

# The European Portuguese adaptation of the Affective Norms for English Words (ANEW)



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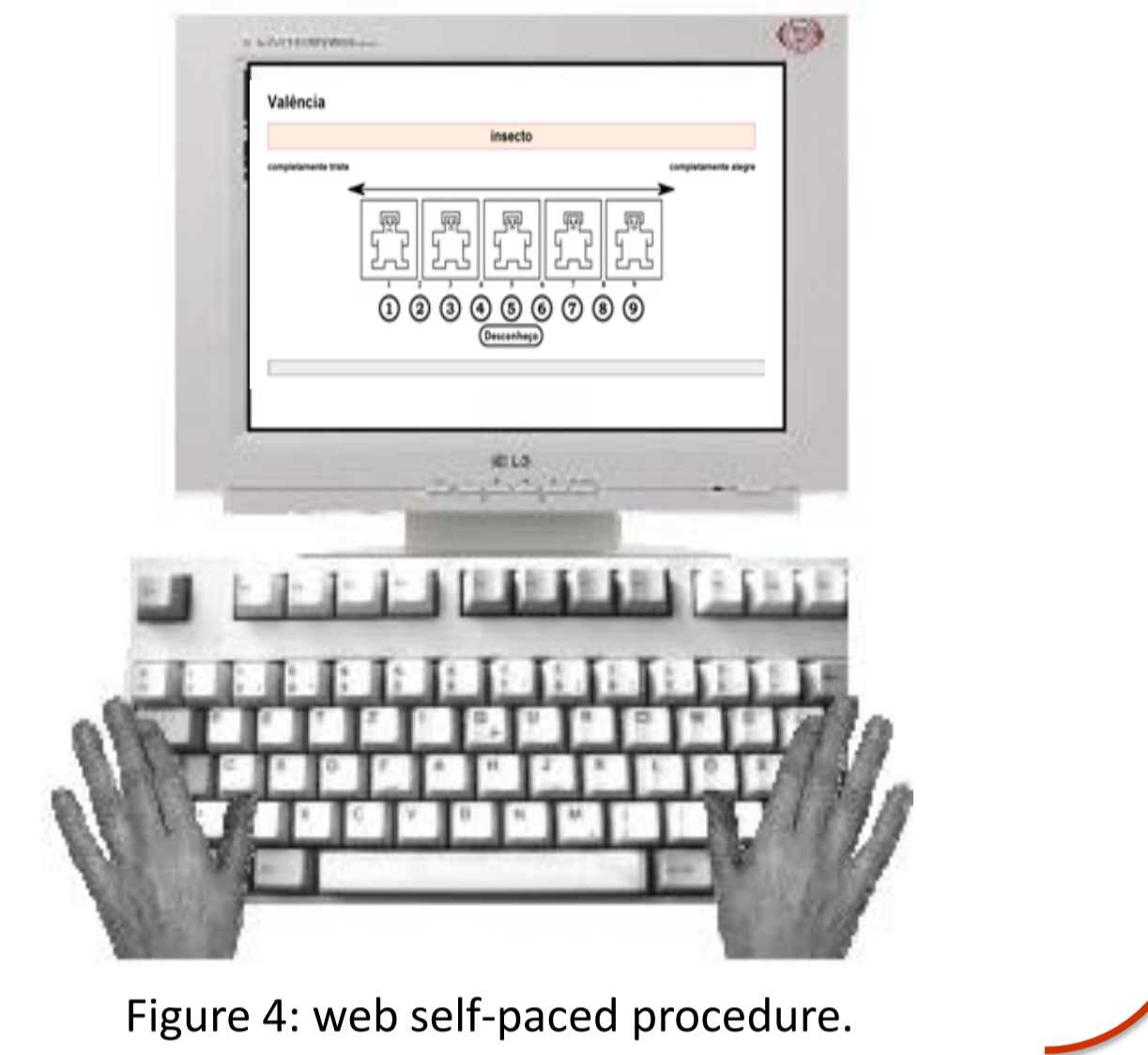
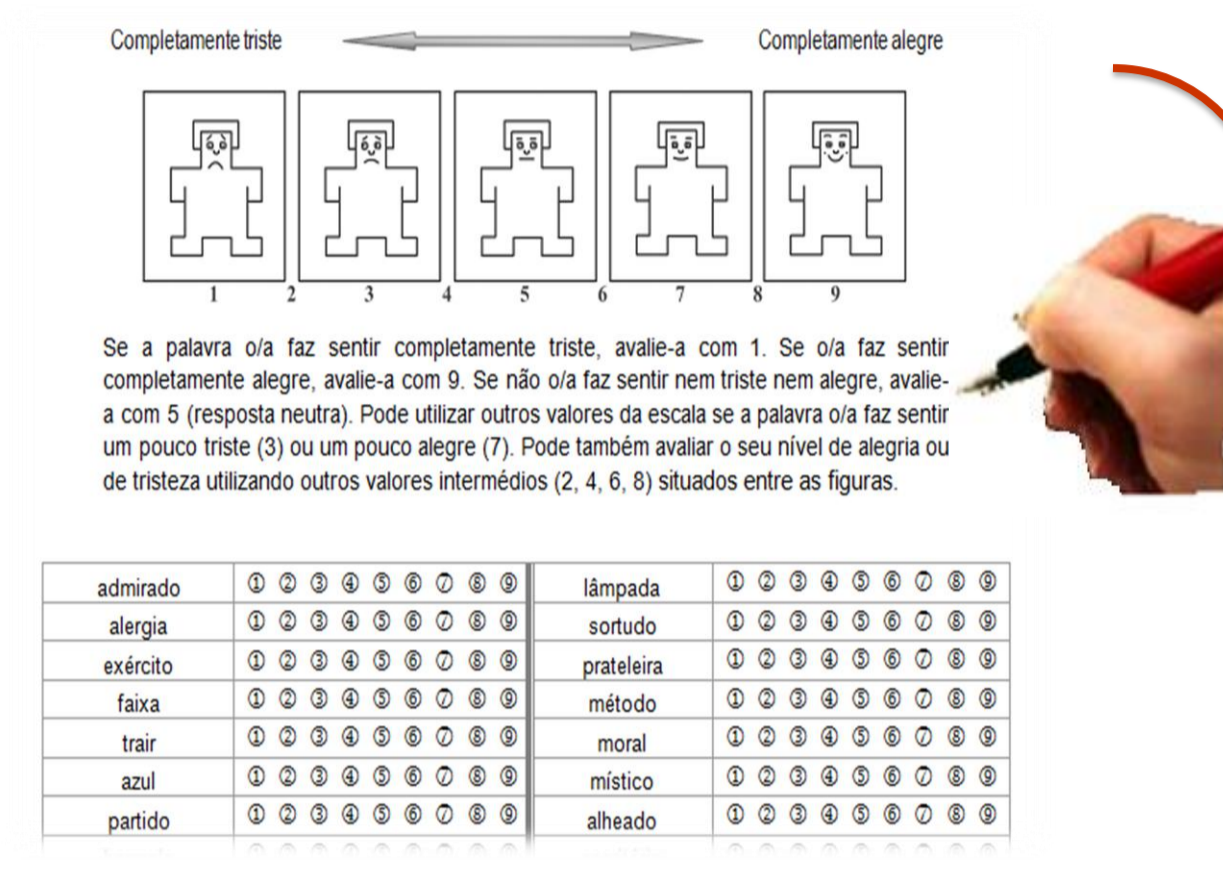
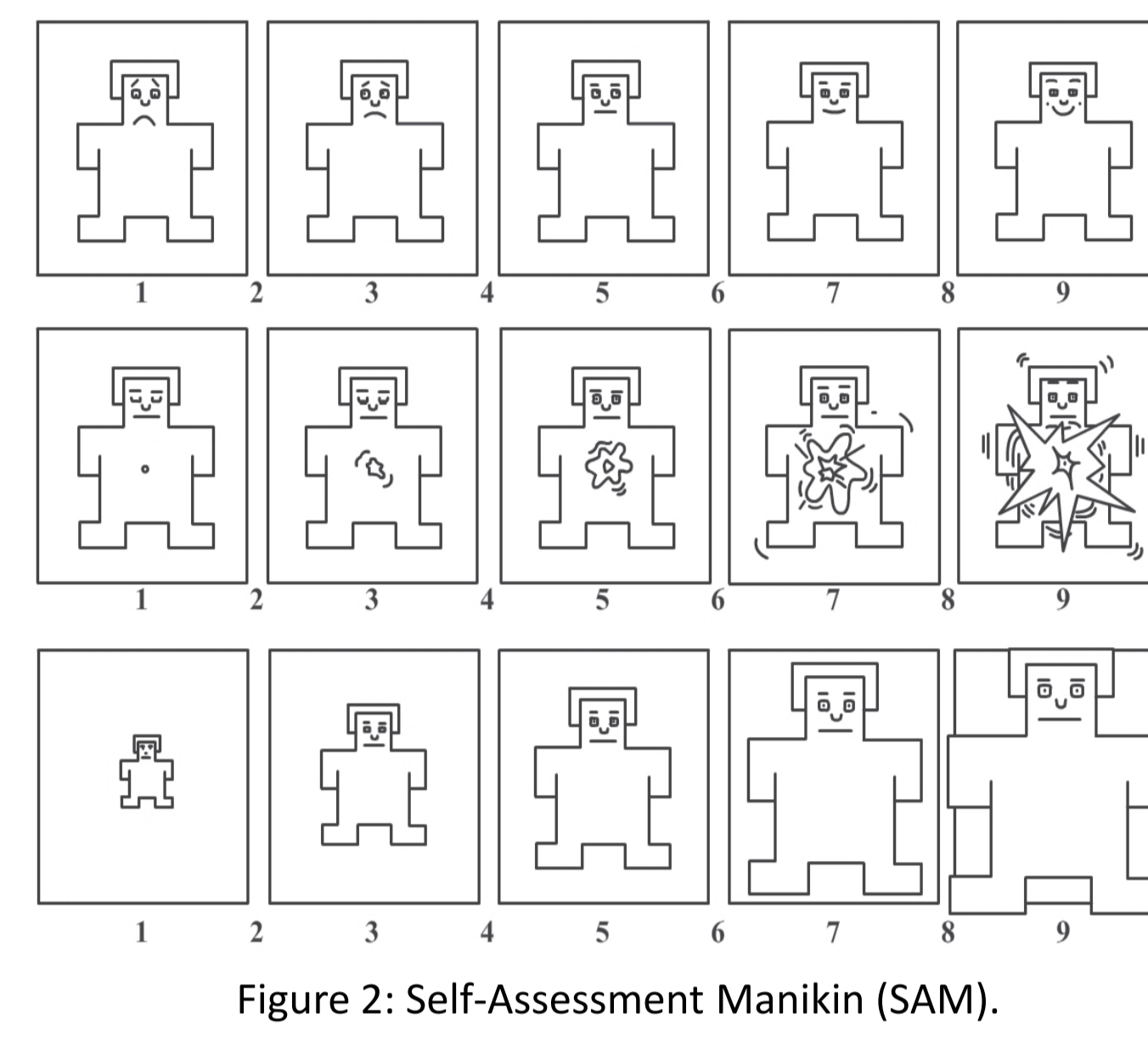
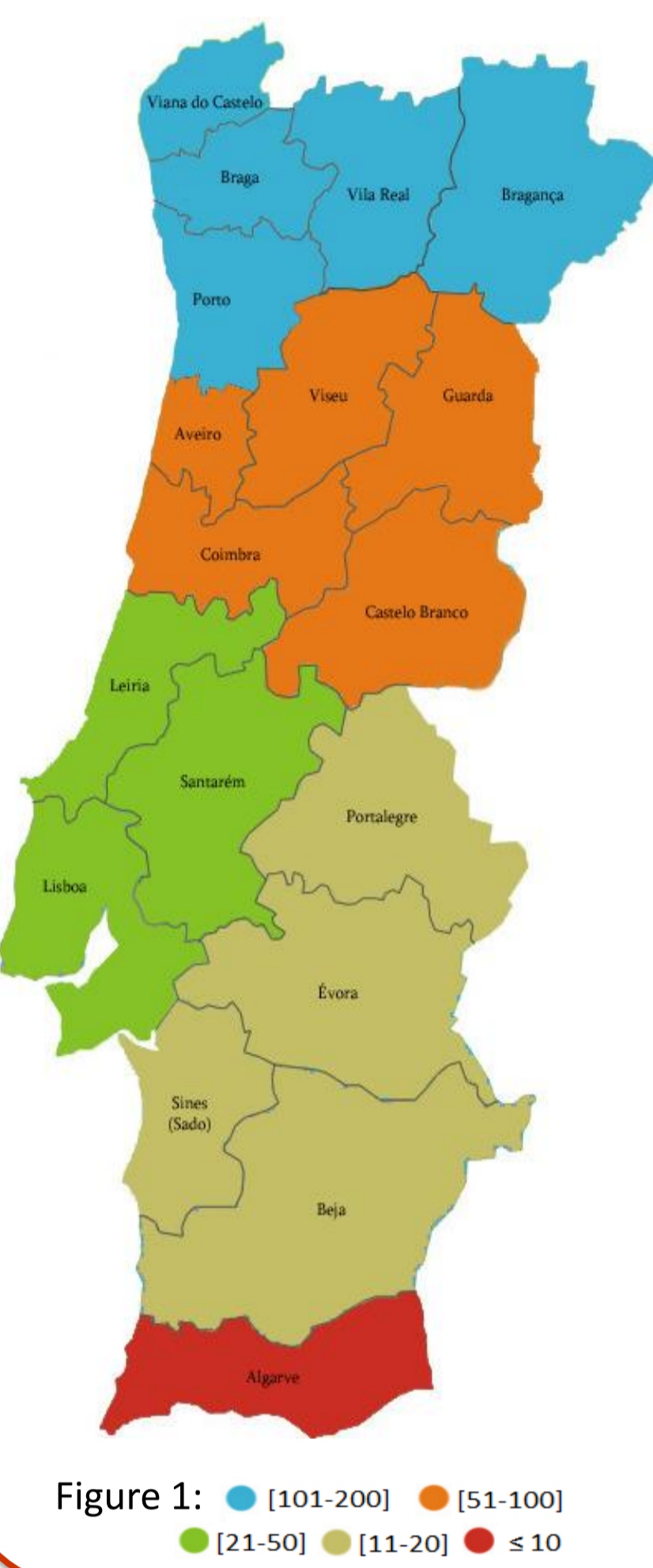
This work presents the preliminary results of the European Portuguese (EP) adaptation of the Affective Norms for English Words (ANEW; Bradley & Lang, 1999). The EP version of the ANEW provides affective norms of valence, arousal, and dominance for 1034 words translated from English to EP by two independent judges with deep knowledge of the two languages (90% of agreement and disagreement resolved by consensus). Differences between EP, American English (USA) and Spanish versions of the ANEW were explored. Results showed that the EP adaptation of the ANEW is a reliable and useful tool that will allow researchers to control or manipulate the affective properties of stimuli and contribute to the development of cross-linguistic studies.

