

Does Social Content Influence the Subjective Evaluation of Affective Pictures?

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Abstract

This study explored the effect of the perceived social content of affective pictures on the subjective evaluation of affective valence and arousal. For this purpose, we established three categories of social content (pictures without people, with one person and with two or more people). A sample of 161 subjects rated 200 pictures varying in affective valence (unpleasant, neutral, and pleasant), arousal and social content. Results of two-factor analysis of variance ($F(4, 157) = 71.7, p < .001, \eta_p^2 = .31$) showed that perceived social content influenced the ratings of affective valence, specially for unpleasant pictures, with the greatest social content (two or more people) leading subjects to rate unpleasant pictures with the lowest ratings (all pairwise comparisons' $p < .001$). Regarding arousal ($F(4, 157) = 64.0, p < .001, \eta_p^2 = .29$), the higher the social content, the higher the arousal ratings, but only for pleasant (all pairwise comparisons' $p < .007$) and unpleasant (all pairwise comparisons' $p < .001$) pictures. Overall, this study demonstrated an effect of the perceived social content on the subjective evaluation of affective valence and arousal of emotional stimuli.

Introduction

Emotions are important for the survival of animals and human beings, and they participate in a variety of behaviours, including approach and withdrawal or fight-or-flight behaviours, as well as in social communication. From a motivational perspective, emotion is considered as a behavioural tendency to approach or avoid a stimulus or a situation (Lang, Bradley, & Cuthbert, 1997; Seidel, Habel, Kirschner, Gur, & Derntl, 2010). This tendency is based on two motivational systems, the appetitive system (related to approach behaviours) and the defensive system (related to fight-or-flight behaviours). Accordingly, two basic bipolar dimensions can describe emotion, the affective valence -ranging from pleasant/appetitive motivation to unpleasant/avoidance motivation- and arousal -ranging from calm to exciting, reflecting the intensity of motivational activation (Bradley, Codispoti, Cuthbert, & Lang, 2001; Lang & Bradley, 2010; Lang et al., 1997). Emotional responses appear in the three response systems, cognitive/subjective, behavioural and physiological (Lang, 1969), and previous research has widely shown that activity in these systems correlates with affective valence and/or arousal (see Lang, Greenwald, Bradley, & Hamm, 1993, for a two-factor solution resulting from the factorisation of several subjective, behavioural, and physiological variables).

However, humans are not only emotional, but also social beings. Their behaviour depends also on their social environment, and, therefore, their emotions may be influenced by several factors related to the social context (Adolphs, 2009). A number of studies have shown that the social content of the stimuli influences the emotional responses. For example, Scherer and Tannenbaum (1986) found that most of the emotional events in our lives are connected to relationships with family and friends. A recent study has revealed that aversive social stimuli evoke more subjective negative

affect than non-social stimuli; moreover, individuals who are more sensitive to social rejection are less successful in the regulation of emotional responses provoked by aversive social stimuli (Silvers, 2013). In this line, Dan-Glauser & Scherer (2011) have found that negative pictures related to the violation of social norms are rated with lower affective valence and higher arousal than other non-social, unpleasant pictures (e.g., snake and spider pictures). Social content also exerts an effect on behavioural measurements. For example, social pictures are viewed longer than non-social pictures, as reported by Sakaki, Niki, and Mather (2006).

Several psychophysiological studies have also shown the influence of the social content on how people process and react to emotional stimuli. For example, skin conductance response has been found to be influenced by the social content of affective film-clips (Britton, Taylor, Berridge, Mikels, & Liberzon, 2006b). In the same vein, Kosonogov, Sánchez-Navarro, Martínez-Selva, Torrente, & Carrillo-Verdejo (2016) have found that skin conductance response increased as the social content of the pleasant pictures did. Studies using facial electromyographic (EMG) activity measurements have revealed differences in the activity of several facial muscles depending on the social content of the affective stimuli. For example, Fridlund et al. (1990) found that participants smiled more in a high-sociality than in a low-sociality imagery task, and Philipp, Storrs, and Vanman (2012) showed that pleasant pictures elicited greater zygomaticus major EMG activity in the presence of virtual humans, though the pleasantness ratings of the pictures were unaffected by the presence of the virtual humans. The study of event-related brain potentials (ERPs) also reveals a differential activity depending on the social content of the affective stimuli. Proverbio, Zani, and Adorni (2008) found a larger left parietal N2 component evoked by social scenes in comparison to landscapes that may be related to the greater automatic

attention to pictures depicting social scenes (e.g. human faces and bodies). In this line, Carretié et al. (2012) demonstrated that high social stimuli (emotional facial expressions) provoke greater exogenous attention than non-facial pictures (scenes). Moreover, positive faces provoke greater attentional capture, as shown by larger amplitudes of the N170 ERP component, than negative faces. Authors note that this positivity offset -a processing bias that facilitates the processing of appetitive stimuli (Cacioppo & Gardner, 1999)- may be important in social interaction.

This growing interest in the influence of the social components of the affective stimuli on the emotional response has also led to studying the brain regions supporting the processing of these components through functional neuroimaging techniques. These studies have found that affective pictures depicting social content elicit greater activation of several neural structures, including the fusiform gyrus (Geday, Gjedde, Boldsen, & Kupers, 2003) -an extra-striate area related to face processing- the superior temporal sulcus (Norris, Chen, Zhu, Small, & Cacioppo, 2004) -a region related to the perception of social signals (e.g., emotional facial expressions and body images) - and the amygdala (Silvers, 2013) -related to emotional processing. In addition, the data obtained by Frewen et al. (2011) reveal that social emotional processing, regardless of affective valence, recruits brain regions involved in social processing, such as the dorsomedial prefrontal cortex, posterior cingulate/precuneus, bilateral temporal poles, bilateral temporoparietal junction and right amygdala. Cacioppo and co-workers (2009) showed that lonely individuals are characterized by greater activation of the visual cortex to pictures of people than of objects. Thus, behavioral and physiological studies give support to the relationship between emotion and social content with regard to the reactions of the observers.

A limitation of most previous studies has been the use of the variable social content as a qualitative constant following an “all or nothing” principle, that is, the stimuli or conditions are usually separated into two categories: social and non-social (e.g., Britton et al., 2006a; Norris et al., 2004; Proverbio et al., 2008). These studies have usually employed either faces or pictures depicting, at least, one human being as social stimuli (e.g., Carretié et al., 2012; Harvey, Fossati, & Lepage, 2007; Norris et al., 2004). However, recent research has also found that human reactions to emotional social stimuli (pictures depicting faces and bodies) vary depending on whether these stimuli appear isolated or in a social scene (Kret, Roelofs, Stekelenburg, & de Gelder, 2013). The social vs. non-social categorization of the social variable could lead, therefore, to the masking of several physiological changes and subjective responses, resulting in a loss of findings related to the influence of the social content of the affective stimuli on emotional response.

Hence, it is necessary to explore whether variations in the level of social content of the affective stimuli result in differences in the emotional responses they provoke. This question could be answered by incorporating a division of the social stimuli according to the number of persons depicted by the pictures, as proposed by previous research (Wardle & de Wit, 2012). This approach would provide more precise data about the effects of social stimuli.

