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Structure of the Basque emotion lexicon

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Using a prototype approach to emotion concepts, two studies were conducted in the Basque Country, where an ancient non-Indo-European language is still spoken, to identify the mental state words that Basque speakers are most certain name emotions (*emozioak*) and to map the hierarchical and family resemblance structure of the most prototypical 124 emotion concepts. Cluster analysis of sorting data collected in the Basque Country revealed five basic level emotion categories similar to those found in American English and Indonesian (love, happiness, anger, sadness, and fear) as well as five other small positive emotion categories. All major categories found at the basic level contained several terms that are not traceable to Romance languages. Also in line with the American and Indonesian results, the basic level categories in Basque fell within two large superordinate categories: positive and negative emotions. Each of the five large basic level categories contained several subordinate level categories. The results suggest that the emotion lexicons, and corresponding conceptualisations of the emotion domain, in the Basque Country, Indonesia, and the US are similar, although there are some important differences.

One promising framework for the understanding of emotion complexity is the study of emotions through any particular language. The research literature on

"basic emotions" (e.g., Ekman, 1992) deals mainly with American studies of facial expressions, and most structural studies of the emotion lexicon are based on American English. Researchers have long disagreed about the extent to which human emotional phenomena, including the social-cognitive representation of the emotion domain, are cross-culturally universal or culturally constructed. Studies of different emotional phenomena, including facial expressions of emotion, dimensions underlying emotion categories, and the ways in which emotions are represented in language, have generally supported the claim that there is a core set of emotions that are expressed and recognised in all cultures (see Shaver, Murdaya, & Fraley, 2001, for an overview). But there have also been many challenges to this view. Several philosophers and anthropologists have maintained that some cultures have no name for, and thus no conception of, particular emotions recognised in other cultures (e.g., Lutz & White, 1986), that different cultures place different emphases on particular emotions (e.g., Levy, 1984), and that different cultures have devised different conceptions of emotion (e.g., Lutz, 1988).

In recent years, the rigid distinction between "universality" and "relativism" has been breaking down. Wierzbicka (1999), who conducts detailed qualitative studies of the representation of emotions in words, for example, has presented cross-linguistic evidence for both universality and cultural specificity. Ekman (1992) has labelled his approach "neurocultural" to indicate that although there is a hard-wired neural substrate for some emotions and emotional expressions, these emotions and expressions are contextualised within cultures and regulated by cultural "display rules". Shaver et al. (2001) found both substantial similarities and interesting differences in the linguistic categorisation of emotions, suggesting an underlying commonality augmented and shaped by local emphases. They argued that the emotion research field needs more studies conducted in different cultures, based on languages with different historical roots, so that the issue of universality vs. difference can be evaluated in the light of a more extensive database. In creating this database, it is important that some of the same methods be used, because it is difficult to compare results based on divergent methodologies. Here, we report two studies conducted in the Basque Country, where an ancient non-Indo-European language, Basque, has survived in the midst of various Romance languages (especially French and Spanish). The methods we used are based on a prototype approach to emotion concepts and a set of research techniques already used by Shaver and colleagues in different cultures.

Prototype approach to emotion concepts

We applied techniques developed by Shaver and colleagues (e.g., Shaver et al., 2001; Shaver, Schwartz, Kirson, & O'Connor, 1987; Shaver, Wu, &

Schwartz, 1992; based on work by Fehr & Russell, 1984) in studies in the US and Indonesia to examine the representation of emotions in the Basque language.[1] The theory behind these techniques, called the prototype approach to categorisation, was first proposed by Rosch (1978; Rosch, Mervis, Gray, Johnson, & Boyes-Braem, 1976) in her writings about "fuzzy categories" in everyday language and cognition – categories for which there are no clear "classical" definitions based on necessary and sufficient features. Despite their inherent fuzziness, such categories can be roughly defined in terms of prototypes and central features, and arranged hierarchically according to conceptual levels, which Rosch (1978) called superordinate, basic, and subordinate. This approach to categorisation has continued to prove useful in studies of perceptual and linguistic development, memory, and social categorisation.[2]

An example of a fuzzy superordinate category is *animal*, which includes diverse members and is difficult to define using necessary and sufficient features. Within that category are diverse creatures, such as dogs, birds, and snakes, which share few identical physical features but are all members of the animal kingdom. Within the fuzzy basic level category birds, there are subordinate level categories – parrots, canaries, penguins, and so on – which differ as well but can be summarised in terms of a list of largely shared, although not universally shared, prototypical features (having feathers, flying, laying eggs, and so on).

Rosch's research revealed that most everyday linguistic and cognitive distinctions are made at the basic level of categorisation (e.g., houses, chairs, cars, cats, and dogs), which is the highest level at which categories have a single "prototype" – a best or most typical exemplar or list of relatively central features. One can visualise a prototypical dog and know what to expect of it and do with it, but one cannot visualise animals as a whole in a similarly concrete, unified, functional image. Object categorisation tends to be quickest at the basic level, and children tend to learn words that designate basic level object categories first during language acquisition (Rosch, 1978; Rosch et al., 1976).

When Rosch's (1978) approach is applied to the domain of emotions, with emotions being conceptualised as psychological or behavioural "objects" (i.e., experienced and observable events that unfold in regular, script-like – although variable and context-sensitive – ways within particular episodes) it is possible to conceptualise their mental representations as implicit event prototypes or scripts. Like other fuzzy categories, emotion categories can be

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[1] The description of the prototype method in this section is adapted from Shaver et al. (2001).

[2] However, some authors prefer other methods of comparing emotion concepts in different languages (e.g., Wierzbicka, 1984).

arrayed hierarchically, in terms of superordinate, basic, and subordinate levels. Theoretically, concepts at these levels should function psychologically like the corresponding concepts in the domains of buildings, furniture, animals, and so on. People should tend to make preliminary "cuts" of the emotion domain at the basic level, and children should learn basic level emotion concepts first during language acquisition. Preliminary evidence suggests that both of these hypotheses are correct (Bretherton & Beeghley, 1982; Bretherton, Fritz, Zahn-Waxler, & Ridgeway, 1986; Shaver et al., 1992). To the extent that different languages and cultures create different emotion category systems, people in those cultures who use those languages should make different intuitive judgements in social situations, which might sometimes lead to different understandings and social outcomes.

Procedures used in the present studies

The techniques used by Shaver and colleagues to elucidate the structure of the conceptual domain of emotions in different cultures and languages include: (a) determining which mental state nouns in a particular language are considered by most native speakers to designate emotions; and (b) determining how native speakers view the relations among the emotions named by these nouns. Emotion nouns, rather than adjectives (angry), adverbs (angrily), or verbs (to scream furiously), are used to increase the psychological similarity of emotions to "objects" in Rosch's studies. This encourages research participants to think about emotions as "things" and reduces the number of items to be sorted without strongly affecting the overall content, since many emotion adjectives and adverbs are closely related to the corresponding nouns. The first part of this procedure, selecting words that most native speakers agree are names of emotions, is important because other approaches to lexical studies of emotion are likely to include mixtures of emotions and non-emotions or skew the selection of terms away from everyday language and toward a particular emotion theory.[3]

The second part of our procedure is based on Rosch's (1978) claim that objects or entities in fuzzy categories bear family resemblances to each other.

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[3] An example of this problem occurs, in our opinion, in Heider's (1991) otherwise interesting and informative ethnographic book about the emotion concepts used by particular Indonesian subcultures. Heider collected words using a free-association technique, resulting, at least according to our criteria, in a mixed list of emotions and non-emotions. Other examples include hierarchical and circumplex studies conducted by Scherer and Wallbott (1994), Ortony et al. (1987), and Russell et al. (1989), who chose emotion terms based partly on pre-existing theories about what the resulting representational structures should look like. Whenever researchers do this, they risk creating self-fulfilling distinctions that are not necessarily representative of everyday language. As will be seen, we attempted to find a list of prototypical emotion concepts based on native speakers' own judgements of appropriateness and prototypicality.

When research participants make decisions about which emotions belong in the same category, they may use slightly different criteria for different judgements. In recent years, controversy has developed about whether people's judgements in emotion name sorting studies are based on memories of co-occurrence of particular emotions in personal experience or semantic knowledge about the similarities and connectedness between pairs of named emotions (e.g., Feldman Barrett & Fossum, 2001; Schimmack & Reisenzein, 1997). Both bases for similarity/ relatedness judgements are compatible with the idea that people possess implicit representations of emotional events they have repeatedly experienced, witnessed, and heard or read about. There are presumably numerous ways people can think about the relations between particular pairs or groups of emotions. What we wish to determine is how these numerous ways do or do not map onto a common implicit conceptual hierarchy.

