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The size of shame and pride

Testing metonymy in the figurative representation of moral emotions

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We investigate the figurative size (BIG or SMALL) that more naturally fits the conceptual representation of the moral emotion concepts PRIDE and SHAME. We hypothesize the pairings PRIDE-BIG and SHAME-SMALL to be more natural than their counterparts, because of the emotions' expressive profile: pride's expanded body posture makes us look big, while shame's shrunk body posture makes us look small. These effects are part of the folk model of PRIDE and SHAME observed in language and the mapping can be best described as metonymic. An Implicit Association Test is used to investigate the existence of these conceptual pairings in Spanish. Faster reaction times and fewer errors were observed for metonymy-congruent compared to incongruent pairs. These results provide the first empirical evidence of a cognitive association coherent with our hypothesized metonymic link and constitute an empirical psycholinguistic contribution to the study of conceptual metonymy.

Keywords: metonymy, empirical, IAT, pride, shame, size

1. Introduction

Emotion conceptualization has been the object of study of Conceptual Metaphor Theory (CMT) from the beginning. Since Lakoff and Kövecses' (1987) seminal work on anger in American English, the range of emotion concepts and languages investigated has grown exponentially (e.g., Ansah, 2014; Athanasiadou, 1998; Barcelona, 1986, 1995; Ding, 2011; Emanatian, 1995; Forceville & Paling, 2021; Kövecses, 2000, 2015; Maalej, 2004; Matsuki, 1995; Ogarkova, 2007; Ogarkova & Soriano, 2014a, b; Ponsonnet, 2014; Soriano, 2005; Stefanowitsch, 2004; Taylor & Mbense, 1998; Yu, 1995, among many others). The popularity of emotion research in CMT is probably due in part to at least three factors. First, emotions are

relatively abstract conceptual domains, lending themselves very naturally to the canonical function of conceptual metaphor of representing the abstract in terms of the concrete. Second, emotional experiences have a very salient physiological and behavioral component, which makes them excellent examples of how abstract concepts can be grounded in physical sensory-motor experience (i.e., emotion concepts are good examples of embodied cognition). And third, CMT scholars have probably not been impervious to the growing interest in emotion and other affective phenomena affecting all disciplines of scientific inquiry, which has come to be known as the era of *affectivism* (Dukes et al., 2021).

Not all emotions have received equal attention, though. *ANGER*, for example, is one of the most investigated ones, while other moral emotions like *PRIDE* and *SHAME* have received comparatively less attention (for a definition of moral emotion and how shame and pride fit in the category, see Cova et al., 2015). Most of the CMT work on *PRIDE* and *SHAME* has focused on English (including diachronic accounts) (Kövecses, 1986, 1990, 2000; Tissari, 2006a, b; Díaz-Vera & Manrique-Antón, 2015), but it also includes less investigated languages like German (Oster, 2010), Serbian (Bročić, 2018, 2019), or Persian (Bakhtiar, 2018). Interestingly, these works suggest that the underlying system of conceptual metaphors and metonymies contributing to the representation of *PRIDE* and *SHAME* is reasonably stable across languages, at least in their most general formulation. A summary of reported mappings is presented in Tables 1 and 2. Table 1 includes mappings reported for *PRIDE* and related concepts (*VANITY*, *CONCEIT*, *DIGNITY*, *SELF-ESTEEM*, *SELF-RESPECT*) in present-day English, Early Modern English, Late Modern English, Old English, German, Spanish and Serbian (Kövecses, 1986, 1990, 2000; Tissari, 2006b; Oster, 2010; Bročić, 2018, 2019). Table 2, reports on mappings for *SHAME* and related concepts (*EMBARRASSMENT*, *MODESTY* and *GUILT*), in present-day English, Late Modern English, Early Modern English, Middle English, Old English, Old Norse, and Persian (Holland & Kipnis, 1995; Kövecses, 2000; Tissari, 2006a; Bakhtiar, 2018; Díaz-Vera & Manrique-Antón, 2015; Bročić, 2018). Most mappings are shared with other emotions, of course, since there are hardly any emotion-specific metaphors or metonymies (Kövecses, 1998). One mapping appears to be specific to both *PRIDE* and *SHAME*, though: the association with *ECONOMIC VALUE* or being a *VALUABLE/ PRECIOUS OBJECT/A COMMODITY* (Kövecses, 1998, pp.131–132). And a few other mappings seem to be specific of one or the other emotion only. *PRIDE*-specific mappings, for example, include the metonymy sources *CHEST OUT* and *HEAD HIGH*, as well as the metaphor source domain *BIG*. Specific to *SHAME* seem to be the metonymic source *HIDING/ BLOCKING OUT THE WORLD*, and the metaphorical source domain *SMALL*.