The main goal of this research was, therefore, to study the influence of the social content of the pictures on the affective valence and arousal ratings. For this purpose, we categorized our emotional stimuli according to their social content –i.e., whether they depicted one person, two or more interacting people, or did not display any people. Following previous research (e.g., Carretié et al., 2012; Dan-Glauser, & Scherer, 2011; Norris et al., 2004), we expected an effect of social content on the subjective evaluation

(affective valence and arousal) of the pictures. Specifically, pictures with greater social content were predicted to strengthen the affective valence ratings, especially for pleasant and unpleasant pictures. We also expected higher arousal ratings for greater social content, independently of the picture category (emotional content) of the pictures.

Following our previous research (Kosonogov et al., 2016; Kosonogov, Martínez-Selva, Carrillo-Verdejo, Torrente, Carretié, & Sánchez-Navarro, 2019a; Kosonogov, Martínez-Selva, Torrente, Carrillo-Verdejo, Arenas, & Sánchez-Navarro, 2019b), in order to check whether the selection of the pictures properly reflected their social content, we constructed a perceived social interaction scale ranging from 1 (no interaction) to 9 (high interaction). Consequently, we expected that the greater the social content of the pictures, the higher the social interaction ratings.

Methods

Participants

The sample consisted of 161 Psychology student volunteers (119 females) aged between 18 and 35 years ($Mean = 21.10$, $SD = 3.04$). All participants were selected from our university [the title hidden for blind review] and received course credits for participation.

Stimuli

The experimental stimuli consisted of 200¹ affective pictures: 146 were selected from the International Affective Picture System (IAPS, Lang, Bradley, & Cuthbert, 2008), 34 were selected from the EmoMadrid affective picture database (<http://www.uam.es/CEACO/EmoMadrid.htm>), and 20 additional neutral pictures depicting social interaction were downloaded from the Internet, since the IAPS and the EmoMadrid do not contain enough pictures with this content (Table 1 shows the mean

values and standard deviations of the pictures selected from both databases). Seven university scholars were invited to rate the pictures downloaded from the Internet, and a picture was included in the experimental set only if at least 4 out of 7 subjects agreed that the content was neutral. Pictures were chosen to comprise 9 categories varying in affective valence (unpleasant, neutral, and pleasant) and social content (0 people, 1 person, and 2 or more interacting people). Each of the 9 categories contained 20 to 27 pictures. We also selected 4 additional pictures from the IAPS used at the beginning of the study as training trials.

TABLE 1

Procedure

The evaluation of the pictures was carried out in two sessions, and each subject was randomly assigned to one of them. In each session, the pictures were pseudo-randomly distributed along 200 trials such that two consecutive pictures of the same emotional and social category were not allowed. The order of presentation was the same for the two sessions. The pictures were presented on a large projection screen (1.5×2 m) via an LCD projector. Eighty subjects in the first session and 81 in the second session were seated in a large room at a distance between 3 and 10 m from the screen. We did not equalise the distance to the screen because picture size does not influence subjective ratings (Sanchez-Navarro, Martinez-Selva, Roman, & Torrente, 2006). Each session lasted approximately 120 min., with a 10 min break in the middle of the session in order to avoid participants' fatigue. To ensure that subjects performed the task accurately, four training trials were administered at the beginning of the study, and questions regarding the task were answered. Each picture was presented for 6 s. After picture offset, subjects had 20s to rate the picture in a paper-and-pencil questionnaire.

For each picture, participants were asked to rate affective valence, arousal and social interaction. Affective valence and arousal were rated on a 9-point Likert scale for each dimension, with 9 representing a high rating (i.e., very pleasant, high arousal), and 1 a low rating (i.e., very unpleasant, and low arousal). Likewise, perceived social interaction was also rated on a 9-point Likert scale, with 9 representing high social interaction, and 1 representing no social interaction. The instruction to the subjects regarding this scale was to rate the interaction depicted in the picture.

Data analysis

All the statistical analyses were conducted with the PASW 19 package (IBM, USA). Each subjective rating was analyzed by a repeated measures ANOVA, 3 (Picture category: unpleasant, neutral and pleasant) \times 3 (Social content: without people, 1 person, and 2 or more people), with both Picture category (emotional content) and Social content as within-subject variables. When appropriate, a Greenhouse-Geisser adjustment of the degrees of freedom was used to correct any potential inflation of the reported probability values (Bagiella, Sloan, & Heitjan, 2000). For the main statistical tests, we obtained a measure of the effect size (partial eta-squared, η_p^2). Paired comparisons were performed with a Bonferroni correction (Keselman, 1998). We used a .05 level of significance for all the statistical analyses.

Results

Descriptive statistics

Table 2 shows a summary of the descriptive statistics for each picture category. As shown in Figure 1, affective valence and arousal ratings of all the pictures used in the study showed a typical U-shaped curve. The subjective ratings of the 180 pictures

selected from the IAPS and the EmoMadrid databases were highly and positively correlated with the original IAPS and EmoMadrid ratings for both affective valence ($r = .95, p < .001$) and arousal ($r = .82, p < .001$). The t -tests did not reveal any difference between our data and those obtained by Lang et al. (2008) (all $ps > .05$). Additionally, we did not find gender differences in general values of affective valence, arousal, and social interaction ratings (all $ps > .05$), although some comparisons yielded significant gender differences in affective valence (Table 2)². We found significant correlations neither between affective valence and social interaction, nor between arousal and social interaction (all $ps > .05$).

TABLE 2

FIGURE 1

Social interaction

As expected, the evaluation of the Social content of the affective pictures through the perceived social interaction ratings revealed a significant effect of the social content, $F(2, 320) = 1998.8, p < .0001, \eta_p^2 = .93$. Pictures with two people obtained higher ratings in social interaction than pictures with one person, $t(160) = 43.8, p < .001$, and than pictures without people, $t(160) = 49.3, p < .001$; in turn, pictures with one person were rated with higher social interaction than pictures without people, $t(160) = 5.8, p < .001$.

TABLE 3

Affective valence

We found a significant main effect of Picture category (emotional content), $F(2, 159) = 2243.1, p < .001, \eta_p^2 = .93$. Paired comparisons showed that pleasant pictures

were rated with higher affective valence than neutral, $t(160) = 37.0, p < .001$, and than unpleasant pictures, $t(160) = 52.3, p < .001$), and, in turn, neutral pictures were rated with higher affective valence than unpleasant pictures, $t(160) = 43.7, p < .001$.

We also found a significant main effect of Social content on affective valence ratings, $F(2, 159) = 43.4, p < .001, \eta_p^2 = .21$. However, these effects were qualified by a Picture category (emotional content) \times Social content significant interaction, $F(4, 157) = 71.7, p < .001, \eta_p^2 = .31$. Post-hoc comparisons (with the Bonferroni correction) showed that unpleasant pictures with two or more people were rated as more unpleasant (lower affective valence) than unpleasant pictures with one person, $t(160) = 6.8, p < .001$, and than pictures without people, $t(160) = 12.6, p < .001$. In turn, unpleasant pictures with one person were rated as more unpleasant (lower affective valence) than unpleasant pictures without people, $t(160) = 8.2, p < .001$.