Cluster-analysing the co-occurrence matrix that results from an emotion-name sorting task is based on the assumption that languages are likely to contain a "family" of terms that designate different forms of biologically and culturally important emotions, and that family resemblances and interfamily differences will cause these interrelated terms, on average (across many participants), to form statistical clusters. The concepts that receive more discussion will presumably have more words addressed to them (a process called "hypercognition" by Levy, 1973). The ways in which the emotion subfamilies and families aggregate at higher and higher levels of the resulting cluster diagram should reveal the implicit organisation of the sorters' knowledge of the emotion domain.

Following this line of reasoning, Shaver et al. (1987) created a large and theory-neutral list of potential emotion names in English and had a group of college-aged research participants in the US rate them according to how prototypical each one was of the category *emotion*. The top-rated 135 emotion terms were then typed onto cards, one emotion per card, and given to a second group of participants, each of whom placed them into categories based on family resemblance. The number and size of the categories were left to each participant's discretion. A hierarchical cluster analysis of the resulting co-occurrence matrix produced the structure summarised in Table 1. There were two implicit categories at what might be considered the superordinate level: positive and negative emotions. Within the positive category, there were two major basic level categories: love and happiness. There was also a very small surprise category. Within the negative super-ordinate category, there were three basic level categories: anger, fear, and sadness. Within each of these basic level categories, there were from two to six subordinate level categories, resulting in a total of 24 subordinate categories.

TABLE 1
Emotion hierarchy in American English

	Hierarchical levels	
Superordinate	*Basic*	*Subordinate*
Positive	Love	(1) adoration, affection, love, fondness, liking, attraction, caring, tenderness, compassion, sentimentality; (2) arousal, desire, lust, passion, infatuation; (3) longing [3 groups; 16 terms; 12% of the total]
Positive	Happiness	(1) amusement, bliss, cheerfulness, gaiety, glee, jolliness, joviality, joy, delight, enjoyment, gladness, happiness, jubilation, elation, satisfaction, ecstasy, euphoria; (2) enthusiasm, zeal, zest, excitement, thrill, exhilaration; (3) contentment, pleasure, pride, triumph; (4) eagerness, hope, optimism; (5) enthrallment, rapture; (6) relief [6 groups; 33 terms; 25% of the total]
Negative	Anger	(1) aggravation, irritation, agitation, annoyance, grouchiness, grumpiness; (2) exasperation, frustration; (3) anger, rage, outrage, fury, wrath, hostility, ferocity, bitterness, hate, loathing, scorn, spite, vengefulness, dislike, resentment; (4) disgust, revulsion, contempt; (5) envy, jealousy; (6) torment [6 groups; 29 terms; 22% of the total]
Negative	Fear	(1) alarm, shock, fear, fright, horror, terror, panic, hysteria, mortification; (2) anxiety, nervousness, tenseness, uneasiness, apprehension, worry, distress, dread [2 groups; 17 terms; 13% of the total]
Negative	Sadness	(1) agony, suffering, hurt, anguish; (2) depression, despair, hopelessness, gloom, glumness, sadness, unhappiness, grief, sorrow, woe, misery, melancholy; (3) dismay, disappointment, displeasure; (4) guilt, shame, regret, remorse, alienation, isolation, neglect, loneliness, rejection, homesickness, defeat, rejection, insecurity, embarrassment, humiliation, insult: (5) pity, sympathy [5 groups; 37 terms; 28% of the total]

Note: The table is based on Shaver et al. (1987).

A parallel study (Shaver et al., 2001) was conducted in Indonesia, where an Austronesian language, Bahasa Indonesia, is spoken. The words used in this study were culled from the Indonesian dictionary by several native speakers, without regard to the English words used in the American study. The cluster-analytic results of the Indonesian study are summarised in Table 2. As in American English, there were two superordinate level Indonesian categories: positive and negative emotions. Within the positive category, there were again two major basic level categories: love and happiness. There was no "surprise" category, because the word "surprise" did not make the cut-off used to decide which emotion names would be

TABLE 2
Emotion hierarchy in Indonesian

Hierarchical levels		
Superordinate	*Basic*	*Subordinate*
Positive	*cinta* (love)	**(1. nonsexual desire)** *ingin*, *kepingin*; **(2. sexual desire/arousal)** *hasrat*, *berahi*, *terangsang*, *bergaira*, *gairah*; **(3. liking, fondness)** *demen*, *suka*; **(4. attraction, enchantment)** *terkesiap*, *terbuai*, *terpesona*, *terpikat*, *tertarik*; **(5. love)** *perasaan*, *getar hati*, *setia*, *edan kesmaran*, *kangen*, *rindu*, *kemesraan*, *asmara*, *mesra*, *cinta*, *kasih*, *sayang* [5 groups; 26 terms; 21% of the total]
Positive	*senang* (happiness)	**(1. respect, admiration)** *bangga*, *kagum*; **(2. happiness, joy)** *asik*, *sukacita*, *sukaria*, *bahagia*, *senang*, *girang*, *gembira*, *ceria*, *riang*; **(3. calmness, security)** *damai*, *aman*, *tenteram*; **(4. satisfaction, contentment)** *lega*, *kepuasan*, *puas*; **(5. boldness, confidence)** *berani*, *yakin*; **(6. feeling good about right actions)** *ikhlas*, *tulus*; **(7. justified pride)** *berbesar*, *besar hati*; **(8. quiet, mature confidence)** *rendah hati*, *sabar*, *tabah* [8 groups; 26 terms; 21% of the total]
Negative	*marah* (anger)	**(1. angry boredom, feeling fed up)** *bosan*, *jenuh*; **(2. jealous distrust)** *cemburu*, *curiga*; **(3. envy, resentment)** *tinggi hati*, *iri*, *berdengki*, *dengki*; **(4. pent-up anger)** *gemas*, *gregetan*; **(5. bitterness)** *ngambek*, *tersingung*; **(6. hatred, loathing)** *muak*, *benci*, *dendam*; **(7. anger, vexation)** *histeris*, *senewen*, *emosi*, *kesal*, *sebal*, *mangkel*, *dongkol*, *jengkel*, *panas hati*, *kalap*, *murka*, *naik darah*, *naik pitam*, *marah*, *berang*, *geram* [7 groups; 31 terms; 25% of the total]
Negative	*takut* (fear)	**(1. fear, trembling)** *gentar*, *takut*; **(2. nervousness, restlessness)** *berdebar*, *kebat-kebit*; **(3. anxiety, worry, confusion)** *kalut*, *gusar*, *kecemasaan*, *cemas*, *kawatir*, *waswas*, *bimbang*, *bingung*, *galau*, *gundah*, *gelisah*, *risau* [3 groups; 16 terms; 13% of the total]
Negative	*sedih* (sadness)	**(1. hurt, shame)** *kecil hati*, *malu*; **(2. sympathy)** *simpati*, *tersentu*; **(3. feeling moved, touched)** *haru*, *keharuan*; **(4. pity, compassion)** *prihatin*, *iba*, *kasihan*; **(5. sadness, grief)** *murung*, *pilu*, *sendu*, *sedih*, *duka*, *dukacita*; **(6. crushed, broken-hearted)** *sakit hati*, *pedih hati*, *patah hati*, *remuk hati*; **(7. hopelessness, despair)** *frustrasi*, *putus asa*, *putus harapan*; **(8. regret, remorse)** *berat hati*, *penyesal*, *sesal* [8 groups; 25 terms; 20% of the total]

Note: The table is based on Shaver et al. (2001).

included. Within the negative category, there were three basic level categories: anger, fear, and sadness. Within each of these basic level categories, there were from 3 to 8 subordinate level categories, for a total of 31 subordinate categories in all. Despite some interesting differences

between the American and Indonesian results at the subordinate level, the overall patterns of results from the two studies were strikingly similar.

