by default*, which had not been sufficiently discussed in earlier literature.

Indeed, one of the novelties of our study is that previous observations on the ‘uniqueness’ of English *frustration* were made based on comparisons with languages lacking a ‘frustration’ word, such as Greek or Russian (FRUSTRATION as a non-lexicalized concept). Our work extends that research to languages with cognate terms, demonstrating that, even when cognate terms are available, English *frustration* has a unique meaning different from ‘frustration’ in the other languages.

Another novelty of our study is the type of data employed. Earlier studies pointing out the uniqueness of English *frustration* were based on introspection and intuitive observations of trained linguists, who were also native speakers of the languages concerned. We complete their accounts with quantitative data from two psycholinguistic and two linguistic studies employing corpus analyses and self-report. This makes our study the first quantitative empirical investigation of the semantic uniqueness of English *frustration*, based on converging findings from different disciplinary and methodological approaches.

To conclude, our finding that ‘frustration’ does not mean the same across languages should constitute a word of caution to emotion researchers relying on linguistic cues for experimental or conceptual work: even cognate terms that are used

as translation equivalents in practice may not refer to the same kind of affective experience in ways that can jeopardize the validity of the intended investigation.

## References

- Alonso-Arbiol, I., Soriano, C., & van de Vijver, F. (2013). The conceptualisation of despair in Basque, Spanish, and English. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 311–327). Oxford University Press.
- Barcelona, A. (1988). Análisis contrastivo del léxico figurado de la ira en inglés y español. In T. Labrador Gutiérrez, R. M. Sainz de la Maza & R. Viejo García (Eds.), *Actas del VI Congreso Nacional de Lingüística Aplicada (AESLA)* (pp. 141–148). Universidad de Cantabria.
- Bender, A., Spada, H., Seitz, S., Swoboda, H., & Traber, S. (2007). Anger and rank in Tonga and Germany: Cognition, emotion, and context. *Ethos*, 35(2), 196–234. <https://doi.org/10.1525/eth.2007.35.2.196>
- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin*, 106(1), 59–73. <https://doi.org/10.1037/0033-2909.106.1.59>
- Berkowitz, L. (2009). Frustration. In D. Sander & K. R. Scherer (Eds.), *The Oxford companion to emotion and the affective sciences* (pp. 188). Oxford University Press.
- Besemeres, M., & Wierzbicka, A. (2009). The concept of frustration: A culture-specific emotion and a cultural key word. In A. Blachnio & A. Przepiorka (Eds.), *Closer to emotions III* (pp. 211–226). Wydawnictwo KUL.
- Boucher, J. D. (1979). Culture and emotion. In A. J. Marsella, R. G. Tharp, & T. V. Ciborowski (Eds.), *Perspectives on cross-cultural psychology* (pp. 159–178). Academic Press.
- Durst, U. (2001). Why Germans don't feel "anger." In J. Harkins & A. Wierzbicka (Eds.), *Emotions in crosslinguistic perspective* (pp. 115–148). Mouton de Gruyter. <https://doi.org/10.1515/9783110880168.115>
- Elison, J. (2005). Shame and guilt: A hundred years of apples and oranges. *New Ideas in Psychology*, 23(1), 5–32. <https://doi.org/10.1016/j.newideapsych.2005.07.001>
- Ellsworth, P. C. (2013). Appraisal theory: Old and new questions. *Emotion Review*, 5, 119–124.
- Ellsworth, P. C., & Smith, C. A. (1988). From appraisal to emotion: Differences among unpleasant feelings. *Motivation and Emotion*, 12, 271–302. <https://doi.org/10.1007/BF00993115>
- Fehr, L., & Russell, J. A. (1984). Concept of emotion viewed from a prototype perspective. *Journal of Experimental Psychology: General*, 113(3), 464–486. <https://doi.org/10.1037/0096-3445.113.3.464>
- Fernandez, I., Carrera, P., Paez, D., Alonso-Arbiol, I., Campos, M., & Basabe, N. (2014). Prototypical anger components: A multilevel study. *Cross-Cultural Research*, 48(4), 400–424. <https://doi.org/10.1177/1069397114523932>
- Fetterman, A. K., Robinson, M. D., Gordon, R. D., & Elliot, A. J. (2011). Anger as seeing red: Perceptual sources of evidence. *Social Psychological and Personality Science* 2(3), 311–316. <https://doi.org/10.1177/1948550610390051>
- Fontaine, J. R. J., Scherer, K. R., & Soriano, C. (Eds.) (2013a). *Components of emotional meaning: A sourcebook*. Oxford University Press.
- Fontaine, J. R. J., Scherer, K. R., & Soriano, C. (2013b). The why, the what, and the how of the GRID instrument. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 83–97). Oxford University Press.
- Fries, N. (2004). Gefühle, Emotionen, Angst, Furcht, Wut und Zorn. In W. Börner & K. Vogel (Eds.), *Emotion und Kognition im Fremdsprachenunterricht* (pp. 3–24). Gunter Narr.
- Glynn, D. (2014). Correspondence analysis. Exploring correlations in multifactorial data. In D. Glynn & J. Robinson (Eds.), *Corpus methods for semantics: Quantitative studies in polysemy and synonymy* (pp. 443–486). John Benjamins.
- Hoekstra, H. A. (1986). *Cognition and affect in the appraisal of events* [Unpublished doctoral dissertation]. The University of Groningen.
- Hofstede, G. (2001). *Culture's consequences, comparing values, behaviors, institutions, and organizations across nations*. Sage.
- Hurtado de Mendoza, A., Fernández-Dols, J. M., Parrott, W. G., & Carrera, P. (2010). Emotion terms, category structure, and the problem of translation: The case of shame and vergüenza. *Cognition and Emotion*, 24(4), 661–680 <https://doi.org/10.1080/02699930902958255>