Regarding neutral pictures, pictures with one person were rated with higher affective valence than pictures without people, $t(160) = 6.4, p < .001$ and also rated with higher affective valence than pictures depicting two or more people, $t(160) = 6.5, p < .001$. Pleasant pictures with two or more people, $t(160) = 9.8, p < .001$, as well as pleasant pictures without people, $t(160) = 9.1, p < .001$, were rated with higher affective valence than pleasant pictures with one person.

Arousal

Statistical analyses revealed a significant main effect of Picture category (emotional content), $F(2, 159) = 1009.1, p < .001, \eta_p^2 = .86$. Paired comparisons showed that neutral pictures were rated with lower arousal ratings than both pleasant, $t(160) = 37.7, p < .001$, and unpleasant pictures, $t(160) = 36.8, p < .001$, whereas pleasant and unpleasant pictures did not differ, $t(160) = 1.3, p = .52$.

We also found a significant main effect of Social content on arousal ratings, $F(2, 159) = 109.2, p < .001, \eta_p^2 = .41$. Pictures depicting two people were rated with higher arousal ratings than pictures with one person, $t(160) = 7.8, p < .001$, and than pictures without people, $t(160) = 14.1, p < .001$. In turn, pictures with one person were rated with higher arousal ratings than pictures without people, $t(160) = 7.4, p < .001$.

A Picture category (emotional content) \times Social content significant interaction was also found, $F(4, 157) = 64.0, p < .001, \eta_p^2 = .29$. Post-hoc comparisons (with the Bonferroni correction) found that unpleasant pictures depicting two or more people were rated with higher arousal ratings than both unpleasant pictures with one person, $t(160) = 6.8, p < .001$, and unpleasant pictures without people, $t(160) = 9.8, p < .001$; in turn, unpleasant pictures with one person were rated with higher arousal ratings than pictures without people, $t(160) = 3.7, p < .001$.

For neutral pictures, paired comparisons revealed that neutral pictures depicting one person were rated with higher arousal ratings than both neutral pictures without people, $t(160) = 14.2, p < .001$, and neutral pictures with two or more people, $t(160) = 5.0, p < .001$; neutral pictures with two or more people were rated with higher arousal than neutral pictures without people, $t(160) = 10.7, p < .001$. Pleasant pictures depicting two or more people were rated higher in arousal than both pleasant pictures without people, $t(160) = 7.3, p < .001$, and pleasant pictures with one person, $t(160) = 11.9, p < .001$, and pleasant pictures without people were also rated with higher arousal than pleasant pictures with one person, $t(160) = 3.1, p = .007$.

Discussion

The main aim of this research was to study the effects of the social content on the subjective evaluation of affective pictures. Our data on affective valence and arousal

were similar to the findings obtained in previous studies (Lang et al., 2008; Moltó et al., 1999; Moltó et al., 2013; Vila et al., 2001). Affective valence monotonically varied with picture category (emotional content) -pleasant pictures received the highest ratings whereas the unpleasant pictures received the lowest ratings- and arousal ratings were higher for picture category (emotional content) -pleasant and unpleasant pictures- than for neutral pictures. These data are in agreement with previous research showing a two-dimensional structure of emotion (Lang et al., 1993; Sánchez-Navarro, Martínez-Selva, Torrente, & Roman, 2008). In this model, the affective valence dimension is related to the approach or avoidance motivation, whereas the arousal dimension relates to the power or strength of such motivation (Lang et al., 1997).

As expected, the social content of the pictures influenced both the affective valence and arousal ratings of the pictures. In the case of unpleasant pictures, those depicting one person and two or more people were rated as more unpleasant than unpleasant pictures without people. Moreover, pictures depicting two or more people were rated as the most unpleasant. Accordingly, the greater the social content of negative stimuli, the greater the perceived unpleasantness as reflected by affective valence ratings. Additionally, this result is in agreement with some previous studies reporting that social unpleasant stimuli provoke greater psychophysiological responses than non-social unpleasant ones (Kosonogov et al., 2015; Silvers, 2013), as well as higher unpleasantness and arousal ratings (Dan-Glauser & Scherer, 2011). Similar results were also found regarding pleasant pictures, since those depicting two or more people were judged more pleasant than pictures displaying only one person. These data showed an increase of pleasantness as the social content of the positive pictures augmented, and are in agreement with psychophysiological evidences revealing facial EMG changes related to the social content of the affective pictures. For example,

previous research has found greater zygomaticus major activity (a muscle previously related to positive affect; see Bradley et al., 2001, and Lang et al., 1993) when subjects view happy social scenes -in comparison to unpleasant scenes- whereas it does not differentiate between isolated emotional faces (Kret et al., 2013). Moreover, the results found by Wardle and de Wit (2012) revealed greater zygomaticus major EMG activity and less corrugator EMG activity provoked by social pleasant pictures (two or more people in the scene) in comparison to non-social pleasant ones. Gros, Hawk, and Moscovitch (2009) showed that social content can modulate the psychophysiological reactions of anxious patients. These findings suggest that the social content of the affective stimuli provoke differential facial EMG changes that have been considered tactic responses and might be related, for example, to social functions (Bradley et al., 2001). However, we must be cautious in the interpretation of our results on pleasant pictures because pleasant pictures without people were rated with higher affective valence than pictures depicting one person, and, therefore, further research is required to explain these differences.

Additionally, and according to our hypothesis, arousal was linearly related to social content: the more people in a picture, the higher the arousal rating it received. This pattern was found for emotional, pleasant and unpleasant pictures, but not for neutral pictures. These results support the data obtained by Scherer & Tannenbaum (1986) showing that the most emotional or arousing events in our life are related to relationships with other people. Previous psychophysiological findings (e.g., Cuthbert, Schupp, Bradley & Lang, 2000; Lang et al., 1993; Sánchez-Navarro et al., 2008) suggest that high arousal pictures -pleasant and unpleasant- provoke higher physiological arousal related to orienting and attention (as measured by skin conductance response), demand greater processing resources (as revealed by the cortical

late positive component of the ERPs), are viewed for longer and provoke higher interest in the observer than low arousal, neutral pictures. In the same vein, Proverbio et al. (2008) have shown that viewing pictures depicting social scenes (e.g., human interaction) provoke greater automatic attention, as revealed by cortical activity reflected in ERP components. Our results on arousal agree with these findings, revealing that the greater the social content of the affective stimuli, the higher the arousal perceived, and they also support previous research showing larger skin conductance responses provoked by greater social content (Kosonogov et al., 2016).

As expected, perceived social interaction ratings depended on the number of people in the pictures, showing that the more people in a picture, the higher the scores on social interaction. Overall, our data are in agreement with previous neuroimaging findings that suggest that several neural structures involved in emotional processing are also related to the social value of the stimuli (e.g., Britton et al., 2006a; Norris et al., 2004). In addition, these results are in accordance with hypotheses that have related the development of complex human social interaction to the evolution of some brain structures as a result of evolutionary pressure (Dunbar, 1998).

It has previously been proposed that emotions depend on two motivational systems of the brain -appetitive and aversive (Lang et al., 1997). In addition, emotions may also be influenced by the social context (Bradley et al., 2001). In the process of natural selection, it has been more important for survival to display a faster and stronger reaction to unpleasant signals of the environment than to pleasant stimuli. This negativity bias is a robust psychological phenomenon that has received wide support (Cacioppo & Gardner, 1999). In addition, according to the positivity offset hypothesis (Cacioppo & Gardner, 1999) it has been proposed a better processing of positive social stimuli (e.g., Carretié et al., 2012). According to our results, these effects might be

modulated by the social content of the stimuli, in such a way that the higher the social content of the stimuli, the stronger the reaction displayed, a hypothesis that needs to be explored by future research.