Table 1. Source domains in the cross-cultural conceptualization of PRIDE

Metonymy (... FOR PRIDE)	Metaphor (PRIDE IS (A) ...)
ERECT BODY POSTURE	FLUID IN THE BODY-CONTAINER
CHEST (UNNATURALLY) OUT	VALUABLE OR PRECIOUS COMMODITY/ ECONOMIC VALUE
HEAD HELD (UNNATURALLY) HIGH	BLINDNESS
INCREASED HEART RATE	SUPERIOR
REDNESS IN THE FACE	OPPONENT/ ENEMY (e.g., DANGEROUS ANIMAL)
BRIGHTNESS IN THE EYES	HUMAN BEING (personification)/ LIVING BEING
INTERFERENCE WITH ACCURATE PERCEPTION	HEAT (e.g., FIRE, BOILING FLUID)
INTERFERENCE WITH NORMAL MENTAL FUNCTIONING	WARMTH
THINKING ONE IS UNIQUE	COLD
SMILING	LOCATION / BOUNDED SPACE
SPECIFIC FORMS OF WALKING	CONTAINER
OSTENTATIOUS/THEATRICAL BEHAVIOR	SUBSTANCE (quantifiable)
BOASTING/ TELLING PEOPLE ABOUT ACHIEVEMENTS	OBJECT (e.g., HIDDEN, POSSESSED, TRANSFERABLE, DAMAGEABLE...)
	INSTRUMENT/ WEAPON
	BURDEN (e.g., A CROSS)
	PLANT
	IN THE HEART
	IN THE EYES
	LIGHT
	UP/ HIGH (PRIDE OF A CONCEITED PERSON IS)
	BIG (A CONCEITED PERSON IS)
	INFLATED OBJECT (VANITY IS)

This body of research suggests that the source domain of SIZE plays a particularly relevant role in the representation of both SHAME and PRIDE, helping to distinguish conceptually between the two. Comparing both emotions, Kövecses (2000, p.33) observes that BIG – pertinent to PRIDE – contrasts with DECREASE IN SIZE – pertinent to SHAME. This link is metonymic in origin. It is well known that, across languages and cultures, cognitively-based feelings (i.e., emotions like pride or shame) can be described via observable bodily symptoms (Wierzbicka,

Table 2. Source domains in the cross-cultural conceptualization of SHAME

Metonymy (... FOR SHAME)	Metaphor (SHAME IS (A) ...)
LOWERING THE HEAD AND UPPER BODY	FLUID IN THE BODY-CONTAINER
HIDING / TURNING FACE AWAY/ BLOCKING OUT THE WORLD	VALUABLE/ PRECIOUS COMMODITY
INCREASED HEART RATE	EXPENSE/ LOST MONEY
REDNESS IN THE FACE	COVER/ CLOTH
INTERFERENCE WITH NORMAL MENTAL FUNCTIONING	NUDITY
HAVING NO CLOTHES ON	ILLNESS/ PHYSICAL INJURY
DISHONOR	NUISANCE/ UNWANTED ENTITY
PUBLIC SCORN	POSSESSED OBJECT
	FLUID
	HEAT (E.G. FIRE, BOILING FLUID)
	OBSTACLE
	CONTAINER/ BOUNDED REGION
	DOWN
	DIRTY
	DARK
	ROTTEN
	BURDEN
	IN THE EYES/ FACE/ FRONT
	IN THE HEART/ SOUL
	IN THE MOUTH
	IN THE STOMACH/ ABDOMEN
	SMALL/ DECREASE IN SIZE
	WORTHLESS OBJECT (A SHAMEFUL PERSON IS)

1999, pp.294–295, Sharifian et al., 2008). And according to emotion psychology, the observable bodily symptoms of pride and shame include a change of body size. Regarding pride, the manifestation of the emotion in body behavior typically includes an expanded body posture: expanded chest, lifted chin, and/or arms raised or akimbo with hands on hips (Tracy & Robins, 2004). Congruently, the folk model of the behavioral effects of PRIDE includes conceptual metonymies such as ERECT BODY POSTURE FOR PRIDE and CHEST OUT FOR PRIDE (Kövecses,

1986; Tissari, 2006b), as illustrated by Examples (1–2) below for English (Kövecses, 1986, p.41) and (3–5) for Spanish (authors’ introspection), in which body behaviors that make us look *big* are used to metonymically refer to PRIDE.