- Ishii, K. (2013). The meaning of happiness in Japan and the United States. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 473–476). Oxford University Press.
- Jakubíček, M., Kilgarriff, A., Kovář, V., Rychlý, P., & Suchomel, V. (2013). The TenTen corpus family. In *7th international corpus linguistics conference CL* (pp. 125–127). [https://www.sketchengine.eu/wp-content/uploads/The\\_TenTen\\_Corpus\\_2013.pdf](https://www.sketchengine.eu/wp-content/uploads/The_TenTen_Corpus_2013.pdf)
- Kilgarriff, A., Baisa, V., Bušta, J., Jakubíček, M., Kovář, V., Michelfeit, J., Rychlý, P., & Suchomel, V. (2014). The Sketch Engine: Ten years on. *Lexicography*, 1, 7–36. <https://doi.org/10.1007/s40607-014-0009-9>
- Koehn, P. (2005). *Europarl: A parallel corpus for statistical machine translation*. MT Summit.
- Kövecses, Z., Szelid, V., Nucz, E., Blanco-Carrión, O., Akkók, E., & Szabó, R. (2015). Anger metaphors across languages: A cognitive linguistic perspective. In R. Heredia & A. Cieślícka (Eds.), *Bilingual figurative language processing* (pp. 341–367). Cambridge University Press.
- Kuppens, P. (2009). Anger. In D. Sander & K. R. Scherer (Eds.), *The Oxford companion to emotion and the affective sciences* (pp. 32–33). Oxford University Press.
- Lakoff, G. (1993). The contemporary theory of metaphor. In A. Ortony (Ed.), *Metaphor and thought* (pp. 202–251). Cambridge University Press.
- Lakoff, G., & Kövecses, Z. (1987). The cognitive model of anger inherent in American English. In D. C. Holland & N. Quinn (Eds.), *Cultural models in language and thought* (pp. 195–221). Cambridge University Press.
- Lazarus, R. S. (1991). Progress on a cognitive-motivational-relational theory of emotion. *American Psychologist*, 46(8), 819–834.
- Levy, R. I. (1973). *Tahitians: Mind and experience in the Society Islands*. Chicago, IL: University of Chicago Press.
- Li, J., Wang, L., & Fisher, K. W. (2004). Organization of Chinese shame concepts. *Cognition and Emotion*, 18, 767–797.
- Lutz, C. (1982). The domain of emotion words on Ifaluk. *American Ethnologist*, 9(1), 113–128. <http://www.jstor.org/stable/644315>
- Mortillaro, M., Ricci-Bitti, P. E., Bellelli, G., & Galati, D. (2013). Pride is not created equal: Variations between Northern and Southern Italy. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 366–376). Oxford University Press.
- Neto, F., & Mullet, E. (2014). A prototype analysis of the Portuguese concept of saudade. *Journal of Cross-Cultural Psychology*, 45(4), 660–670. <https://doi.org/10.1177/0022022113518370>
- Niiya, Y., Ellsworth, P. C., & Yamaguchi, S. (2006). Amai in Japan and the United States: An exploration of a “culturally unique” emotion. *Emotion*, 6(2), 279–295. <https://doi.org/10.1037/1528-3542.6.2.279>
- Ogarkova, A. (2021). Cross-lingual translatability of emotion terms: A review. In H. L. Meiselman (Ed.), *Emotion measurement* (pp. 910–930). Elsevier.
- Ogarkova, A., & Soriano, C. (2014). Variation within universals: The ‘metaphorical profile’ approach to the study of ANGER concepts in English, Russian and Spanish. In A. Musolff, F. MacArthur, & G. Pagani (Eds.), *Metaphor and intercultural communication* (pp. 93–116). Bloomsbury.
- Ogarkova, A., & Soriano, C. (2022). Anger from a language-based perspective. In G. L. Schiewer, J. Altarriba, & B. Ch. Ng (Eds.), *Language and emotion. An international handbook*, vol. 2 (pp. 1090–1108). Mouton de Gruyter.
- Ogarkova, A., Soriano, C. & Gladkova, A. (2018). Methodological triangulation in the study of emotion. The case of ‘anger’ in three language groups. In A. M. Piquer-Piriz & R. Alejo-González (Eds.), *Applying cognitive linguistics. Figurative language in use, constructions and typology* (pp. 73–100). John Benjamins.
- Ogarkova, A., Soriano, C., & Lehr, C. (2012). Naming feeling: Exploring the equivalence of emotion terms in five European languages. In P. A. Wilson (Ed.), *Dynamcity in emotion concepts* (pp. 253–284). Peter Lang.
- Oster, U. (2014). Emotions between physicality and acceptability. A contrast of the German anger words *Wut* and *Zorn*. *Onomázein*, 30, 286–306. <https://doi.org/10.7764/onomazein.30.19>
- Panayiotou, A. (2004). Switching codes, switching code: Bilinguals’ emotional responses in English and Greek. *Journal of Multilingual and Multicultural Development*, 25(2–3), 124–139. <https://doi.org/10.1080/01434630408666525>
- Pavlenko, A. (2008). Emotion and emotion-laden words in the bilingual lexicon. *Bilingualism: Language and Cognition*, 11(2), 147–164. <https://doi.org/10.1017/S1366728908003283>
- Ponsonnet, M. (2014). *The language of emotion: The case of Dalabon*. John Benjamins.