A third study (Shaver et al., 1992) was conducted in Beijing, China, and the results were similar in most respects to the American and Indonesian results but different in other respects. At the superordinate level there were again two categories: positive and negative emotions. At the basic level, however, love was not a clearly separate basic level category in the superordinate positive emotion category. Instead, a few love-related words (translated as liking, liking/love, love/admiration, and fascination) were embedded within a large group of happiness-related words; they did not form a separate, distinct cluster. Within the negative superordinate category, there were the familiar anger, fear, and sadness categories at the basic level, along with two additional negatively toned categories: shame and "sad love" (the latter containing words translated, for example, as unrequited love, nostalgia, and sorrow/love). Thus, the results from the three studies combined suggested that there are many cross-cultural and cross-linguistic similarities in implicit representations of the emotion domain, but that there are also interesting differences that might affect social perception and categorisation. The purpose of the studies reported here is to extend our explorations to another language, Basque, which is not a member of the three language families studied previously.[4]

Basque language

The Basque language, Basque (or *Euskara*), is a unique non-Indo-European language which may conceivably have roots in the earliest history of human habitation of western Europe:

> On the whole, in spite of the regional differences, archaeologists are satisfied that the record of occupation in the Basque Country from the palaeolithic to the end of the Bronze Age is one of continuity: everything points to the uninterrupted presence of the same people, with their culture evolving in place and receiving influences, but not invasions, from elsewhere in Europe. Consequently, the Basques [may] be direct descendants of the original human settlers of Europe, the Cro-Magnon people of some 35,000 years ago (Trask, 1997, pp. 8–9).

Trask (1997, p. 35) also says that Basque is a genetically isolated language: "There is not the slightest shred of evidence that it is related to any other living language . . . Basque is beyond dispute the sole surviving pre-Indo-European language of western Europe".

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[4] A possible interpretation bias coming from an Anglo perspective was reduced in this study by having some researchers who were not fluent or able to think in English.

Many of the emotion names used in present day Basque are Basque in origin and have a long history, although others have been affected by the Basque people's contact with Latin, Spanish, and French. Today, most speakers of Basque in Spain, where our studies were conducted, are bilingual in Basque and Spanish. The Basque language is a co-official language in the Basque region of Spain, which is locally governed by the Basque Government.

Aims of the present studies

The emotion lexicon in Basque reflects the language's rich history. Its core comes from ancient non-Indo-European sources, but there are some borrowings mainly from Latin and surrounding romance languages. We were interested in determining the underlying conceptual structure of the emotion domain reflected in this ancient language. For this purpose, we conducted two studies: (a) to determine which nouns are considered by Basque speakers to name emotions; and (b) to discover how such speakers view the relations among the emotions named by these words. In particular, we wished to discover the implicit hierarchy of fuzzy emotion concepts that lies behind Basque speakers' intuitive judgements about family resemblances among different emotions. Furthermore, we were interested in proving whether the obtained hierarchical representation of Basque emotions could be exclusively explained by means of cultural convergence or not. For that reason, we relied on linguists' expertise to establish, to an extent, whether the emotion terms were rooted in ancient Basque or, on the contrary, were loan words.

Our general expectations, based on previous studies using the same techniques in the US, Indonesia, and China were that: (1) there would be two large superordinate categories that distinguished positive from negative emotions; (2) there would be at least two basic level categories (love, joy/happiness) and maybe surprise within the positive superordinate category; (3) there would be at least three basic level categories (anger, fear, and sadness) within the negative superordinate category; and (4) there would be multiple subordinate level categories within most of the basic level categories, some of which would be recognisably similar to subordinate level categories in the other languages studied to date and some of which might be unique.

Another hypothesis, based on the possibility that biologically (rather than just cognitively) "basic" emotions have been recognised and named in different cultures worldwide and across time, focused on the antiquity of terms designating the major emotion categories. We predicted (5) that there would be ancient Basque words for all basic level categories found in the US and Indonesia. We presumed that if most of the Basque emotion words proved to be of pre-Indo-European origin and if we found ancient Basque

words in every basic-level category, we could conclude that the similarity between hierarchical representations of Basque emotions and representations of emotions in other languages was not due to cultural convergence.

STUDY 1

The aim of Study 1 was to identify the nouns that speakers of Basque regard as emotion names.

Method

Participants. A total of 104, mostly college-educated (87.3%), adults of both genders (48 men and 56 women) participated in the study. They were recruited using friendship networks, a web-based electronic distribution list focused on the Basque language, and local Basque radio stations and magazines. Participants' ages ranged from 21 to 75 years ($M = 41.6$; $SD = 12.32$); 84.5% were native speakers of Basque and 15.5% were fluent in Basque but had Spanish as their first language.[5]

Procedure. A preliminary list of emotion names was compiled by three Basque speakers who combed through the bilingual Spanish-Basque dictionary, *Elhuyar Hiztegia* (Elhuyar, 2000) looking for words that anyone in the Basque Country might think name emotions.[6] Two native Basque speakers, a linguist and a social scientist, then combed through the word list, adding any words or word forms they thought relevant and removing the following kinds of words: forms of the same word but bearing different suffixes (in which case the most general form was retained), polysemic words (e.g., *kexu*) that can have different emotional meanings depending on context, all words that were not nouns (e.g., *ausarti*, "bold"; *ausartu*, "to dare"; *eme*, "gentle"), words that made reference to something related to an emotion rather than to an emotion per se (*mendeku*, "revenge"), words that were both nouns and adjectives at the same time and so could be mistakenly read as adjectives in our study, and ones referring specifically to emotional sounds (*ulu*, "howl") rather then emotions.

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[5] Although it obviously would have been desirable to include only native Basque speakers who use nothing but Basque in daily life, this was not possible because all college-aged individuals in the Basque Country today are bilingual. The participants in both of our studies used Basque frequently, were studying in Basque, were attending a Basque university, listened to Basque radio stations, and so on. Many listened regularly to Basque music, read Basque publications, etc. They were as good informants about Basque emotion terms as we could realistically locate.

[6] This Spanish-Basque dictionary was used because it is considered to be one of the most comprehensive present-day dictionaries (even more comprehensive than most monolingual Basque dictionaries).

In the end, a list of 298 nouns was agreed upon. Although human judgement was obviously involved in assembling this list, the list was not knowingly affected by any theory about what the resulting emotion domain should look like (e.g., that it should have a circumplex structure or contain only a certain number of categories), and the major goal was to be broadly inclusive rather than restrictive, given that study participants would have the option of saying that certain words did not name emotions.[7]

A questionnaire was created listing the 298 terms in alphabetical order and asking participants to rate each one on a 4-point scale ranging from 0, "Emozioaren izena *ez* dela guztiz ziur nago" (I am very sure that this word does *not* name an emotion) to 3, "*Bai*, emozioaren izena dela guztiz ziur nago" (I am very sure that this word *does* name an emotion).[8] In addition to these rating options, a question mark was provided for cases in which a participant was unsure what a particular word meant. Participants also completed several background questions concerning age, gender, education, occupation, and language history and competencies.

Of the 298 words, 90 (30.2%) were unfamiliar to more than 16% of the participants, so (following procedures recommended by Shaver et al., 1987) they were not included in Study 2. This relatively high level of unfamiliarity was due to the number of rare emotion words found in the dictionary and allowed into the initial list of 298 potential emotions.

Mean prototypicality ratings were used to select, from the remaining 208 words, the 124 best examples of the emotion domain (the average ratings for retained words was 1.9 or above). The reason for setting this cut-off was to provide participants in Study 2 with a large but manageable number of terms to sort, and to approximate the number of words used by Shaver and colleagues in the US ($N = 135$), China ($N = 110$), and Indonesia ($N = 124$).

Results and discussion

The final 124 words, along with their mean prototypicality ratings and brief English translations, are shown in Table 3. (All of the words and their ratings are available from the authors on request.) The English translations were

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[7] Actually, the experts' main task was just to delete the words that no one would consider an emotion name (e.g., umbrella, chair, book....) so that participants were not burdened with a very long list.

[8] We chose a guided rather than an open-ended task because our goal was not to get a general picture of the terms most often used as emotion names, but rather we were interested in all the possible words considered to be names of emotions. When participants are asked to give spontaneous examples of any kind of words, the produced sample is always smaller in a free task than in a guided task like ours (which involves combing through a list to select examples of a category.) This is because a speaker's potential range of vocabulary is much more extensive than the actual lexicon that the speaker uses commonly, or can think of in a 15 min task.