- (1) After winning the race, he walked to the rostrum with his head held high
- (2) After winning the race, he swelled with pride
- (3) *Henchido de orgullo* (Lit. “swollen from pride”, full of pride)
- (4) *Andar con la cabeza bien alta* (Lit. “walk with one’s head well up”)
- (5) *Te habrás puesto así de grande* (Lit. “you must have gotten this big”, you must have felt so proud) (said while indicating big size with the body)

Conversely, the actual physical expression of shame is associated with shrunk body posture and downward head tilt/ head ducked down (Izard, 1971; Keltner, 1995; Lewis, 2004). These manifest a desire not to be seen that is typical of shame, as illustrated in English and Spanish by expressions (6) (from Holland & Kipnis, 1995, p.185) and (7) (authors’ introspection). The postural changes motivate a perceivable decrease in body size, which is part of the folk model of the effects of shame (Kövecses, 2000; Díaz-Vera & Marnrique-Antón, 2015), and is congruent with one’s self-perception as “small”, as illustrated by expressions (8–9) (from Holland & Kipnis, 1995, p.185). The link SHAME-SMALL does not seem to be conventionally encoded in Spanish or English in the same way as PRIDE-BIG, but the conceptual link seems conventional and manifested through other means, like the visual “shameful shrinking” of cartoon characters, which literally shrink in size when embarrassed, ashamed, or humiliated about something (<https://tvtropes.org/pmwiki/pmwiki.php/Main/ShamefulShrinking>).

- (6) I wanted to crawl under a rock
- (7) *Tierra trágame* (lit. “ground, swallow me”)
- (8) I felt small
- (9) I felt so big (said with fingers an inch apart)

As indicated, these patterns in bodily behavior literally entail that the expression of pride typically makes us look bigger, while the expression of shame makes us look smaller (Tracy & Robins, 2007, p.798). This “external size” is crucial to the emotions, since they allow us to recognize them non-verbally, given that facial expression (e.g., a smile or a frown) is not enough to recognize pride or shame (Tracy & Robins, 2007, p.790). These behaviors may also have a valuable evolutionary function. An expanded body posture may have evolved to signal *dominance*, as it happens in other primates such as chimpanzees, where dominance is

associated to largeness and an expansive gait (de Waal, 1989; Jolly, 1985). According to psychologists Jessica Tracy and Richard Robins (2007, p.789):

In our evolutionary history, individuals who increased in size after success likely attracted greater attention, making their success known to a larger social network and thereby enhancing their status more widely. Conversely, the most adaptive social response to failure may be to hide and bow the head so that the face is out of view. The shame expression could, in certain situations, prevent onlookers from clearly identifying the shamed individual, or at least from directing continued attention toward the individual and further damaging that individual's social status.

In sum, because of its grounding in the actual physiological and behavioral profile of the emotions, the association between PRIDE and BIG and SHAME and SMALL, respectively, can be considered metonymic in origin. These mappings are not currently documented in the Córdoba Metonymy Database¹ (Barcelona, 2018, 2019), but they would be hierarchically low-level (Barcelona, 2015) instantiations of the more general metonymy EFFECTS OF AN EMOTION FOR THE EMOTION THAT CAUSES IT (EFFECT FOR CAUSE) (Kövecses, 1986), itself an instantiation within the Causation ICM of the generic PART FOR PART metonymic type (Barcelona, 2015; Kövecses & Radden, 1998). The mapping would then become metaphoric (PRIDE IS BIG, SHAME IS SMALL) through generalization (or decontextualization), one of the two major types of metonymic motivation of metaphors according to Barcelona (2015, p.153). A similar analysis is provided by Barcelona (2000b, pp.43–44) for the metonymic motivation of SAD IS DOWN and by Kövecses and Radden (1998, p.61) for the metonymic origin of ANGER IS HEAT. In the case of PRIDE, Kövecses (1986, p.53) specifically suggests that physiological metonymy is at the basis of the conceptual metaphor A CONCEITED PERSON IS BIG (e.g., *too big for one's boots, having a swelled head*). In Barcelona's words: "the important thing is [...] that emotions and their associated behavioral patterns constitute an experiential block, i.e., a domain, and that each behavioral pattern can provide mental access to the corresponding emotion; in other words, that there can be metonymic connections between them" (Barcelona, 2000b, p.44).