Our results could have practical implications for the treatment of several affective pathologies. For example, the finding that pleasant pictures with two or more people provoke more arousal than pleasant pictures without people can potentially be used in exposure therapies for the treatment of social anxious patients or depressive patients.

Future research should resolve some limitations of our study. Thus, the number of participants could be enlarged or even a standardization study could be conducted in order to have normative values on social interaction scale. In future studies researchers should also balance the gender ratio and use several presentation orders to avoid the halo effect (Saal, Downey, & Lahey, 1980). Another question to explore would be the selection of the pictures with social content. In our study, we used the majority rule (4 vs 3 experts) to include a picture in the category of social pictures; however, another rule of selection could potentially have led to other results.

Overall, our results reveal that the social content of a picture influences the viewer's subjective evaluation of affective valence and arousal. Whether social content also influences the subjects' behavioural response and physiological reactions is beyond the scope of this study and should be addressed by future research, though findings from previous research seem to support this hypothesis (e.g., Kosogonov et al., 2016; Wardle & de Wit, 2012). Further studies should also establish the neural structures supporting the processing of social stimuli varying in affective content.

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Tables

Table 1. *Affective Valence and Arousal of the Selected Pictures according to the IAPS and the EmoMadrid (Means and Standard Deviations).*

Pictures	Valence	Arousal
Unpleasant - 0 person	2.23 (0.48)	7.31 (1.08)
Unpleasant - 1 person	2.44 (0.53)	6.60 (0.82)
Unpleasant - 2 or more	2.51 (0.47)	6.17 (0.49)
Neutral - 0 person	4.98 (0.13)	2.98 (0.60)
Neutral - 1 person	4.97 (0.24)	3.20 (0.44)
Neutral - 2 or more people	5.04 (0.32)	3.13 (0.31)
Pleasant - 0 person	7.51 (0.39)	6.36 (0.64)
Pleasant - 1 person	7.11 (0.52)	6.20 (0.49)
Pleasant - 2 or more people	7.07 (0.46)	6.44 (0.83)

Table 2. *Means (and Standard Deviations) of the Subjective Ratings for Each Picture Category.*

Pictures	All		Men		Women	
	Valence	Arousal	Valence	Arousal	Valence	Arousal
Unpleasant	2.5 (0.7)	6.1 (0.7)	3.1 ^a (0.8)	5.9 (0.8)	2.3 ^a (0.6)	6.2 (0.8)
Neutral	4.9 (0.3)	2.8 (0.7)	5.0 (0.3)	2.9 (0.7)	4.9 (0.4)	2.7 (0.8)
Pleasant	6.9 (0.6)	6.0 (0.9)	6.7 (0.9)	5.6 (1.1)	6.9 (0.8)	6.0 (1.1)
0 people	4.9 (1.9)	4.9 (1.9)	5.0 ^b (1.6)	4.8 (1.7)	4.9 ^b (2.0)	4.9 (1.9)
1 person	4.9 (1.0)	5.1 (1.5)	4.9 ^c (1.5)	4.7 (1.5)	4.7 ^c (1.8)	5.1 (1.5)
2 or more people	4.8 (1.9)	5.1 (1.8)	4.9 ^d (1.7)	5.0 (1.7)	4.7 ^d (2.0)	5.2 (1.9)
Unpleasant - 0 people	2.8 (0.8)	5.9 (1.3)	3.3 ^e (0.9)	5.7 (0.7)	2.8 ^e (0.7)	6.0 (0.9)
Unpleasant - 1 person	2.5 (0.7)	6.1 (1.3)	3.1 ^f (0.9)	5.8 (0.8)	2.3 ^f (0.6)	6.2 (0.8)
Unpleasant - 2 or more people	2.3 (0.7)	6.4 (1.3)	2.8 ^g (0.5)	6.1 (0.7)	2.1 ^g (0.4)	6.5 (0.7)
Neutral - 0 people	4.9 (0.5)	2.2 (1.0)	4.9 (0.2)	2.4 (0.7)	4.9 (0.2)	2.2 (0.8)
Neutral - 1 person	5.1 (0.5)	3.2 (1.2)	5.1 (0.3)	3.1 (0.7)	5.1 (0.5)	3.2 (0.7)
Neutral - 2 or more people	4.9 (0.4)	2.9 (1.2)	4.9 (0.4)	3.0 (0.5)	4.9 (0.3)	2.9 (0.5)
Pleasant - 0 people	7.0 (0.7)	5.9 (1.4)	6.8 ^h (0.6)	5.7 (0.8)	7.1 ^h (0.6)	6.0 (0.8)
Pleasant - 1 person	6.7 (0.8)	5.9 (1.3)	6.5 (0.7)	5.7 (0.9)	6.7 (0.6)	5.9 (1.0)
Pleasant - 2 or more people	7.0 (0.8)	6.4 (1.3)	6.9 (0.6)	6.1 (1.0)	7.0 (0.5)	6.5 (0.8)

The values indicated with the same superscript differed significantly ($p < .05$).

*Table 3. Social Interaction Ratings of the Pictures depending on the Social Content
(Means and Standard Deviations).*

	All	Men	Women
Pictures	Social interaction	Social interaction	Social interaction
0 people	1.24 (0.27)	1.34 (0.59)	1.20 (0.47)
1 person	1.47 (0.27)	1.70 ^c (0.93)	1.36 ^c (0.65)
2 or more people	5.44 (1.46)	5.24 (1.21)	5.52 (1.07)
Unpleasant - 0 people	1.25 (0.52)	1.35 (0.58)	1.22 (0.50)
Unpleasant - 1 person	1.43 (0.76)	1.63 ^a (0.91)	1.35 ^a (0.69)
Unpleasant - 2 or more people	4.80 (1.32)	4.78 (1.35)	4.81 (1.32)
Neutral - 0 people	1.14 (0.34)	1.24 ^b (0.47)	1.10 ^b (0.28)
Neutral - 1 person	1.42 (0.76)	1.62 ^c (0.93)	1.35 ^c (0.68)
Neutral - 2 or more people	5.04 (1.18)	4.84 (1.24)	5.11 (1.15)
Pleasant - 0 people	1.32 (0.75)	1.43 (0.86)	1.28 (0.71)
Pleasant - 1 person	1.49 (0.86)	1.83 ^d (1.16)	1.36 ^d (0.70)
Pleasant - 2 or more people	6.50 (1.25)	6.11 (1.39)	6.64 (1.18)

The values indicated with the same superscript differ significantly ($p < .05$).