TABLE 3
Mean prototypicality ratings, unfamilarity percentages (UP), and English translations for the 124 most prototypical Basque emotion words

Emotion word	M	UP	English definition
poza	2.89	0	joy, delight, happiness
amorrua[a]	2.86	0	rage, anger, wrath
beldurra	2.85	0	fear, dread, fright
alaitasuna[b]	2.81	0	elation, happiness, joy
zoriontasuna	2.81	1	happiness
ikara	2.79	0	scare, fright, terror
errabia[a]	2.77	3	rage, fury, wrath
pena[a]	2.75	0	sorrow
pasioa[a]	2.74	0	passion
gorrotoa[a]	2.73	0	hate
izua	2.73	2	horror, fear, terror, fright
maitasuna	2.73	0	love
amodioa[a]	2.72	0	love
bizipoza	2.72	0	*joie de vivre*
tristura[a]	2.72	0	sadness
zeloak[a]	2.72	0	jealousy
angustia[a]	2.71	0	anguish
desesperazioa[a]	2.69	0	despair
gozamena	2.69	0	pleasure (sexual)
alegrantzia[a]	2.68	7	joy
furia[a]	2.67	2	fury, rage
kontentua[a]	2.67	2	happiness
desilusioa[a]	2.66	0	disenchantment, disillusionment
haserrea	2.65	0	anger
herrimina	2.65	0	homesickness for the Basque Country
irrika	2.65	0	longing, urge, yearning, yearn
lotsa	2.65	0	shame
negargura	2.65	0	tearfulness, urge to cry
afektua[a]	2.63	0	affection
etsipena	2.61	0	despair
kolera[a]	2.61	0	rage, anger
nostalgia[a]	2.61	1	nostalgia
desioa[a]	2.60	0	desire, yearning, want
ditxa[a]	2.60	10	happiness, joy, felicity
disgustua[a]	2.59	0	displeasure
larritasuna	2.59	0	anguish, anxiety
melankolia[a]	2.58	0	melancholy, sadness
satisfazioa[a]	2.57	0	satisfaction, delight
bihozmina	2.54	1	heartbreak, heartache, anguish, grief
damua[a]	2.54	1	regret
grina[b]	2.54	0	intense feeling
samintasuna	2.53	0	sorrow
desamodioa[a]	2.52	0	estrangement, sad indifference
urduritasuna	2.51	1	nervousness, uneasiness, anxiety
zoramena	2.51	0	wild excitement
atsekabea	2.50	0	grief, sorrow

Table 3 (*Continued*)

Emotion word	M	UP	English definition
jeloskortasuna[a]	2.50	0	jealousy
txundidura[a]	2.49	6	bewilderment
errukia	2.48	0	pity, compassion
lastima[a]	2.47	1	pity
higuina	2.46	14	revulsion, disgust, repugnance; hatred, loathing
dolua[a]	2.43	0	mourning, sorrow; regret, repentance
ernegazioa[a]	2.43	7	feeling fed up
dolumina[a]	2.42	0	sympathy (condolence)
lilura[a]	2.42	0	fascination
antsietatea[a]	2.41	0	anxiety
goibeltasuna	2.41	0	sadness
nahigabea	2.41	0	sorrow, grief, affliction
espantua[a]	2.40	0	fright, scare
gupida[b]	2.39	4	mercy, compassion, pity
egonezina	2.38	0	restlessness, anxiety
inbidia[a]	2.38	0	envy
lasaitasuna[b]	2.38	0	ease, tranquility; relief
nazka[b]	2.37	0	disgust, repugnance, revulsion
aztoramena[a]	2.36	1	nervous agitation, excitement
optimismoa[a]	2.35	0	optimism
bihotzaldia	2.33	9	feeling (of the heart)
estutasuna	2.33	1	uneasiness, anxiety
harridura	2.32	0	surprise, amazement
sumintasuna	2.27	10	exasperation
sufrimendua[a]	2.26	0	suffering
ezinikusia	2.25	0	bitterness, ill will
pietatea[a]	2.25	0	pity
estimua[a]	2.23	3	esteem, appreciation
adiskidetasuna	2.21	0	friendship
antipatia[a]	2.21	0	antipathy
bihozberatasuna	2.21	5	tenderheartedness, sympathy
mespretxua[a]	2.21	0	scorn, contempt
mirespena[a]	2.20	1	admiration
desprezioa[a]	2.19	0	disdain
atsegina	2.18	0	delight
zoramendua	2.18	11	insanity
erremina	2.17	14	resentment
nahia	2.17	0	wish, will
samurtasuna	2.17	1	tenderness
bekaizkeria	2.15	5	envy
beroaldia[b]	2.15	0	fit of rage
gura[a]	2.15	2	want, wish
umorea[a]	2.15	0	amusement, good humour
apatia[a]	2.13	0	apathy
beldurgabetasuna	2.12	1	fearlessness
etsaitasuna	2.12	0	hostility, enmity
baikortasuna	2.09	0	optimism
adorea[a]	2.08	0	courage

Table 3 (*Continued*)

Emotion word	M	UP	English definition
gaizkinahia	2.07	2	spite, ill will, aversion
mesfidantza[a]	2.07	0	distrust, mistrust, suspicion
sosegua[a]	2.07	1	tranquility
itxaropena	2.05	0	hope
areriotasuna	2.04	2	enmity, hostility
bakardadea	2.04	0	loneliness
trankiltasuna[a]	2.03	1	tranquility
agitazioa[a]	2.02	0	agitation
harrotasuna	2.02	0	arrogance, haughtiness, pride
miserikordia[a]	2.02	0	clemency, mercy
gogogabetasuna	2.01	2	enervation, apathy, indifference
ziurgabetasuna[a]	2.01	2	uncertainty
konfiantza[a]	2.00	0	trust
gogobetetasuna	2.00	11	contentment
bihozgabetasuna	1.99	0	heartlessness, lack of pity
euskaltzaletasuna	1.99	0	love for Basque language
koldartasuna	1.98	1	cowardice
baretasuna	1.96	1	calmness
ezkortasuna	1.96	1	pessimism
abertzaletasuna[c]	1.95	0	(Basque) nationalism
gozotasuna	1.95	2	sweet intimacy
mina	1.95	0	sorrow, pain
kemena	1.93	1	vigor
ziurtasuna[a]	1.93	0	certitude
begikotasuna	1.92	3	fondness, affection
dohakabetasuna[a]	1.92	7	misery (from misfortune)
kontsolamendua[a]	1.91	0	consolation, sympathy
ausartasuna[a]	1.90	0	courage, bravery; boldness, fearlessness
onginahia	1.90	0	kindness, benevolence
soberbia[a]	1.90	0	haughtiness, arrogance

Note: Words without a superscript are probably ancient Basque words. [a]Words probably borrowed from other languages. [b]Words of uncertain origin. [c]A neologism.

taken from the *Morris Student Plus: Euskara-Ingelesa, English-Basque Dictionary* (Morris, 1998) and the *Basque-English, English-Basque Dictionary* (Aulestia & White, 1992). The definitions were modified in some cases based on judgements concerning contemporary usage by one of the authors (RU), a linguist.[9]

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[9] Multiple Basque words sometimes receive the same one-word English translation because they are closely synonymous or, in some cases, the Basque words have subtle nuances not captured in a brief English translation. The same thing would happen if a similar number of English words were translated into Basque; some would receive the same Basque translation. The brief translations we provided seem preferable to attempting to spell out a long English translation for each word.

The words with the 12 highest prototypicality ratings were *poza* (joy, delight, happiness), *amorrua* (rage, anger, wrath), *beldurra* (fear, dread, fright), *alaitasuna* (happiness, joy), *zoriontasuna* (happiness), *ikara* (scare, fright, terror), *errabia* (rage, fury, wrath), *pena* (sorrow), *pasioa* (passion), *gorrotoa* (hate), *izua* (fear, terror, fright), *maitasuna* (love). Each of these words is closely related to one of the five basic-level categories obtained in the American and Indonesian studies: love, happiness, anger, sadness, and fear. The reason for choosing the number 12 is that this is the number of emotion words analysed by Frijda and colleagues (Frijda, Markam, Sato, & Wiers, 1995; van Goozen & Fridja, 1993) in studies of six European countries (Belgium, France, Switzerland, Italy, The Netherlands, England, and Turkey), three Asian countries (Japan, Surinam, and Indonesia), and Canada, allowing us to compare their results with ours. In their study, participants were not asked to rate emotion terms for prototypicality, but rather were asked to write down all of the emotions they could think of in 5 minutes. Still, we can look at the top 12 emotions listed and compare them with the top-rated 12 in the present study and the previous rating studies conducted in the US and Indonesia. In all 13 countries (with Indonesia appearing twice, once in Frijda's studies and once in ours), words related to happiness and sadness appeared among the top 12; in 12 of the 13 countries, words related to love, anger, and fear appeared as well. Additional concepts were mentioned in only a few places (crying, laughter, jealousy, longing, excitement, surprise, disgust, pity, boredom, pride, shame, confusion, and stress), and of these, the most popular, crying and laughter, we consider to be emotion-related behaviours (reflecting mainly sadness and happiness, respectively) rather than emotions per se. Overall, what stands out is the ubiquity of love, happiness, sadness, anger, and fear.