In our study we aim to test the hypothesis that the figurative size (BIG or SMALL) that more naturally fits the conceptual representation of the PRIDE and SHAME moral emotion concepts is BIG for the concept of PRIDE, and SMALL for the concept of SHAME, because of the expressive patterns typically associated to these

1. The Córdoba Metonymy database, led by Antonio Barcelona at the University of Córdoba, is an ongoing project including a hierarchically organized repository of conceptual metonymies in English and Spanish: <http://www.uco.es/investiga/grupos/lincogf/?q=home>

two moral emotions. We aim to provide the first experimental empirical evidence of these conceptual pairings, thus contributing much needed empirical psycholinguistic research to the field of metonymy studies (cf. Barcelona 2015, p.158).

2. Methodology

In order to test the existence of these conceptual pairings (PRIDE-BIG and SHAME-SMALL) we ran an Implicit Association Test (IAT) (Greenwald et al., 1998) of size (BIG and SMALL) and moral emotion (PRIDE and SHAME). The IAT allows us to tap on the implicit salience of the various possible pairings between PRIDE, SHAME, BIG and SMALL.

The IAT was developed by psychologists Anthony Greenwald, Debbie McGhee and Jordan Schwartz, who initially came up with the idea that implicit and explicit memory could be fruitfully applied to the study of social constructs. This methodology has been employed in the study of a great variety of topics, most of them connected to prejudices, evaluative judgements, and stereotypes, like age stereotypes (Hense et al., 1995), attitudes to homosexuality (Banse et al., 2001), attitudes to female authority (Rudman & Kilianski, 2000), attitudes towards cigarette smoking (Sherman et al., 2003) or perceptions of overweight people (Bessenoff & Sherman, 2000), to name just a few examples. Within the area of sociolinguistics, it has been used to measure language attitudes (Rosseel et al., 2015) (see also Campbell-Kibler, 2012 for a review). In relation to emotion, the IAT has been applied to the study of self-esteem (Greenwald & Farnham, 2000) and happiness (Walker & Schimmack, 2008), and to examine the affective connotations (valence, power and arousal) of color terms (Soriano & Valenzuela, 2009).

The IAT measures the automatic associative strength between two concepts, in our case SIZE (BIG vs SMALL) and MORAL EMOTION (PRIDE vs SHAME). An IAT experiment consists of five different stages. The first stage asks participants to categorize a number of words according to the first concept introduced, in our case, SIZE (i.e., they categorize the words as BIG or SMALL; see Figure 1, stage 1). Thus, a number of words related to this category (e.g., *big, small, enormous, tiny*) appear randomly in the center of the screen, one by one, and participants have to press a button to the left or to the right (in our case, the keys “z” or “m” on a Spanish keyboard) to categorize the words according to their meaning. On the right and left top corners of the screen, the names of the categories are always on display as a reminder of the categories to sort words into. The second stage introduces the second concept, in our case, MORAL EMOTION (PRIDE vs SHAME). Thus, words belonging to one of these categories show up one by one on screen and partic-

Participants press the appropriate button to categorize them. The third stage involves both concepts at the same time: participants have to press one key if the word that appears on screen is related to either BIG or PRIDE, and the other key if it is related to either SMALL or SHAME. The fourth stage repeats the first one, but the left-right order of the categories is reversed. Finally, the fifth stage involves again the combination of both concepts, but this time paired in the alternative configuration. In our case, that means that participants had to press a key if the word appearing on screen was related to either BIG or SHAME, and the other key if it corresponded to either SMALL or PRIDE. The critical stages in the design are stages three and five: the goal is to compare how easily (and how accurately) participants associate one combination of concepts (e.g., BIG and PRIDE) relative to the opposite one (i.e., BIG and SHAME). Cognitively congruent associations are expected to yield shorter reaction times and fewer errors than incongruent ones. In our case, PRIDE–BIG and SHAME–SMALL were expected to yield faster and more accurate responses than PRIDE–SMALL and SHAME–BIG.