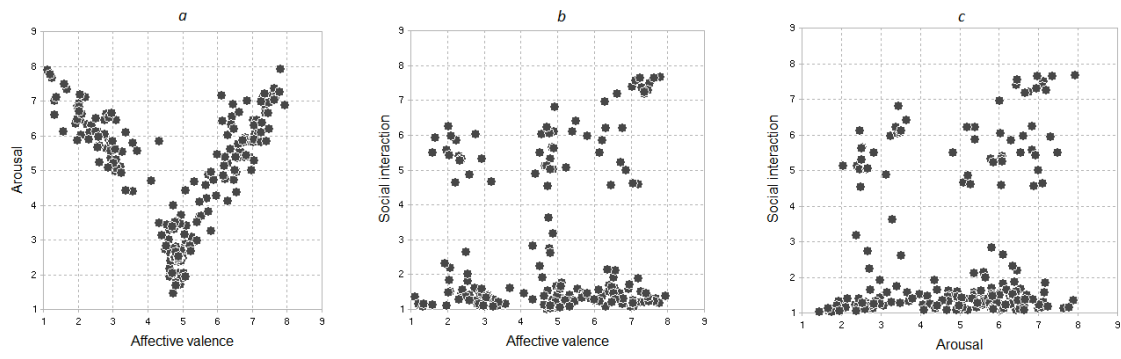


Figure 1. Affective valence, arousal and social interaction ratings obtained in our study.

One point represents one picture.

Footnotes

¹ The pictures used in the study were the following:

Unpleasant without people (24 pictures): 1525, 3400, 7380, 9300, 9560, 9570, 9600, 9620, 9630, 9911 (from the IAPS); 0067, 0223, 0281, 0284, 0286, 0287, 0295, 0320, 0321, 0325, 0326, 0367, 0391, 0581 (from EmoMadrid).

Unpleasant with one person (20 pictures): 2688, 2717, 2730, 3062, 3100, 3150, 6200, 6210, 6250, 6260, 6300, 6370, 6570, 9120, 9160, 9800 (from the IAPS); 0327, 0376, 0579, 0586 (from EmoMadrid).

Unpleasant with two or more people (20 pictures): 2683, 2703, 3280, 3530, 6315, 6415, 6530, 6550, 6821, 6834, 8485, 9050, 9250, 9423, 9452, 9635, 9910, 9920, 9921, 9925 (from the IAPS).

Neutral without people (20 pictures): 5510, 5535, 6150, 7000, 7002, 7004, 7009, 7010, 7025, 7034, 7035, 7036, 7041, 7055, 7056, 7058, 7059, 7161, 7179, 7487 (from the IAPS).

Neutral with one person (20 pictures): 2038, 2102, 2190, 2210, 2214, 2385, 2440, 2441, 2446, 2480, 2495, 2499, 2512, 2514, 2516, 2745, 2749, 2840, 2870, 9070 (from the IAPS).

Neutral with two or more people (24 pictures): 2393, 2396, 2580, 2595, 2850, 2890, 9700 (from the IAPS) and 17 pictures from the Internet.

Pleasant without people (24 pictures): 1650, 5260, 5450, 5480, 5700, 7270, 7501, 8500, 8501, 8502 (from the IAPS); 0129, 0218, 0219, 0260, 0269, 0274, 0379, 0398, 0431, 0433, 0437, 0445, 0527 (from EmoMadrid) and 1 picture from the Internet.

Pleasant with one person (27 pictures): 2030, 4150, 4235, 4250, 4255, 4274, 4279, 4510, 4531, 4532, 4538, 4561, 4572, 5470, 5626, 5628, 5629, 8021, 8031, 8034, 8080, 8178, 8179, 8186, 8200, 8300 (from the IAPS) and 1 picture from the Internet.

Pleasant with two or more people (21 pictures): 2216, 2346, 4598, 4608, 4609, 4645, 4656, 4658, 4676, 4687, 4689, 4690, 4694, 4695, 5621, 7502, 8180 (from the IAPS), ep0397, ep0399, ep0435 (from EmoMadrid) and 1 picture from the Internet.

²The absence of gender differences in general values of affective valence, arousal, and social interaction could be the result of the large ratio of women in our study.

Appendix 1. Subjective ratings (mean and standard deviation) of the pictures selected from the IAPS and EmoMadrid databases in our experimental sample (all participants).

IAPS Code	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
1525	Unpleasant	0 people	2.82	1.46	6.61	1.78	1.16	0.70
1650	Pleasant	0 people	7.07	1.41	6.04	2.00	1.07	0.40
2030	Pleasant	1 person	6.83	1.23	5.45	1.98	2.29	1.75
2038	Neutral	1 person	5.33	1.34	2.93	1.83	1.29	0.73
2102	Neutral	1 person	5.33	1.30	2.98	1.98	1.42	0.96
2190	Neutral	1 person	5.00	1.04	2.62	1.77	1.31	0.90
2210	Neutral	1 person	4.74	1.20	3.98	1.99	1.52	1.25
2214	Neutral	1 person	5.08	1.06	2.87	1.89	1.33	0.98
2216	Pleasant	2 or more	6.78	1.22	5.38	2.09	6.21	2.17
2346	Pleasant	2 or more	7.19	1.65	6.06	2.05	4.58	2.14
2385	Neutral	1 person	4.63	1.25	3.28	2.03	1.29	0.93
2393	Neutral	2 or more	4.80	0.90	2.68	1.72	2.74	1.85
2396	Neutral	2 or more	4.87	0.79	2.37	1.55	3.18	1.79
2440	Neutral	1 person	4.72	0.80	2.36	1.56	1.22	0.78
2441	Neutral	1 person	4.97	1.30	3.72	2.07	1.32	0.88
2446	Neutral	1 person	4.32	1.42	3.49	2.06	1.28	1.05
2480	Neutral	1 person	5.26	1.27	3.08	1.90	1.19	0.60
2495	Neutral	1 person	4.81	1.05	2.43	1.79	1.18	0.55
2499	Neutral	1 person	5.43	1.29	2.97	2.02	1.26	0.91

2512	Neutral	1 person	5.12	1.00	3.40	1.90	1.75	1.51
2514	Neutral	1 person	4.99	1.00	2.75	1.65	1.65	1.31
2516	Neutral	1 person	4.96	0.95	2.70	1.66	1.24	0.79
2580	Neutral	2 or more	5.81	1.25	3.26	1.86	5.98	1.98
2595	Neutral	2 or more	5.50	1.12	3.65	1.88	6.40	1.81
2683	Unpleasant	2 or more	2.25	1.23	6.31	1.99	5.85	2.30
2688	Unpleasant	1 person	2.57	1.79	6.11	2.22	1.82	1.60
2703	Unpleasant	2 or more	1.68	1.04	7.32	1.54	5.93	2.15
2717	Unpleasant	1 person	2.39	1.41	6.29	2.14	1.47	1.12
2730	Unpleasant	1 person	2.07	1.59	6.45	2.23	2.18	2.10
2745	Neutral	1 person	5.00	0.84	2.46	1.77	1.40	1.21
2749	Neutral	1 person	4.60	1.13	2.99	1.77	1.92	1.51
2840	Neutral	1 person	5.08	1.14	3.16	2.04	1.57	1.26
2850	Neutral	2 or more	4.82	1.15	3.53	1.87	2.61	2.20
2870	Neutral	1 person	5.55	1.34	3.68	1.92	1.57	1.34
2890	Neutral	2 or more	4.51	1.19	2.73	1.75	2.24	1.57
3062	Unpleasant	1 person	1.32	0.72	6.99	2.09	1.12	0.60
3100	Unpleasant	1 person	1.13	0.48	7.88	1.54	1.34	1.03
3150	Unpleasant	1 person	1.26	0.69	7.65	1.87	1.11	0.67
3280	Unpleasant	2 or more	3.21	1.39	5.09	2.10	4.66	2.07
3400	Unpleasant	0 people	1.20	0.55	7.76	1.66	1.15	0.70
3530	Unpleasant	2 or more	2.02	1.21	6.55	1.87	5.50	2.26
4150	Pleasant	1 person	6.93	1.59	5.90	2.26	1.71	1.22
4235	Pleasant	1 person	7.83	1.98	7.17	2.47	1.71	1.25