There were no statistically significant gender differences in prototypicality ratings of the top 12 emotion names, and only two significant gender differences in ratings of the other 112 words in the list.[10] Given only two differences significant at the .05 level from a possible 124, both may be due to chance. What stands out is the high level of agreement between men and women, indicating that the ratings were highly reliable.

Of special interest in the ratings was the inclusion among the top 124 words of *euskaltzaletasuna*, love for the Basque language, and *abertzaleta-suna*, love for the Basque nation. The reason for the high prototypicality ratings of these two emotions, which are associated with Basque nationalism,

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[10] Men rated *bakardadea*, loneliness, higher than women, with the means being 2.29 and 1.82, respectively; $t(102) = 2.10$, $p < .05$. Men also rated *gogobetetasuna*, contentment, higher than women, with means of 2.24 and 1.77, respectively; $t(91) = 2.15$, $p < .05$. On average, these two words occupied the 100th and 108th positions in the list of 124, so neither was very prototypical.

is that the Basque region has a distinct cultural identity, separate from that of the countries in which it is now included. The people in our sample know and use the Basque language, which is associated by them with affection for Basque culture and a separatist political movement. These are issues about which many of them experience strong emotions. As will be seen, the decision to include words related to the Basque language and Basque nationalism in the final list was important for the results of Study 2.

STUDY 2

In Study 2, a different sample of Basque participants sorted the 124 terms listed in Table 3 according to similarities and differences between the emotions they represent. The sorting results were then aggregated and submitted to a hierarchical cluster analysis, which can be interpreted in terms of hierarchical levels: superordinate, basic, and subordinate.

Method

Participants.   A total of 102 students (48 men, 54 women) from the University of the Basque Country participated in the study. They ranged in age from 18 to 43 years, with a mean of 20.86 years ($SD = 3.25$). Each completed the sorting task individually in a laboratory. As an inducement to participate, each received a number for a raffle in which three prizes of 60 Euros each were awarded. The study was conducted in the Basque language, and 94 of the 102 participants listed Basque as their first language. The remaining 8 listed Spanish as their first language but were fluent in Basque. All 102 participants in the study were taking some or all of their university courses in Basque, and were both speaking and writing in Basque.

Procedure.   Participants were told they were taking part in a study aimed at understanding human emotions and the ways in which emotions are conceptualised by speakers of various languages. In particular, they were told that the study concerned similarities and differences among a wide variety of emotions. The experimenter gave each participant a deck of 124 small white cards, on each of which was typed one of the emotion names listed in Table 3. The participant was asked to sort the cards into similarity-based groups, using their own ideas about similarity and difference. They were told that they could reorganise their categories as many times as they liked until they felt satisfied. There was no time limit. They were also offered the possibility of asking the meaning of some of the words, but they were asked not to do so unless they were truly unsure of the meaning. Brief Basque and Spanish definitions were typed on small cards and shown to

participants only if they asked about a particular word. The Basque definitions were taken from *Euskal Hiztegia* (Sarasola, 1997) and Spanish ones from the Spanish-Basque dictionary mentioned earlier (Elhuyar, 2000). More than half of the participants asked to see at least one definition but not more than two.

Because no limit was placed on either the number of categories or the number of terms in each category, these parameters varied widely across participants (as they did in the parallel American and Indonesian studies). One Basque participant separated all 124 words into only three categories; at the other extreme, one sorted them into 42 categories ($M = 17.75$, $SD = 9.53$). The mean level of differentiation, 18 categories, suggests that the average person in the sample divides the emotion domain into 18 or so subordinate-level emotions. Some make many fewer distinctions (on average, the ones between the five largest basic level categories described below); some—perhaps the most cognitively sophisticated in this knowledge domain, as implied by Shaver et al.'s (1992) studies of emotion language learning—distinguish among many more kinds of emotions.

Results and discussion

We constructed a 124×124 co-occurrence matrix for each participant, with 1 indicating that a particular pair of emotion terms was placed in the same category and 0 indicating that the members of the pair were placed in different categories. The resulting 102 matrices (from 102 participants) were aggregated to form a single 124×124 matrix in which cell entries could range from 0 to 102, indicating the number of participants who placed a particular pair of words into the same category. For the purpose of clustering, we transformed this matrix into a distance or dissimilarity matrix by subtracting the constant 102 from each entry. We then submitted the dissimilarity matrix to a hierarchical cluster analysis using the *hclust* program's average distance method (Everitt, 1980; Hartigan, 1981) in S-Plus 2000 (Mathsoft, 1999). This is the same method used in our previous studies. The results are shown in Figure 1 and summarised in Table 4.