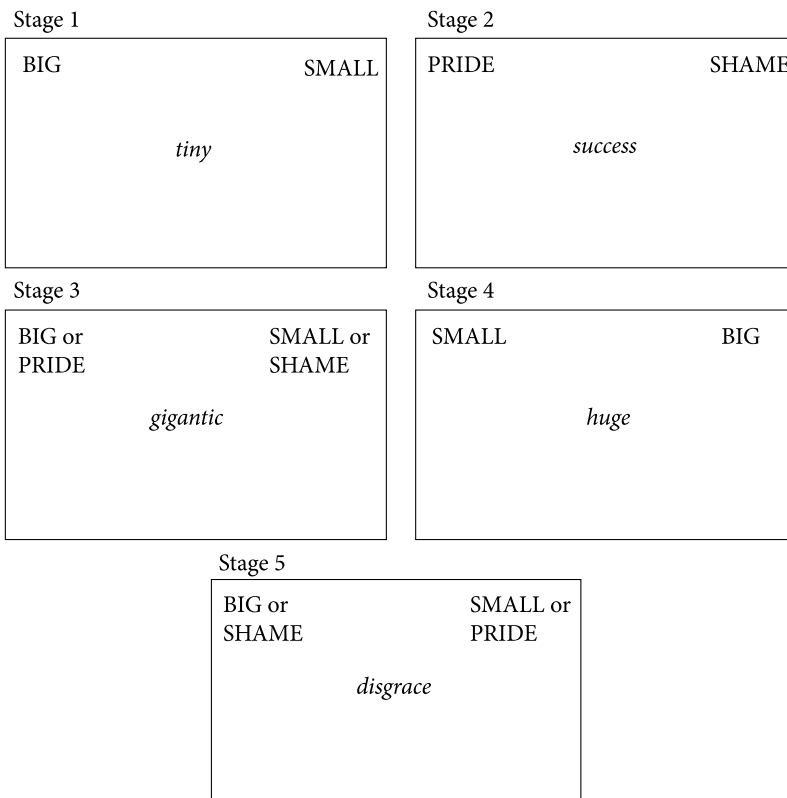


Figure 1. Example of a structure of an IAT experiment

3. Study design and procedure

Forty-two participants (34 female, mean age 21.2), native speakers of Spanish, took part in the experiment in exchange for course credit. The experiment was run using the software package OpenSesame (Mathôt et al., 2012). The order of presentation of the concepts in stages 1 and 2 (SIZE then EMOTION, vs EMOTION then SIZE) and the horizontal ordering of the concepts on screen (left and right positions at the top of the screen) were randomized across participants, as was the order of presentation of the words. Before the experiment began, participants were shown the list of words that belonged to each category. If they made a mistake during the experiment (e.g., they classified a PRIDE word as belonging to the SHAME category, or vice versa), an error sign (a big red X sign) appeared on screen and only disappeared after pressing the correct answer key.

Table 3. Experimental stimuli

Pride		Shame		Big		Small	
<i>Orgullo</i>	Pride	<i>Vergüenza</i>	Shame	<i>Vasto</i>	Vast	<i>Pequeño</i>	Small
<i>Honra</i>	Honor	<i>Deshonor</i>	Dishonor	<i>Abultado</i>	Bulky	<i>Menor</i>	Minor/ smaller
<i>Mérito</i>	Merit	<i>Deshonra</i>	Disgrace	<i>Ingente</i>	Huge	<i>Chico</i>	Small
<i>Éxito</i>	Success	<i>Descrédito</i>	Discredit	<i>Voluminoso</i>	Voluminous	<i>Diminuto</i>	Tiny
<i>Pundonor</i>	Honor	<i>Indecencia</i>	Indecency	<i>Tremendo</i>	Tremendous	<i>Menudo</i>	Small
<i>Logro</i>	Achievement	<i>Mancha</i>	Stain	<i>Mayor</i>	Greater	<i>Reducido</i>	Reduced
<i>Satisfacción</i>	Satisfaction	<i>Indignidad</i>	Indignity	<i>Gigante</i>	Gigantic	<i>Mini</i>	Mini

Table 3 presents a summary of our experimental stimuli. Two norming studies were conducted to select them. In the first one, we focused on the emotion words to make sure that they would be familiar and good exemplars of the intended target categories. Twenty-four native speakers of Spanish (18 female, mean age 32), different from our experimental pool, were asked to rate in an online questionnaire to what extent a list of 22 emotion words (11 PRIDE and 11 SHAME) belonged to the PRIDE or the SHAME category, and to what extent they were familiar with those terms. To answer they had to choose a value on a scale ranging from 1 (“not at all”) to 5 (“very much”). The 14 selected emotion words (7 PRIDE and 7 SHAME) were familiar to our participants ($M_{\text{PRIDE}} = 4.61$, $M_{\text{SHAME}} = 4.46$) and perceived as good exemplars of the target emotion categories, with mean scores well above the middle point of the scale in all cases ($M_{\text{PRIDE}} = 3.96$ and $M_{\text{SHAME}} = 3.51$) (see Tables 4 and 5). The SHAME words were comparatively less prototypical than the PRIDE words, because the translation

equivalent of *shame* in Spanish, namely *vergüenza*, entails both SHAME and EMBARRASSMENT (e.g., Hurtado de Mendoza et al., 2010); thus, depending on which of the two semantic poles the participants had in mind, certain of our “shame” words seemed more or less good examples of the category.