4250	Pleasant	1 person	7.50	1.73	5.98	2.22	2.07	1.33
4255	Pleasant	1 person	8.02	1.90	7.33	2.53	1.64	1.20
4274	Pleasant	1 person	6.39	1.30	4.63	2.21	1.73	1.39
4279	Pleasant	1 person	5.31	1.98	5.79	2.22	1.83	1.10
4510	Pleasant	1 person	5.87	1.69	4.59	2.34	1.18	0.83
4531	Pleasant	1 person	7.28	1.86	6.39	2.36	1.36	1.13
4532	Pleasant	1 person	6.98	1.52	5.47	2.18	1.58	1.30
4538	Pleasant	1 person	7.47	2.05	6.78	2.62	1.32	1.10
4561	Pleasant	1 person	7.28	2.34	7.31	2.41	1.61	1.49
4572	Pleasant	1 person	7.90	1.88	7.39	2.46	1.92	1.75
4598	Pleasant	2 or more	7.04	1.70	6.45	1.81	7.40	1.76
4608	Pleasant	2 or more	7.38	1.20	6.75	1.86	7.19	1.92
4609	Pleasant	2 or more	6.31	1.20	5.20	1.94	6.21	1.85
4645	Pleasant	2 or more	7.14	1.49	6.45	1.82	7.55	1.81
4656	Pleasant	2 or more	6.29	1.94	6.01	2.11	6.96	2.03
4658	Pleasant	2 or more	7.81	1.42	7.92	1.48	7.67	1.84
4676	Pleasant	2 or more	7.51	1.34	7.13	1.74	7.50	1.81
4687	Pleasant	2 or more	7.31	1.48	7.10	1.81	7.35	2.03
4689	Pleasant	2 or more	7.48	1.18	6.95	1.72	7.29	1.87
4690	Pleasant	2 or more	6.63	1.61	6.66	1.87	7.17	1.95
4694	Pleasant	2 or more	7.63	1.44	7.35	1.64	7.65	1.76
4695	Pleasant	2 or more	7.36	1.51	7.20	1.80	7.24	2.01
5260	Pleasant	0 people	6.98	1.55	5.01	2.33	1.06	0.48
5450	Pleasant	0 people	5.10	1.04	4.42	2.01	1.65	1.55

5470	Pleasant	1 person	5.97	1.21	4.26	4.07	1.25	1.03
5480	Pleasant	0 people	6.94	1.42	5.37	2.08	1.58	1.58
5510	Neutral	0 people	4.82	1.37	2.81	2.02	1.11	0.61
5535	Neutral	0 people	4.74	1.16	2.74	1.94	1.19	1.01
5621	Pleasant	2 or more	7.25	1.44	6.98	1.63	7.64	1.62
5626	Pleasant	1 person	6.83	1.48	5.44	2.13	1.14	0.49
5628	Pleasant	1 person	6.58	1.43	5.36	2.19	2.10	1.86
5629	Pleasant	1 person	6.69	1.38	5.76	1.88	1.45	1.05
5700	Pleasant	0 people	6.31	1.46	4.10	2.32	1.06	0.39
6150	Neutral	0 people	4.96	0.84	2.38	1.80	1.05	0.27
6200	Unpleasant	1 person	3.26	1.44	5.53	1.98	1.29	0.94
6210	Unpleasant	1 person	3.08	1.29	4.98	2.20	1.26	0.99
6250	Unpleasant	1 person	2.76	1.51	6.44	1.97	1.60	1.33
6260	Unpleasant	1 person	2.98	1.46	5.59	2.25	1.22	0.84
6300	Unpleasant	1 person	2.82	1.21	5.64	1.98	1.26	0.91
6315	Unpleasant	2 or more	1.98	1.40	6.84	1.76	5.57	2.39
6370	Unpleasant	1 person	2.89	1.41	5.86	1.79	1.46	1.10
6415	Unpleasant	2 or more	1.92	1.30	6.34	2.04	2.32	1.89
6530	Unpleasant	2 or more	2.04	1.53	6.92	1.65	5.42	2.29
6550	Unpleasant	2 or more	1.60	0.93	7.49	1.73	5.50	2.32
6570	Unpleasant	1 person	2.42	1.34	6.03	2.02	1.55	1.45
6821	Unpleasant	2 or more	2.77	1.15	6.04	1.99	6.03	1.90
6834	Unpleasant	2 or more	2.94	1.49	5.78	1.95	5.31	2.07
7000	Neutral	0 people	4.81	0.63	1.83	1.53	1.04	0.41

7002	Neutral	0 people	4.82	0.83	1.70	1.36	1.06	0.45
7004	Neutral	0 people	4.89	0.96	2.05	1.88	1.14	0.69
7009	Neutral	0 people	5.04	0.88	2.05	1.73	1.16	0.78
7010	Neutral	0 people	4.94	0.88	1.71	1.32	1.09	0.59
7025	Neutral	0 people	4.72	0.66	1.45	1.17	1.01	0.11
7034	Neutral	0 people	4.66	0.74	2.60	1.78	1.10	0.49
7035	Neutral	0 people	4.83	0.98	2.53	1.93	1.26	1.05
7036	Neutral	0 people	4.65	1.01	1.94	1.53	1.33	1.25
7041	Neutral	0 people	4.96	0.84	1.89	1.55	1.19	1.00
7055	Neutral	0 people	4.81	0.68	1.75	1.43	1.03	0.19
7056	Neutral	0 people	4.64	0.86	2.11	1.77	1.14	0.79
7058	Neutral	0 people	5.21	1.09	2.83	2.09	1.25	1.10
7059	Neutral	0 people	4.80	0.67	1.67	1.41	1.11	0.75
7161	Neutral	0 people	4.64	1.16	2.17	1.92	1.39	1.45
7179	Neutral	0 people	5.08	0.94	1.95	1.59	1.06	0.41
7270	Pleasant	0 people	7.27	1.48	6.08	2.03	1.21	0.87
7380	Unpleasant	0 people	1.97	1.42	6.47	2.24	1.09	0.58
7487	Neutral	0 people	5.34	1.91	4.68	2.30	1.07	0.35
7501	Pleasant	0 people	6.36	1.36	5.62	2.02	2.14	2.27
7502	Pleasant	2 or more	7.06	1.48	5.27	2.27	4.60	3.05
8021	Pleasant	1 person	6.21	1.26	5.13	2.24	1.39	0.99
8031	Pleasant	1 person	5.91	1.38	4.72	2.31	1.31	0.94
8034	Pleasant	1 person	5.68	1.20	4.57	2.12	1.34	1.10
8080	Pleasant	1 person	5.82	1.54	4.94	2.31	1.45	1.13