The clusters that we interpret as representing subordinate level categories of emotions appear in the lower regions of the figure. Several of them are fairly large, because we terminated the diagram at a cluster score of 60 (see the scale running along the left side of the hierarchy diagram). This is similar to the level used by Shaver et al. (1987). If we had included the entire diagram, it would have been difficult to present efficiently, and would have shown only that there are small but meaningful distinctions even within some of the subordinate level categories. (The complete cluster diagram is available from the authors on request.)
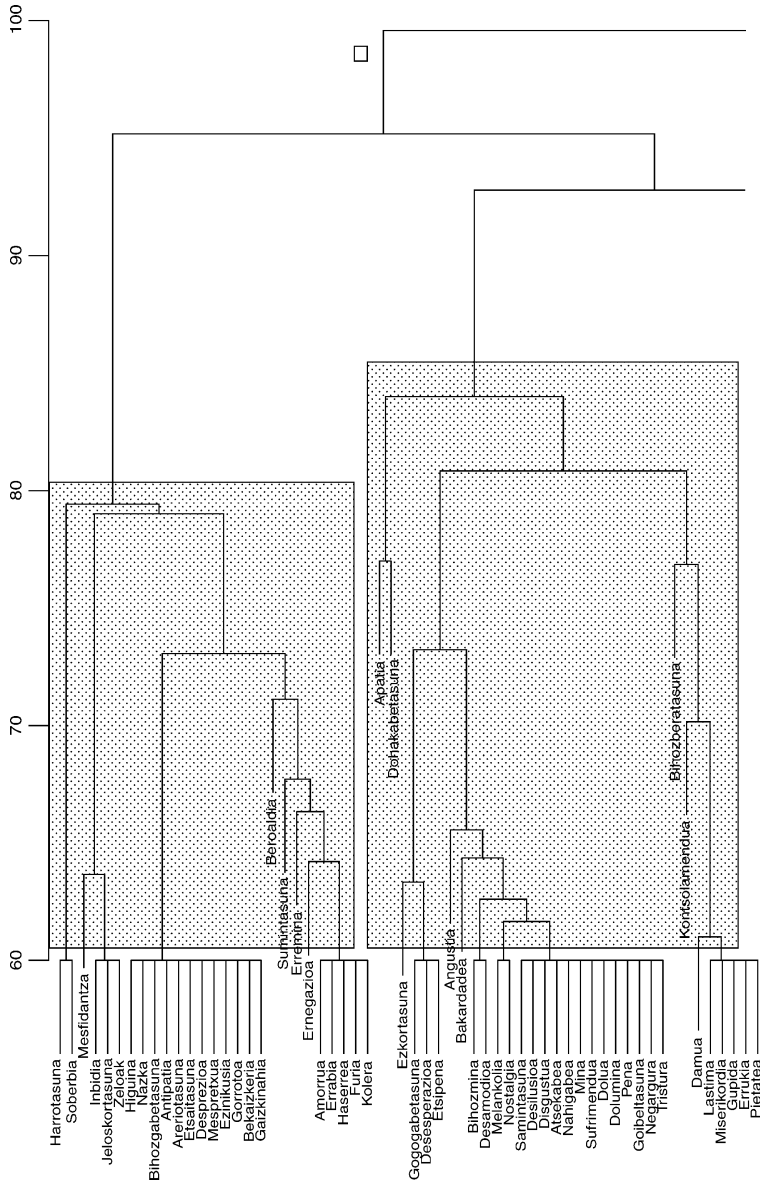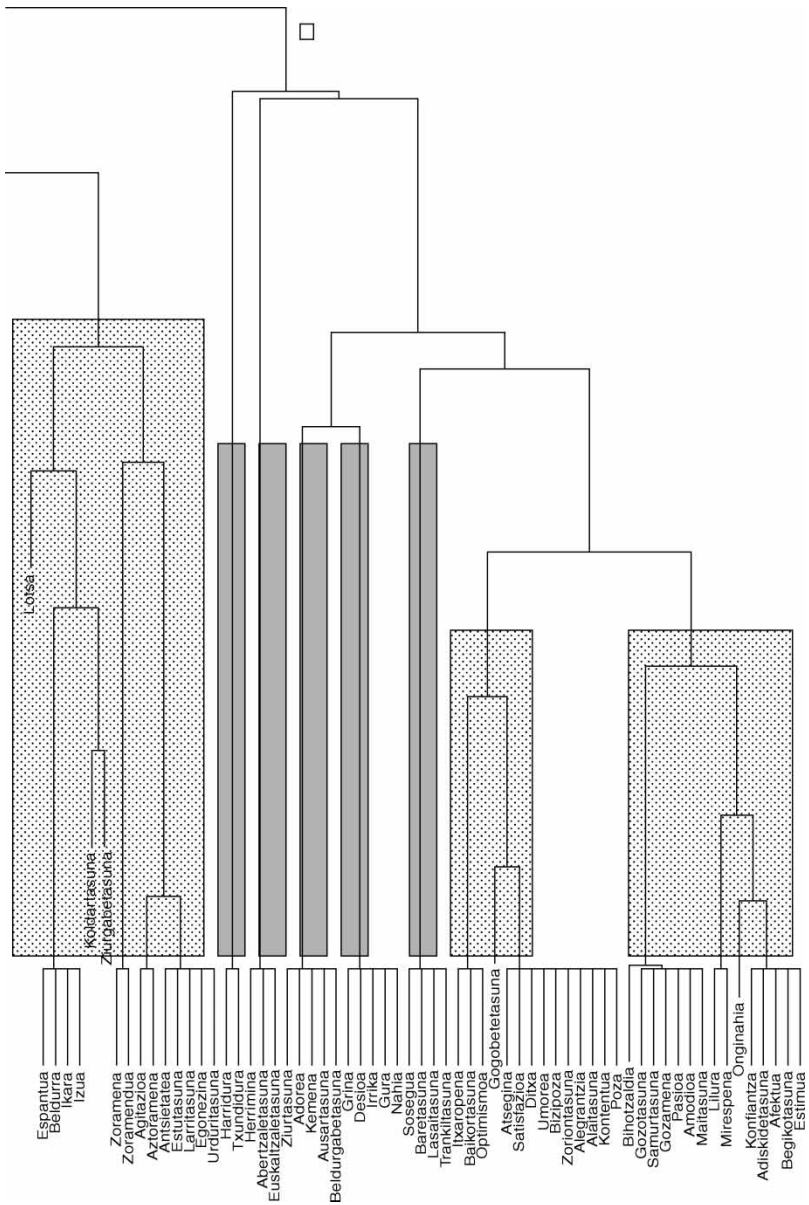
Figure 1. Results of a hierarchical cluster analysis of 124 Basque emotion terms, Study 2. The two small squares near the top mark the branching points for positive and negative emotions (the superordinate categories); the grey boxes at the next level down indicate branching points for the five basic level emotion categories (light grey): *gorrotoa/haserrea* (hatred/anger), *tristura* (sadness), *urduritasuna/beldurra* (anxiety/fear), *poza* (joy/happiness), and *maitasuna* (love); and for the five small groups (darker grey): *harridura* (surprise), *euskalduntasuna* (Basque identity), *adorea* (courage), *irrika* (general desire), and *lasaitasuna* (tranquility).

(Figure 1 continued)

TABLE 4
Five major categories of the Basque emotion hierarchy

Hierarchical levels		
Superordinate	Basic	Subordinate
Positive	*maitasuna* (love)	**(1. romantic love)** *gozamena, gozotasuna, samurtasuna, bihotzaldia, amodioa, maitasuna, pasioa*; **(2. admiration, fascination)** *lilura, mirespena*; **(3. kindness)** *onginahia*; **(4. affection, esteem)** *konfiantza, adiskidetasuna, afektua, begikotasuna, estimua* [4 groups; 15 terms; 12% of the total]
Positive	*poza* (happiness)	**(1. hope, optimism)** *itxaropena, baikortasuna, optimismoa*; **(2. contentment)** *gogobetetasuna*; **(3. happiness, joy)** *umorea, bizipoza, zoriontasuna, alegrantzia, alaitasuna, kontentua, poza, atsegina, satisfazioa, ditxa* [3 groups; 14 terms; 11% of the total]
Negative	*haserrea* (anger)	**(1. arrogance, haughtiness)** *harrotasuna, soberbia*; **(2. distrust)** *mesfidantza*; **(3. envy, jealousy)** *inbidia, jeloskortasuna, zeloak*; **(4. fit of rage)** *beroaldia*; **(5. exasperation)** *sumintasuna*; **(6. resentment)** *erremina*; **(7. feeling fed up)** *ernegazioa*; **(8. anger, fury)** *amorrua, errabia, haserrea, furia, kolera*; **(9. hatred, aversion)** *higuina, nazka, bihozgabetasuna, antipatia, areriotasuna, etsaitasuna, desprezioa, mespretxua, ezinikusia, gorrotoa, bekaizkeria, gaizkinahia* [9 groups; 27 terms; 22% of the total]
Negative	*beldurra* (fear)	**(1. shame, fear in social situations)** *lotsa*; **(2. fear, trembling)** *espantua, beldurra, ikara, izua*; **(3. cowardice)** *koldartasuna*; **(4. uncertainty)** *ziurgabetasuna*; **(5. wild excitement)** *zoramena, zoramendua*; **(6. nervous agitation)** *agitazioa, aztoramena*; **(7. anxiety, nervousness)** *antsietatea, estutasuna, larritasuna, egonezina, urduritasuna* [7 groups; 16 terms; 13% of the total]
Negative	*tristura* (sadness)	**(1. apathy, misery from misfortune)** *apatia, dohakabetasuna*; **(2. pessimism)** *ezkortasuna*; **(3. despair)** *gogogabetasuna, desesperazioa, etsipena*; **(4. anguish)** *angustia*; **(5. loneliness)** *bakardadea*; **(6. crushed, broken-hearted)** *bihozmina, desamodioa*; **(7. melancholia, nostalgia)** *melankolia, nostalgia*; **(8. sadness, sorrow)** *samintasuna, desilusioa, disgustua, atsekabea, nahigabea, mina, sufrimendua, dolua, dolumina, pena, goibeltasuna, negargura, tristura* **(9. tenderheartedness, sympathy)** *bihozberatasuna*; **(10. consolation, sympathy)** *kontsolamendua*; **(11. regret)** *damua*; **(12. pity, mercy)** *lastima, miserikordia, gupida, errukia, pietatea* [12 groups; 33 terms; 27% of the total]

Evaluation of the hypotheses

Inspection of Figure 1 as a whole reveals support for the first hypothesis. As in the American English and Indonesian hierarchies reported in previous articles, in the Basque emotion hierarchy there are two large categories at the superordinate level (hanging from high "branches" marked with squares in Figure 1), containing negative and positive emotions, respectively.

Among the major groups at the next level down are five that are recognisably the same as the five major groups in Tables 1 and 2, taken from the American and Indonesian studies. This result supports the second hypothesis. These five are designated with light grey boxes. From right to left, they are *maitasuna* (love), *poza* (joy/happiness), *urduritasuna/beldurra* (anxiety/fear), *tristura* (sadness), and *gorrotoa/haserrea* (hatred/anger). These five groups and their subcategories are summarised in Table 4 and discussed in more detail below.