Table 4. Mean prototypicality and familiarity scores for the PRIDE experimental stimuli

Emotion word	PRIDE score	Familiarity score
<i>Orgullo</i>	4.93	4.94
<i>Logro</i>	4.07	4.82
<i>Mérito</i>	4.02	4.87
<i>Satisfacción</i>	3.98	4.97
<i>Éxito</i>	3.93	4.89
<i>Honra</i>	3.79	4.71
<i>Pundonor</i>	3	3.07
MEAN	3.96	4.61

Table 5. Mean prototypicality and familiarity scores for the SHAME experimental stimuli

Emotion word	SHAME score	Familiarity score
<i>Vergüenza</i>	5	4.93
<i>Deshonra</i>	3.71	4.67
<i>Dishonor</i>	3.64	4.71
<i>Descrédito</i>	3.32	4.21
<i>Mancha</i>	3.11	3.57
<i>Indignidad</i>	2.98	4.6
<i>Indecencia</i> (indecency)	2.83	4.55
MEAN	3.51	4.46

Given that the two targeted emotions are marked in valence (PRIDE is typically considered positive and SHAME negative), a second norming study was also conducted to control for the valence of the SIZE words and avoid a mere valence-congruency effect in the IAT. Fifty native speakers of Spanish (44 female, mean age 21.38), different from our experimental pool and from the participants in the first norming study, were asked in an online questionnaire to rate to which extent a list of 27 SIZE adjectives had positive or negative connotations using a 5-point Likert scale ranging from 1 (“very negative connotations”) to 5 (“very positive connotations”), with 3 meaning “neutral”. Participants were asked to

answer quickly using their first intuition. An overall bias in the whole list of adjectives rated was found such that BIG adjectives were on average more positive ($M_{\text{BIG}} = 3.48$) than SMALL adjectives ($M_{\text{SMALL}} = 2.45$), but the difference in valence between the words eventually selected for our experimental set was almost three times smaller ($M_{\text{BIG}} = 3.06$ vs $M_{\text{SMALL}} = 2.71$). In order to select the experimental set, we chose terms in the middle neutral range of the valence scale (mean score between 2.5 and 3.5). When not enough terms were available in this range, the closest ones were chosen to complete the set of 7 (1 more for SMALL and 2 more for BIG). The average valence of our experimental stimuli is presented in Table 6.

Table 6. Valence ratings for the SIZE experimental stimuli

Big	M	Small	M
<i>Gigante</i>	3.57	<i>Chico</i>	3.00
<i>Mayor</i>	3.53	<i>Menor</i>	2.92
<i>Tremendo</i>	3.10	<i>Pequeño</i>	2.78
<i>Voluminoso</i>	3.04	<i>Diminuto</i>	2.65
<i>Ingente</i>	2.79	<i>Menudo</i>	2.61
<i>Abultado</i>	2.76	<i>Reducido</i>	2.53
<i>Vasto</i>	2.62	<i>Mini</i>	2.49
MEAN	3.06	MEAN	2.71

4. Results

Overall, participants were quicker when classifying words based on SIZE (1026.99 ms) than based on MORAL EMOTION (1143.95 ms); they were also more accurate with SIZE words (95% accuracy) than with EMOTION words (92%). Crucially, and as expected, they were much quicker in congruent blocks (PRIDE-BIG and SHAME-SMALL) than in incongruent blocks (PRIDE-SMALL and SHAME-BIG), with 1037 ms and 1419 ms, respectively (Figure 2). An ANOVA analysis proved these differences to be significant ($F(1, 41) = 16.9$, $p < 0.001$). They were also more accurate on congruent blocks (93.2%) than on incongruent ones (87%) (Figure 3), again a significant difference ($F(1, 41) = 21.4$, $p < 0.001$).