## METHOD

**Participants:** 388 university students (118 male and 270 female) native speakers of EP enrolled in different degrees from several Portuguese universities. Mean age= 22.43 (SD=5.19). Figure 1 presents the number of participants *per* region (district).

**Materials and procedure:** Participants rated the ANEW words in the affective dimensions of valence, arousal and dominance using the 9-point scale of the *Self-Assessment Manikin* (SAM) (cf. Fig. 2). Two procedures were used:

- **paper-and-pencil procedure:** 198 students (35 male and 163 female; mean age= 21.98; SD=5.28) answered one of 17 random lists with ≈60 words each in the classroom (cf. Fig. 3).
- **web self-paced procedure:** 190 students (83 male and 107 female; mean age=22.90; SD=5.06) rated 60 random words in an on-line survey. An invitation with a hyperlink to answer to the on-line questionnaire (<http://natura.di.uminho.pt/aneu/>) was sent via e-mail (cf. Fig. 4).



## RESULTS

Table 1: Linear correlations between European Portuguese (EP), American (USA) and Spanish ratings in the three affective dimensions

	All subjects		Females		Males	
	USA	Spanish	USA	Spanish	USA	Spanish
<b>Valence</b>	.91	.92	.91	.92	.91	.84
<b>Arousal</b>	.61	.69	.59	.66	.59	.44
<b>Dominance</b>	.69	.71	.65	.66	.65	.45