There were also five other small groups, all on the positive side of the hierarchy, which are designated with darker grey boxes in the figure. Together, they accounted for 15% of the 124 emotion names (2–4% each). Their contents are summarised in Table 5. The left-most category in this set is clearly surprise (*harridura*). Its appearance as a distinct group, and its position near the positive-negative divide but clearly on the positive side duplicates what happened in the American study (Shaver et al., 1987). In both English and Basque, surprise is unusual in having few words associated with it and in naming an emotion that can be associated with either positive or negative feelings (i.e., there are both positive and negative surprises). Slightly more positive than negative emotions were sometimes placed in the

TABLE 5
Five additional positive categories in the Basque emotion hierarchy

		Hierarchical levels
Superordinate	*Basic*	*Subordinate*
Positive	*lasaitasuna* (tranquility)	*sosegua, baretasuna, lasaitasuna, trankiltasuna* [1 group; 4 terms; 3% of the total]
Positive	*irrika* (general desire)	*grina, desioa, irrika, nahia, gura* [1 group; 5 terms; 4% of the total]
Positive	*adorea* (courage)	*ziurtasuna; adorea, kemena, ausartasuna, beldurgabetasuna* [1 group; 5 terms; 4% of the total]
Positive	*euskalduntasuna* (Basque identity)	*abertzaletasuna, euskaltzaletasuna, herrimina* [1 group; 3 terms; 2% of the total]
Positive	*harridura* (surprise)	*harridura, txundidura* [1 group; 2 terms; 2% of the total]

same category with surprise, perhaps because of common experiences with surprise gifts and parties, but the surprise words were also often sorted into categories with fear-related words. This diverse set of associations results in the surprise category being near the middle of the positive-negative divide.

A second special group in the set of categories summarised in Table 5 has to do with Basque nationalism. As mentioned earlier, one of the words in this category, *abertzaletasuna,* refers to love for the Basque nation; another, *euskaltzaletasuna,* refers to love for the Basque language; the third, *herrimina*, means homesickness, generally used in the special sense of missing the Basque Country when separated from it. Like surprise, this special Basque category of emotions attaches itself to other positive emotions high up on the hierarchy because some participants viewed "loving" the Basque language and country as positive feelings, whereas others viewed them as related to negative feelings, such as sad feelings about the political situation of the Basque Country, wishing that political realities could be different from what they are, and so on.

A third small group, *adorea* (courage), contains, besides *adorea* itself, *ziurtasuna* (certitude), *kemena* (vigour), *ausartasuna* (bravery), and *beldur-gabetasuna* (fearlessness), which is interesting because a similar group appeared within the happiness category in Indonesia (see Table 2) but not at all in the American set of positive emotions (Table 1). Two of the words in this category have Basque roots. Shweder and Haidt (2000) noted a similar category among nine or so basic emotions discussed in ancient Sanskrit, *utsāha*, which they translated as "heroism". Thus, this may be an important emotion that has been salient in many languages but is hypocognised (to use Levy's, 1973, term) in contemporary American English.

A fourth small group, *irrika* (desire/wishing) contains, besides *irrika* itself, *grina* (intense feeling), *desioa* (desire/yearning), *nahia* (wish/will), and *gura* (want/wish). There are somewhat similar terms in the love categories in American English (Table 1) and Indonesian (Table 2), but the terms are not quite as general as most of the ones in the *irrika* category in Basque, which emphasise yearning for something other than sexual consummation or satisfaction.

The final small positive category, *lasaitasuna* (tranquility), contains, besides *lasaitasuna* itself, *sosegua* (tranquility), *baretasuna* (calmness), and *trankiltasuna* (tranquility). There is a somewhat similar subordinate level category in Indonesian (called calmness/security in Table 2, but no similar category in American English (Table 1). According to Shweder and Haidt (2000), there was a similar category, *sama*, in ancient Sanskrit, which they call "serenity/calm". About this emotional state they write: "Curiously, one of the faces that US graduate students seemed to identify without much difficulty is the Sanskrit face of serenity" (p. 402). Thus, this may be another emotional state that is hypocognised, though recognisable, in the US.

By virtue of this fragmentation of positive emotions, the group we are calling joy/happiness (*poza*), is smaller in the present study (14 terms, 11% of the total) than in either the American or the Indonesian study (25% and 21%, respectively). If some or all of the other small positive emotion categories were considered kinds of happiness, then the percentages would be roughly the same across all three studies. Within the *poza* category per se, there are three major subordinate categories: hope/optimism, contentment, and core joy/happiness, all of which appeared in the American study as well and two of which (core joy/happiness and contentment) appeared in the Indonesian study. Of the four small positive categories in the Basque hierarchy (setting aside Basque nationalism for a moment), tranquility also appeared in the Indonesian study; desire appeared in both the American and Indonesian studies, but more associated with love than with happiness; courage appeared in the Indonesian study; and, as mentioned above, surprise appeared in the American study.

Within the love (*maitasuna*) category there are separate subcategories concerned with romantic/sexual love and affection/esteem/fondness, which were also subcategories of love in the American and Indonesian studies. The relative size of the love category, 15 terms out of 124 (12%), is identical to the corresponding proportion in the American study but lower than the proportion of love words (21%) in the Indonesian study. The affectionate love group contains three separate subgroups concerned with admiration, fascination, and attraction; kindness; and affection/esteem, all issues covered as well in the American and Indonesian love categories.

The negative superordinate category contains two large subcategories, one of which quickly splits into two. Examination of the contents of the three large categories (designated with light grey boxes on the left side of Figure 1) indicates that they parallel the American English and Indonesian anger, sadness, and fear categories. This set of findings supports our second hypothesis. In both the American English and Indonesian studies, sadness and fear were also part of a single negative category distinguished from anger, but that category quickly split into two distinct groups at the next level. We therefore consider the Basque results, like the American and Indonesian results, to indicate that there are three large negative categories at the basic level: *haserrea* (anger), *tristura/goibeltasuna* (sadness), and *beldurra* (fear).

The Basque anger category (27 terms, 22% of the total) is very similar in relative size to the American (22%) and Indonesian (25%) anger categories. The issues of jealousy, envy, hatred, contempt, and exasperation, in addition to rage, are dealt with in all three languages. Interestingly, as in both the American and Indonesian studies, Basque anger includes disgust and contempt, which are often treated as distinct emotions (expressions) by researchers who focus on facial expressions (e.g., Ekman, 1992; Izard, 1991).

In all three countries, being disgusted or contemptuous is viewed as a form of anger. Rozin and his associates (e.g., Rozin, Haidt, & McCauley, 1993) have shown how the literal meaning of disgust (a primitive reaction to bad tastes and smells – i.e., to stimuli that are "rotten") gets transformed, developmentally and culturally, into a more figurative meaning. Our results suggest that the figurative meaning is generally conceptualised as a form of anger, which may be why cross-cultural rating studies often document confusion between what are supposed to be distinguishable disgust and anger facial expressions (Russell, 1994).

The fear categories in the Basque Country, the US, and Indonesia are also similar in a number of ways. The Basque fear category contains 16 terms (13% of the total); the corresponding percentages for the US and Indonesia are also 13%. In all three cultures, the fear category contains both core fear and anxiety subcategories. In the Basque hierarchy, shame falls within the realm of fear and anxiety, whereas in the US and Indonesia it is part of sadness.

Finally, the sadness categories in the three languages are also quite similar. In the Basque data, there are 33 words in the sadness category (27% of the total); the corresponding figures for the US and Indonesia are 28% and 20%. In all three cultures, the sadness category includes despair, grief, remorse, regret, pity, and sympathy.

As for the last hypothesis, concerning the linguistic history and composition of the Basque emotion lexicon, we can see in Table 3 that 58 words are probably ancient and pre-Roman,[11] 59 words are probably borrowed from other languages (especially Latin), 6 words have an uncertain origin, and one is a neologism (*abertzaletasuna*, "Basque nationalism"). More important than the fact that roughly half of the emotion lexicon assessed in this study was borrowed from other languages is the fact that all major categories at the basic level (love, happiness, anger, fear, and sadness) correspond to the five major categories found in English and Indonesian, and all contain several ancient Basque terms. Moreover, even at the subordinate level, most of the emotion categories (70%) contained ancient Basque terms.[12]

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[11] We view likely pre-Roman words as native terms. Only Latin and other Romance-language words were considered as non-native in the present study because it is uncertain what the other sources of Basque words might have been (e.g., Celtic or German or Iberian). Many emotion words are compounds or derivates. For compounds, all of the elements had to be native words for a word to be considered native. For instance, we considered *dolumin(a)* a borrowed word because its first element, *dolu,* is of Roman origin, even though the second element, *min,* is a native word. And we considered *bakardade(a)* a native word because the base of the derivative *bakar* is a native word, although the ending is from Latin, *-tate(m)*.

[12] The absence of native words in a subgroup does not necessarily mean that there has never been a native word to name that emotion. Sometimes a borrowed word, when introduced into a language, gradually replaces a native word with a similar meaning.