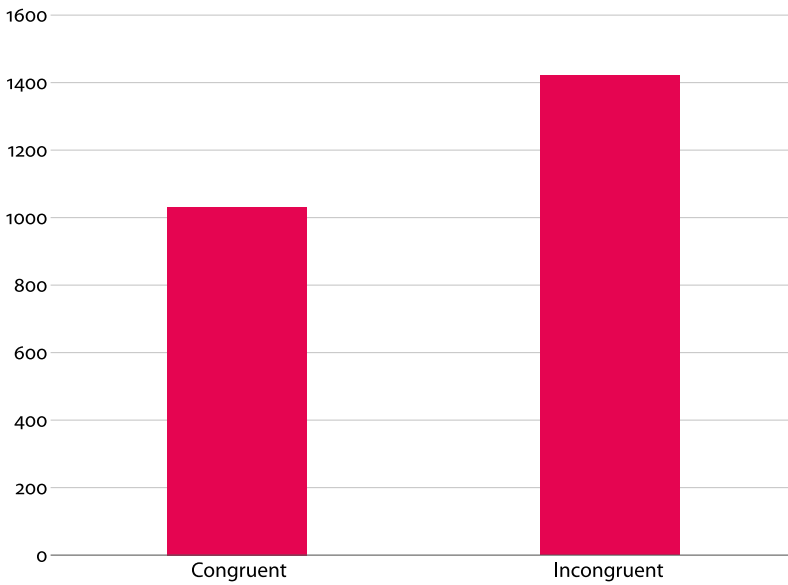


Figure 2. Reaction times (ms) in congruent vs incongruent blocks

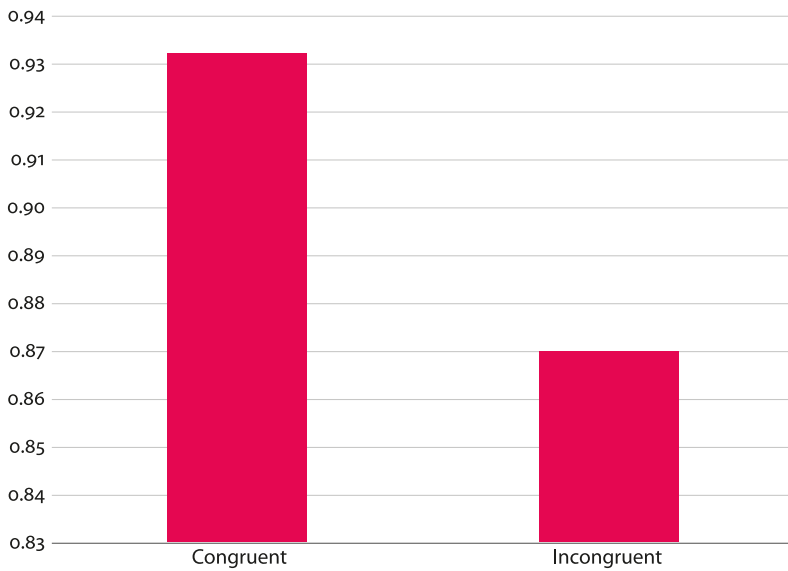


Figure 3. Accuracy rates in congruent vs incongruent blocks

5. Discussion and conclusions

The results of the IAT comparing moral emotions and size revealed a privileged association between PRIDE and BIG, as well as a counterpart link between SHAME and SMALL. These pairings were postulated as instances of conceptual metonymy grounded in the actual expressive profile that characterizes the two emotions: pride is typically accompanied by expansive body postures that make us look big, while shame is typically manifested by contracted postures that make us look small.

The observed pairings could also be explained as a result of a *metaphorical* (rather than metonymic) link between PRIDE and BIG (as in the metaphor A CONCEITED PERSON IS BIG, Kövecses, 1986) and SHAME and SMALL (as in SHAME IS DECREASE IN SIZE, Kövecses, 2000). The data do not allow us to determine whether the operating association is more likely represented as metonymic or metaphorical in the participants' minds. Determining this would be anything but trivial, seeing how the distinction between literal, metonymy and metaphor is scalar to begin with (Radden, 2002) and the demarcation problem is complicated by the fuzzy boundaries of semantic domains (Feyaerts, 1999; Riemer, 2001). A different kind of experimental paradigm would also be needed, and possibly an investigation of the conscious classification of source and target domains as different or not (cf. Barcelona, 2000a). However, even if ultimately the best representation of the conceptual link giving rise to these effects were more metaphorical than metonymic in nature, we still believe the metaphor would have its grounding and motivation in a metonymic relationship whereby the emotion is represented in terms of its physiological effects.

It is also possible that a different kind of phenomenon is at stake. The observed pairings could be ultimately motivated (or at least reinforced) by the valence of the two emotions, since affective valence (GOOD vs BAD) is also metaphorically represented in terms of SIZE via the conceptual metaphors GOOD IS BIG and BAD IS SMALL (Meier et al., 2008). Since pride is typically considered a positive emotion and shame a negative one (but see below for a discussion), the specific pairings observed between these moral emotion concepts and the domain of SIZE could be due to valence congruence. Further research would be necessary to reject this possibility. However, three arguments preliminarily speak against it. First, the SIZE words in this experiment were controlled for valence, and the difference between the average valence of BIG and SMALL words is rather minimal (0.35 points). This makes mere valence congruency a less likely explanation for our data.