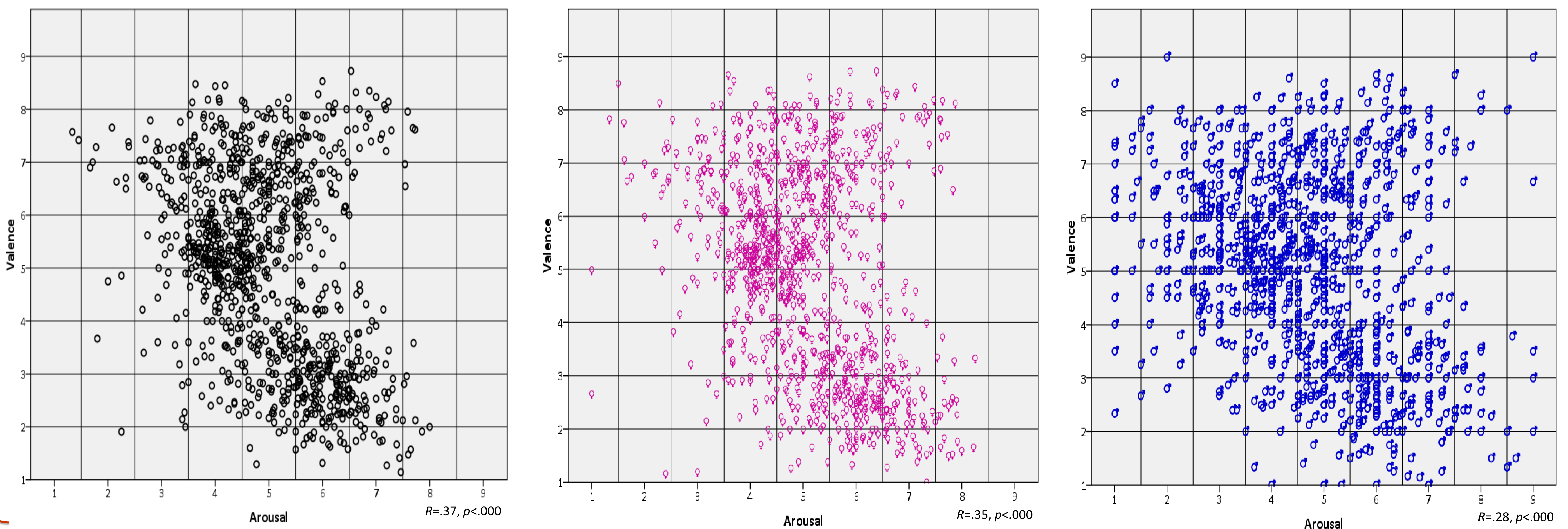
$p < .001$  in all EP-USA and EP-Spanish comparisons in each dimension.

Table 2: Means and Standard Deviations (SD) of the European Portuguese (EP), American (USA) and Spanish ratings in the three affective dimensions by all subjects and by females and males separately

	All subjects			Females			Males		
	EP	USA	Spanish	EP	USA	Spanish	EP	USA	Spanish
<b>Valence</b>	4.97 (1.83)	5.15 (1.99)	4.74 (2.14)	4.95 (1.92)	5.08 (2.18)	4.74 (2.16)	5.03 (1.78)	5.24 (1.79)	4.74 (2.10)
<b>Arousal</b>	4.97 (1.16)	5.12 (1.06)	5.52 (1.00)	5.07 (1.23)	5.16 (1.17)	5.54 (1.02)	4.68 (1.59)	5.07 (1.08)	5.49 (1.05)
<b>Dominance</b>	5.01 (.98)	5.01 (1.02)	4.68 (1.06)	4.98 (1.05)	4.92 (1.16)	4.68 (1.09)	5.05 (1.34)	5.12 (.95)	4.67 (1.07)

$p < .001$  in all EP-USA and EP-Spanish comparisons in each dimension (except in EP-USA dominance comparisons).

Figure 5: Distribution of the mean values of the 1034 ANEW words in the affective dimensions of valence and arousal for all EP subjects and for EP females and EP males separately



Results showed that the ANEW words were understood in a similar way by EP subjects, Americans and Spaniards, although some cross-cultural differences in valence (EP subjects tend to rate the ANEW words lower than Americans, although higher than Spaniards), arousal (EP subjects tend to rate the ANEW words as less activating than Americans and Spaniards), and dominance (EP subjects obtained the same values as Americans although higher than Spaniards) were identified.

Like American and Spanish normative data, the distribution of the EP word ratings in the two-dimensional affective space of valence and arousal fits the boomerang shape both in the global sample and in female and male sub-samples. Nevertheless, and inversely to the Spanish data, statistically significant differences were found by sex in accordance with USA results: arousal was higher for EP females than for EP males and valence was higher for EP males than for EP females (no differences in the dominance dimension). Our data, though preliminary, point to the existence of some cross-cultural differences in the assessment of the ANEW words.

**References:** Bradley, M. M., & Lang, P. J. (1999). *Affective norms for English words (ANEW): Instruction manual and affective ratings*. Gainesville, FL: Center for Research in Psychophysiology, University of Florida. Redondo, J., Fraga, I., Padrón, I., & Comesaña, M. (2007). The Spanish adaptation of ANEW (Affective Norms for English Words). *Behavior Research Methods*, 39(3), 600-605.

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