Category names

In the paragraphs immediately above, we have used particular Basque terms to label the basic level categories corresponding to love, happiness, anger, fear, and sadness in the US study (Shaver et al., 1987). These terms include the ones that those of us authors who are Basque would use for the categories, but we also took an empirical approach to naming the clusters, and the results are worth considering. For every term in each of the five major clusters, we computed the average number of co-occurrences with other members of its cluster as well as the average number of co-occurrences with noncategory members. The second number was then subtracted from the first, and the category members were arranged in terms of their category centrality, or prototypicality. The top five terms in each of the five lists are shown in Table 6. In three of the five cases, the category names chosen by the Basque authors – *maitasuna* (love), *poza* (happiness), and *tristura* (sadness)

TABLE 6
The five most prototypical terms for each of the basic level emotion categories

Basic level category	Basque word	English translation
maitasuna (love)	*maitasuna*	love
	afektua	affection
	amodioa	love
	adiskidetasuna	friendship
	gozotasuna	sweet intimacy
poza (happiness)	*poza*	joy, delight, happiness
	alaitasuna	elation, happiness, joy
	kontentua	happiness
	zoriontasuna	happiness
	alegrantzia	joy
urduritasuna/beldurra (anxiety/fear)	*urduritasuna*	nervousness, uneasiness, anxiety
	larritasuna	anguish, anxiety
	estutasuna	uneasiness, anxiety
	ikara	scare, fright, terror
	izua	horror, fear, terror, fright
tristura (sadness)	*tristura*	sadness
	negargura	tearfulness, urge to cry
	pena	sorrow
	dolua	mourning, sorrow; regret, repentance
	goibeltasuna	sadness
gorrotoa/haserrea (hatred/anger)	*gorrotoa*	hate
	etsaitasuna	hostility, enmity
	ezinikusia	bitterness, ill will
	mespretxua	scorn, contempt
	areriotasuna	enmity, hostility

– appeared in first place empirically. For the other two basic categories (fear and anger), the empirical procedure produced different names than would have been chosen by the authors.

One somewhat unusual category name was *urduritasuna/beldurra*. As happened in Indonesia, the most prototypical member of what American psychologists call the "fear" category, *urduritasuna* (nervousness, uneasiness, anxiety), refers more to nervousness or anxiety than to fear, as do also the second and third most prototypical terms in the category. The word *beldurra* (fear), which was preferred by the authors, occupies the sixth position in the list and so is not shown in Table 6. This pre-eminence of words meaning anxiety reflects the slightly higher number of such words in the Basque "fear" category. This does not, we believe, mean that Basque people do not experience fear as Americans do, but the term *beldurra*, which professional psychologists might choose as the generic name for the entire category, refers more commonly, although not exclusively, to the fear someone would feel when exposed to an objective threat that might cause physical pain. Because physical fear is not so salient in contemporary society, there may be special emphasis now on other, milder, less concrete kinds of fear/anxiety (e.g., social anxiety, test anxiety, ambivalence, and moral anxiety). We decided to add the word *beldurra* to the category name because it captures the sense of the term fear often used in discussions of basic emotions by psychologists. (Other words meaning fear, such as *ikara* and *izua*, name a stronger form of fear.) But it remains of interest that a different word, *urduritasuna*, was chosen as the category name by a statistical procedure.

The other emotion category that ended up with a complex name was "anger", where the term preferred by the authors, *haserrea* (anger), placed ninth in the empirically determined list rather than first. The top five words refer more to hatred, the kind of hostility typically directed to a person or group. These words all came from the same subcategory of "anger", that is, the largest subcategory in that basic level group (containing 12 words). Interestingly, this subcategory included many ancient words, suggesting that it might have been especially salient as an early prototypical form of anger. In naming the "anger" category, we decided to include both the most prototypical term (*gorrotoa*, "hatred") and the generic one often used in professional psychology (*haserrea*, "anger") to facilitate comparisons with other languages and psychological literature, but it is worth noting that *gorrotoa* (hatred) may be a better term for the category in Basque.

GENERAL DISCUSSION

At the superordinate level (positive vs. negative emotions), the Basque emotion hierarchy is quite similar to the American, Indonesian, and Chinese

hierarchies, suggesting that the distinction between positive and negative emotions is fundamental and cross-culturally universal. This fits with Wierzbicka's (1999) claim that most emotion names carry within their meaning one of two frequently recurring core semantic components: "feel good" and "feel bad". Because the terms used in our study of the Basque emotion lexicon consisted only of one's rated by Basque speakers as prototypical of the emotion domain and sorted by such speakers into groups that split primarily into positive and negative superordinate categories, we can be quite confident that emotions (a large category of mental states named in each of the languages we have studied so far, plus ancient Sanskrit) are viewed fundamentally in terms of positivity and negativity.

Also common among the American, Indonesian, and Basque results are five large basic level emotion categories: love and happiness within the positive superordinate category and anger, fear, and sadness within the negative superordinate category. In the Basque study, however, there were also five additional smaller positive categories: surprise, Basque nationalism, desire/wishing, courage, and tranquility. The existence of the surprise category is not unexpected; it appeared in the American study as well and is frequently listed among biologically basic emotions by researchers who study facial expressions. But the Basque identity category is unique among the findings of our several studies. In none of those studies did emotion words related to national identity or nationalism get included in the final pool of terms to be sorted. The issues of Basque separatism and cultural continuity are so important to the people who participated in our research (people, recall, who were selected because they were fluent in the Basque language) that modern emotion terms related to love for the Basque language and nation were viewed as naming prototypical emotions. This is an example of the way local concerns can shape a generally fairly universal conception of the emotion domain.

The other three small categories within the positive superordinate category – desire, courage, and tranquility – also indicate areas of difference, or at least different emphasis, in different cultures and languages. These are examples of what Levy (1973) called hyper- and hypocognition of certain kinds of emotions. American college students did not create distinct categories of emotions related to courage or tranquility, and they viewed desire mainly in terms of sexual longing. The Basque representation of these emotions was more similar both to that of Indonesian-speaking college students and writers of ancient Sanskrit. Thus, they may point to areas of emotion that have been hypocognised in American society and American psychology. (So far, no one has proposed a cross-cultural facial expression for tranquility, even though Shweder and Haidt, working from ancient

Sanskrit texts, decided to see whether American students could recognise a tranquility expression and found that they could.)

Even considering these interesting cross-cultural differences, it is still important that the now-familiar five major emotion categories appeared again in the Basque data. Why might these five kinds of emotion be "cognitively basic"? As mentioned by Shaver et al. (2001), the distinction between happiness and sadness corresponds to a fundamental issue in nearly every contemporary analysis of emotion: Emotions depend on a person getting or not getting what he or she wants (or, sometimes, getting or not getting what he or she does not want), with common implications for how the person feels, "good" or "bad". Wierzbicka (1999) included wanting and getting as components of a universal human semantics. In the psychology of learning, social exchange, and behaviour management, the distinctions between approach and avoidance, reward and punishment, and positive and negative reinforcement are fundamental, as they are in physiological psychology. As stated in a leading textbook (Westen, 1999, p. 233): "Positive reinforcement occurs because a consequence *feels good*, negative reinforce-ment occurs because termination of an unpleasant event *feels better*, and punishment occurs because a consequence *feels bad*".

The fear-anger distinction corresponds to the well-known distinction between fighting and fleeing (or freezing) in response to dangers and threats, another matter of great adaptive significance. From Cannon (1932) to the present (e.g., Panksepp, 1998), this distinction has been traced by physio-logical psychologists to particular pathways in the brain. The fight-flight distinction, like the happiness-sadness distinction, is a fundamental product of biological evolution that would be difficult for people in any culture at any time in history to overlook.

Love has been mentioned much less often than happiness, sadness, fear, and anger in lists of biologically basic emotions (Shaver, Morgan, & Wu, 1996), but clearly, sexual mating, reproduction, parenting, and maintaining relationships with kin and reciprocally altruistic relationships with friends and neighbors are fundamental issues for humans. As explained by attachment theorists (Cassidy & Shaver, 1999), evolution has equipped humans with an "attachment behavioural system" that increases the likelihood of survival and reproduction by maintaining a person's proximity to attachment figures – relationship partners who provide protection and support. Because of the way the attachment behavioural system is constructed, loving someone is both highly pleasurable, when all goes well, and potentially very painful when attachment relationships are disrupted by separation or loss.

We predict that in future studies of other languages the same five basic emotions will appear, perhaps accompanied by others that are less prominent but also biologically universal but currently hypocognised in

the field of emotion. Future studies of additional languages, as well as other kinds of emotion research, are needed to clarify and flesh out the picture.

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