Second, BIG is not always GOOD. Pannain (2018), for example, observes that big size (domains BIG and LONG) in the figurative representation of linguistic

activity typically communicates a negative value judgment (in other words, in the figurative representation of ways of speaking, “big is bad”). For example, Pannain (2018) discusses how the Italian *lingua lunga/ lingualunga* (‘long tongue’) (10) (p.240), Spanish *bocazas* (‘big-mouth’) (11) (p.255) and Chinese *dàzǔi* (‘big mouth’) (12) (p.247) all refer to types of speaker and convey a pejorative meaning.

- (10) Italian *lingua lunga/ lingualunga* (lit. ‘long tongue’, a person prone to be indiscrete and gossipy, or an unrestrained speaker)
- (11) Spanish *bocazas* (lit. a ‘big-mouth’, a person who speaks too much and indiscreetly, or says stupid things)
- (12) Chinese *dàzǔi* 大嘴 (lit. ‘big mouth’, one given to loud offensive talk)

The third reason why valence may not be the best explanation for the observed effects is that the valence of the concepts PRIDE and SHAME is less obvious than it may seem at first sight. The words *pride* and *shame*, as well as their Spanish counterparts *orgullo* and *vergüenza*, are conventionally used to refer to two emotions that are typically considered good and bad, respectively. However, even if prototypical pride is good and prototypical shame is bad, the PRIDE and SHAME categories as such are two families of affective experience that include both positive and negative emotions. For example, PRIDE as a general category includes the negative concepts VANITY, HUBRIS or CONCEIT. Since the word *orgullo* (*pride*) can be used to refer to them too, participants cued by this word may have called up a conceptual category of mixed valence, instead of one of just positive valence. The same is true for SHAME. SHAME as a family category includes varied concepts such as MODESTY and SELF-RESPECT that are positive instead. Cued by the word *vergüenza* (*shame*), participants may not have had an entirely negative category in mind for their categorization task, which indeed calls into question valence-congruency as a viable explanation for the observed experimental results.

Our study entails a number of limitations intrinsic to the chosen experimental paradigm and suggests new directions for future research. For example, the IAT paradigm tests the association of two bipolar concepts at the same time, revealing whether a privileged association exists between poles across concepts. Testing two pairings of concepts at the same time is a limitation acknowledged by the creators of the IAT paradigm themselves (e.g., Nosek et al., 2007). In the case of PRIDE/SHAME and BIG/SMALL, our data indicate that the metonymy-congruent pairings (PRIDE-BIG, SHAME-SMALL) are more natural than the incongruent ones (PRIDE-SMALL, SHAME-BIG). But it could be the case that the effect is only driven by one of the congruent pairs (for example, by a very strong link between PRIDE and BIG *only*). Future research should look at PRIDE and SHAME separately in their relation

to the domain of SIZE, for example using the “go/no-go” experimental paradigm (e.g., Nosek & Banaji, 2001).

More research will also be needed to determine under what conditions these attested cross-domain mappings become active in online language processing. Most definitions of conceptual metonymy seem to define the relationship between source and target domain in terms of offline associations, but they also explicitly refer to the online mental activation of the mappings in use. For example, according to Barcelona (2015, pp.146–147) “Metonymy is an asymmetric mapping of a conceptual entity, the source, onto another conceptual entity, the target. Source and target are in the same frame and their roles are linked by a pragmatic function, *so that the target is mentally activated*” (emphasis added). Our study shows a preferential pairing of PRIDE and BIG, as well as SHAME and SMALL, but it cannot guarantee that any instance of the concept BIG activates the concept PRIDE, for example. The contexts and limits of online conceptual metonymy activation are one of the main challenges for the field (cf. Gibbs, 2007). Recent revisions of the conceptual metaphor theoretical apparatus (Kövecses, 2017) attempt to account for different levels of analysis for metaphorical thought and language, including offline and online representations. These or similar frameworks may be desirable to advance in our understanding of conceptual metonymy as a cognitive phenomenon as well.

In spite of its limitations, our study constitutes a contribution to the underrepresented field of empirical studies of conceptual metonymy. We provide the first experimental evidence of the existence of a privileged conceptual link between the moral emotions PRIDE and SHAME and the size domains BIG and SMALL, respectively. Within emotion psychology, this association had been described, but its conceptual representation had not been explored yet. Within linguistics, the association had been observed in some linguistic expressions and had been used as the basis to hypothesize the existence of size-related conceptual metonymies (and metaphors). We provide the first experimental empirical evidence for these conceptual pairings.

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