- Russell, J. A. (1980). A circumplex model of affect. *Journal of Personality and Social Psychology*, 39, 1161–1178. <https://doi.org/10.1037/h0077714>
- Russell, J. A. (1991a). Culture and the categorization of emotions. *Psychological Bulletin*, 110, 426–450. <https://doi.org/10.1037/0033-2909.110.3.426>.
- Russell, J. A. (1991b). In defense of a prototype approach to emotion concepts. *Journal of Personality and Social Psychology*, 60(1), 37–47. <https://doi.org/10.1037/0022-3514.60.1.37>
- Russell, J. A., & Fehr, B. (1989). *The concept of anger viewed from a prototype perspective* [Unpublished manuscript]. University of British Columbia.
- Russell, J. A., & Fehr, B. (1994). Fuzzy concepts in a fuzzy hierarchy: Varieties of anger. *Journal of Personality and Social Psychology*, 67(2), 186–205. <https://doi.org/10.1037/0022-3514.67.2.186>
- Scheibe, S., Blanchard-Fields, F., Wiest, M., & Freund, A. M. (2011). Is longing only for Germans? A cross-cultural comparison of Sehnsucht in Germany and the United States. *Developmental Psychology*, 47(3), 603–618. <https://doi.org/10.1037/a0021807>
- Scherer, K. R. (1984). On the nature and function of emotion: A component process approach. In K. R. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 293–317). Erlbaum.
- Scherer, K. R. (2001). Appraisal considered as a process of multi-level sequential checking. In K. R. Scherer, A. Schorr, & T. Johnstone (Eds.), *Appraisal processes in emotion: Theory, methods, research* (pp. 92–120). Oxford University Press.
- Scherer, K. R. (2009). The dynamic architecture of emotion: Evidence for the component process model. *Cognition and Emotion*, 23, 1307–1351.
- Scherer, K. R., & Fontaine, J. R. J. (2013). The meaning structure of emotion terms: Integration across components. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 210–230). Oxford University Press.
- Scherer, K. R., & Moors, A. (2019). The emotion process: Event appraisal and component differentiation. *Annual Review of Psychology*, 70, 719–745. <https://doi.org/10.1146/annurev-psych-122216-011854>
- Shaver, P., Wu, S., & Schwartz, J. (1992). Cross-cultural similarities and differences in emotion and its representation: A prototype approach. In M. S. Clark (Ed.), *Emotion. Review of personality and social psychology*, Vol. 13 (pp. 175–212). Sage.
- Silfver, M., Fontaine, J. R. J., Dillen, L., & Scherer, K. R. (2013). Cultural differences in the meaning of guilt and shame. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 388–396). Oxford University Press.
- Slaměník, I., & Hurychová, Z. (2006). Socio-cultural dependency of emotions: Comparative analysis using the prototype approach. In V. Kebza (Ed.), *Psychological aspects of transformation of the Czech society within the context of European integration* (pp. 105–122). Matfyzpres.
- Smith, K. D., & Tkel-Sbal, D. (1995). Prototype analyses of emotion words in Palau, Micronesia. In J. A. Russell, J. M. Fernandez-Dols, A. S. Manstead, & J. C. Wellenkamp (Eds.), *Everyday conceptions of emotion: An introduction to the psychology, anthropology, and linguistics of emotion* (pp. 85–102). Kluwer Academic Publishers.
- Soares da Silva, A. (2020). Exploring the cultural conceptualization of emotions across national language varieties. A multifactorial profile-based account of pride in European and Brazilian Portuguese. *Review of Cognitive Linguistics*, 18(1), 42–74. <https://doi.org/10.1075/rci.00050.soa>
- Soares da Silva, A. (2021). Measuring the impact of (non)figurativity in the cultural conceptualization of emotions in the two main national varieties of Portuguese. In A. Soares da Silva (Ed.), *Figurative language – Intersubjectivity and usage* [series *Figurative Thought and Language* 11] (pp. 387–438). John Benjamins. <https://doi.org/10.1075/ftl.11.13sil>
- Soares da Silva, A. (2022). Metaphor, emotion, and intralinguistic cultural variation: Metaphors of anger in European and Brazilian Portuguese. In U. Schröder, M. Mendes de Oliveira, & A. Tenuta (Eds.), *Metaphorical conceptualizations: (Inter)cultural perspectives* (pp. 189–222). De Gruyter Mouton. <https://doi.org/10.1515/9783110688306-008>
- Soriano, C. (2003). Some anger metaphors in Spanish and English. A contrastive review. *International Journal of English Studies*, 3(2), 107–122.
- Soriano, C. (2005). *The conceptualization of anger in English and Spanish: A cognitive approach* [Unpublished doctoral dissertation]. University of Murcia.