8178	Pleasant	1 person	6.15	1.64	6.41	2.00	1.22	0.71
8179	Pleasant	1 person	6.57	1.75	6.13	1.82	1.22	1.21
8180	Pleasant	2 or more	6.45	1.80	6.89	1.74	4.55	2.22
8186	Pleasant	1 person	6.41	1.45	6.33	2.09	1.51	1.21
8200	Pleasant	1 person	6.97	1.35	5.82	2.03	1.70	1.33
8300	Pleasant	1 person	6.48	1.23	6.19	1.93	1.64	1.20
8485	Unpleasant	2 or more	2.22	1.40	7.10	1.58	4.63	2.37
8500	Pleasant	0 people	7.04	1.41	5.82	2.32	1.18	0.84
8501	Pleasant	0 people	6.76	1.59	5.81	2.40	1.16	0.82
8502	Pleasant	0 people	6.79	1.63	5.88	2.15	1.31	1.21
9050	Unpleasant	2 or more	2.03	1.20	6.83	1.77	6.24	2.27
9070	Neutral	1 person	6.52	1.67	5.38	2.22	1.46	1.36
9120	Unpleasant	1 person	2.93	1.39	5.37	2.15	1.48	1.27
9160	Unpleasant	1 person	3.12	1.30	5.05	2.19	1.42	1.06
9250	Unpleasant	2 or more	2.31	1.24	6.08	1.98	5.38	2.19
9300	Unpleasant	0 people	1.33	0.81	6.59	2.16	1.09	0.59
9423	Unpleasant	2 or more	2.38	1.40	6.06	1.90	5.33	2.36
9452	Unpleasant	2 or more	2.62	1.19	5.22	2.19	4.86	2.12
9560	Unpleasant	0 people	3.58	1.80	4.39	2.37	1.12	0.85
9570	Unpleasant	0 people	1.37	0.74	7.09	1.80	1.16	0.77
9600	Unpleasant	0 people	2.94	1.47	5.55	2.18	1.57	1.49
9620	Unpleasant	0 people	3.09	1.33	5.31	2.19	1.39	1.25
9630	Unpleasant	0 people	3.07	1.59	5.60	2.21	1.33	1.19
9635	Unpleasant	2 or more	2.05	1.68	7.17	1.82	1.84	1.61

9700	Neutral	2 or more	4.41	0.97	3.14	1.91	4.87	2.15
9800	Unpleasant	1 person	2.09	1.19	6.02	2.04	1.50	1.38
9910	Unpleasant	2 or more	2.34	1.32	6.08	1.96	5.25	2.26
9911	Unpleasant	0 people	2.61	1.47	5.72	2.10	1.40	1.07
9920	Unpleasant	2 or more	2.57	1.34	5.66	2.01	2.00	1.55
9921	Unpleasant	2 or more	2.10	1.28	6.61	1.90	5.96	2.11
9925	Unpleasant	2 or more	2.52	1.42	6.11	1.67	2.64	2.45

EmoMadrid Code	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
ep0067	Unpleasant	1 person	3.09	1.79	6.44	1.89	1.08	0.47
ep0129	Pleasant	2 or more	7.69	1.41	7.12	1.96	1.29	1.32
ep0218	Pleasant	2 or more	7.79	1.48	7.24	2.05	1.17	0.85
ep0219	Pleasant	2 or more	7.05	1.54	6.30	2.15	1.25	1.15
ep0223	Unpleasant	1 person	2.90	1.92	6.52	1.92	1.10	0.60
ep0260	Pleasant	2 or more	7.29	1.68	6.36	2.24	1.51	1.62
ep0269	Pleasant	2 or more	7.38	1.58	6.64	2.19	1.19	1.01
ep0274	Pleasant	2 or more	7.63	1.42	7.01	2.12	1.22	0.98
ep0281	Unpleasant	1 person	3.38	1.82	6.08	2.05	1.10	0.54
ep0284	Unpleasant	1 person	2.96	1.71	6.64	1.74	1.08	0.53
ep0286	Unpleasant	1 person	3.02	1.42	5.20	2.16	1.08	0.57
ep0287	Unpleasant	1 person	3.58	2.04	5.80	2.15	1.15	0.78
ep0295	Unpleasant	1 person	3.38	1.61	4.43	2.37	1.21	1.01
ep0320	Unpleasant	1 person	2.87	1.37	5.08	2.15	1.14	0.77

ep0321	Unpleasant	1 person	2.51	1.61	6.49	1.59	1.35	1.14
ep0325	Unpleasant	1 person	3.25	1.56	4.92	2.34	1.08	0.53
ep0326	Unpleasant	1 person	2.32	1.29	5.87	2.12	1.27	1.09
ep0327	Unpleasant	1 person	2.03	1.26	6.70	2.00	1.49	1.39
ep0367	Unpleasant	1 person	4.33	1.84	5.82	1.96	2.82	2.31
ep0376	Unpleasant	1 person	3.71	1.38	5.55	1.91	1.61	1.45
ep0379	Pleasant	2 or more	6.59	1.78	5.76	2.03	1.27	1.11
ep0391	Unpleasant	1 person	1.59	1.03	6.12	2.10	1.12	0.58
ep0397	Pleasant	2 or more	6.22	1.41	5.39	2.16	5.85	2.16
ep0398	Pleasant	2 or more	7.07	1.72	5.87	2.29	1.17	0.82
ep0399	Pleasant	2 or more	6.73	1.51	5.87	2.09	5.22	2.13
ep0431	Pleasant	2 or more	7.49	1.36	6.18	2.20	1.23	0.78
ep0433	Pleasant	2 or more	6.50	1.91	4.99	2.17	1.19	0.90
ep0435	Pleasant	2 or more	6.86	1.67	6.99	1.87	4.99	2.45
ep0437	Pleasant	2 or more	7.95	1.11	6.87	1.95	1.37	1.27
ep0445	Pleasant	2 or more	7.47	1.66	6.65	1.99	1.36	1.29
ep0527	Pleasant	2 or more	7.26	1.51	5.81	2.12	1.52	1.44
ep0579	Unpleasant	1 person	2.60	1.35	5.95	1.92	1.26	0.95
ep0581	Unpleasant	1 person	2.99	1.51	5.83	2.14	1.11	0.61
ep0586	Unpleasant	1 person	1.97	1.07	5.86	1.93	1.10	0.49

Appendix 2. Subjective ratings (mean and standard deviation) of the pictures selected from the IAPS and EmoMadrid databases in our experimental sample (female participants).