- Soriano, C. (2013). Conceptual metaphor theory and the GRID paradigm in the study of anger in English and Spanish. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 410–424). Oxford University Press.
- Soriano, C. (2022). Affective meaning in language. In G. L. Schiewer, J. Altarriba, & B. C. Ng (Eds.), *Language and emotion. An international handbook* (pp. 489–510). Mouton de Gruyter. <https://doi.org/10.1515/9783110347524-023>
- Soriano, C., Fontaine, J. R. J., Ogarkova, A., Mejía, C., Volkova, Y., Ionova, S., & Shakhovskyy, V. (2013). Types of anger in Spanish and Russian. In J. R. J. Fontaine, K. R. Scherer, & C. Soriano (Eds.), *Components of emotional meaning: A sourcebook* (pp. 339–352). Oxford University Press.
- Soriano, C., Fontaine, J. R. J., & Scherer, K. R. (2015). Surprise in the GRID. In A. Celle & L. Lansari (Eds.), *Expressing and describing surprise. Review of Cognitive Linguistics*, 13(2), 436–460. <https://doi.org/10.1075/rcl.13.2.07sor>
- Stefanowitsch, A. (2006). Words and their metaphors. A corpus-based approach. In A. Stefanowitsch & S. Gries (Eds.), *Corpus-based approaches to metaphor and metonymy* (pp. 61–105). Mouton de Gruyter.
- Suarez Campos, L. (2020). *La conceptualización metafórica y metonímica de la ira en búlgaro y en español y su adquisición en español le/l2* [Unpublished doctoral dissertation]. University of Zaragoza.
- Tiedemann, J. (2012). Parallel data, tools and interfaces in OPUS. In *Proceedings of the 8th international conference on language resources and evaluation (LREC'2012)*. [http://www.lrec-conf.org/proceedings/lrec2012/pdf/463\\_Paper.pdf](http://www.lrec-conf.org/proceedings/lrec2012/pdf/463_Paper.pdf)
- Wallace, A. F., & Carson, M. T. (1973). Sharing and diversity in emotion terminology. *Ethos*, 1(1), 1–29.
- Weigand, E. (1998). The vocabulary of emotion. A contrastive analysis of ANGER in German, English and Italian. In E. Weigand (Ed.), *Contrastive lexical semantics* (pp. 45–66). John Benjamins.
- Wierzbicka, A. (1999). *Emotions across languages and cultures: Diversity and universals*. Cambridge University Press. <https://doi.org/10.1017/CBO9780511521256>
- Zheng, R., Zhang, M., Guo, T., Guasch, M., & Ferré, P. (2023). Emotional prototypicality ratings for 636 Chinese words: A database of Chinese words with affective information. *Journal of Psycholinguistic Research*, 52, 2775–2792. <https://doi.org/10.1007/s10936-023-10018-9>