IAPS Code	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
1525	unpleasant	0 people	2.58	1.43	6.66	1.80	1.13	0.58
1650	pleasant	0 people	7.08	1.48	6.17	2.02	1.07	0.43
2030	pleasant	1 person	6.44	1.28	3.97	1.85	1.77	1.62
2038	neutral	1 person	5.28	1.38	2.97	1.84	1.18	0.54
2102	neutral	1 person	5.38	1.30	3.09	2.02	1.30	0.86
2190	neutral	1 person	4.97	1.02	2.64	1.75	1.32	0.97
2210	neutral	1 person	4.74	1.24	3.97	1.90	1.46	1.16
2214	neutral	1 person	5.20	1.04	2.92	1.85	1.33	1.04
2216	pleasant	2 or more	6.95	1.17	5.59	2.08	6.37	2.13
2346	pleasant	2 or more	7.16	1.76	6.30	1.96	4.70	2.08
2385	neutral	1 person	4.63	1.30	3.41	2.10	1.26	0.87
2393	neutral	2 or more	4.79	0.87	2.59	1.67	2.69	1.92
2396	neutral	2 or more	4.87	0.77	2.36	1.52	3.21	1.83
2440	neutral	1 person	4.74	0.83	2.46	1.65	1.23	0.85
2441	neutral	1 person	4.92	1.29	3.55	2.09	1.33	0.95
2446	neutral	1 person	4.21	1.38	3.39	2.04	1.19	0.86
2480	neutral	1 person	5.31	1.26	3.13	2.00	1.16	0.58
2495	neutral	1 person	4.80	0.99	2.36	1.69	1.14	0.49
2499	neutral	1 person	5.39	1.21	2.82	1.89	1.25	0.99
2512	neutral	1 person	5.19	0.91	3.37	1.90	1.66	1.42
2514	neutral	1 person	4.96	0.97	2.79	1.66	1.55	1.25
2516	neutral	1 person	4.94	0.90	2.75	1.63	1.18	0.64
2580	neutral	2 or more	5.79	1.18	3.27	1.81	6.24	1.83
2595	neutral	2 or more	5.51	1.16	3.60	1.95	6.57	1.70
2683	unpleasant	2 or more	2.01	1.06	6.46	1.85	5.74	2.28
2688	unpleasant	1 person	2.30	1.68	6.28	2.08	1.77	1.53
2703	unpleasant	2 or more	1.56	1.03	7.42	1.49	5.88	2.16
2717	unpleasant	1 person	2.22	1.48	6.45	2.19	1.39	0.98
2730	unpleasant	1 person	1.78	1.31	6.47	2.26	1.88	1.82
2745	neutral	1 person	5.05	0.80	2.42	1.72	1.30	0.99
2749	neutral	1 person	4.48	1.11	2.95	1.78	1.72	1.28
2840	neutral	1 person	5.01	1.03	3.24	2.05	1.47	1.10
2850	neutral	2 or more	4.86	1.15	3.56	1.84	2.37	2.00
2870	neutral	1 person	5.60	1.27	3.70	1.95	1.46	1.16
2890	neutral	2 or more	4.50	1.10	2.62	1.61	2.19	1.61
3062	unpleasant	1 person	1.23	0.62	7.23	1.84	1.11	0.65
3100	unpleasant	1 person	1.12	0.49	7.97	1.53	1.30	1.00

3150	unpleasant	1 person	1.25	0.67	7.74	1.81	1.09	0.67
3280	unpleasant	2 or more	3.03	1.36	5.23	2.13	4.70	2.12
3400	unpleasant	0 people	1.13	0.40	7.97	1.52	1.13	0.67
3530	unpleasant	2 or more	1.76	1.08	6.65	1.89	5.59	2.25
4150	pleasant	1 person	5.27	1.37	3.58	2.02	1.38	1.11
4235	pleasant	1 person	4.99	1.64	4.06	2.12	1.30	0.97
4250	pleasant	1 person	6.12	1.68	4.28	2.07	1.47	1.02
4255	pleasant	1 person	5.61	1.65	3.83	2.06	1.39	1.08
4274	pleasant	1 person	5.53	1.20	3.53	2.13	1.29	0.96
4279	pleasant	1 person	3.67	1.74	4.33	2.14	1.32	0.72
4510	pleasant	1 person	5.87	1.49	4.59	2.23	1.18	0.75
4531	pleasant	1 person	7.28	1.50	6.39	1.87	1.36	1.18
4532	pleasant	1 person	6.98	1.35	5.47	1.98	1.58	1.30
4538	pleasant	1 person	7.47	1.63	6.78	2.13	1.32	1.16
4561	pleasant	1 person	7.28	1.82	7.31	1.83	1.61	1.49
4572	pleasant	1 person	7.90	1.46	7.39	1.61	1.92	1.87
4598	pleasant	2 or more	7.14	1.77	6.73	1.64	7.69	1.60
4608	pleasant	2 or more	7.49	1.24	6.91	1.89	7.35	1.85
4609	pleasant	2 or more	6.45	1.23	5.40	1.94	6.43	1.82
4645	pleasant	2 or more	7.27	1.44	6.60	1.77	7.69	1.71
4656	pleasant	2 or more	6.13	2.02	6.08	2.06	7.18	1.90
4658	pleasant	2 or more	7.74	1.52	7.95	1.42	7.89	1.62
4676	pleasant	2 or more	7.64	1.27	7.30	1.65	7.73	1.63
4687	pleasant	2 or more	7.27	1.56	7.13	1.74	7.57	1.88
4689	pleasant	2 or more	7.49	1.20	6.97	1.72	7.54	1.68
4690	pleasant	2 or more	6.46	1.69	6.56	1.96	7.37	1.86
4694	pleasant	2 or more	7.55	1.52	7.34	1.68	7.76	1.67
4695	pleasant	2 or more	7.34	1.55	7.30	1.78	7.46	1.79
5260	pleasant	0 people	6.92	1.65	5.03	2.37	1.05	0.41
5450	pleasant	0 people	5.07	1.06	4.33	1.99	1.52	1.25
5470	pleasant	1 person	5.97	1.19	4.26	2.27	1.16	0.78
5480	pleasant	0 people	7.04	1.39	5.40	2.08	1.52	1.53
5510	neutral	0 people	4.69	1.42	2.72	1.96	1.09	0.57
5535	neutral	0 people	4.62	1.21	2.67	1.90	1.09	0.63
5621	pleasant	2 or more	7.34	1.40	7.02	1.62	7.73	1.61
5626	pleasant	1 person	6.91	1.37	5.47	2.07	1.10	0.42
5628	pleasant	1 person	6.54	1.47	5.28	2.14	1.95	1.72
5629	pleasant	1 person	6.63	1.40	5.87	1.81	1.34	0.91
5700	pleasant	0 people	6.27	1.47	4.08	2.29	1.03	0.18
6150	neutral	0 people	5.05	0.81	2.50	1.90	1.04	0.24
6200	unpleasant	1 person	2.97	1.37	5.53	2.03	1.27	0.98
6210	unpleasant	1 person	2.78	1.23	5.17	2.16	1.20	0.86
6250	unpleasant	1 person	2.39	1.34	6.66	1.94	1.44	1.12
6260	unpleasant	1 person	2.71	1.44	5.75	2.28	1.22	0.86
6300	unpleasant	1 person	2.63	1.15	5.76	1.97	1.27	0.93
6315	unpleasant	2 or more	1.92	1.49	6.90	1.70	5.65	2.39

6370	unpleasant	1 person	2.58	1.24	6.03	1.71	1.35	0.93
6415	unpleasant	2 or more	1.76	1.26	6.53	1.89	2.32	1.99
6530	unpleasant	2 or more	1.80	1.36	7.04	1.54	5.53	2.26
6550	unpleasant	2 or more	1.51	0.81	7.53	1.63	5.55	2.22
6570	unpleasant	1 person	2.19	1.18	6.08	2.00	1.44	1.32
6821	unpleasant	2 or more	2.61	1.14	6.00	1.97	6.06	1.89
6834	unpleasant	2 or more	2.79	1.42	5.79	1.97	5.26	2.12
7000	neutral	0 people	4.80	0.67	1.70	1.34	1.05	0.47
7002	neutral	0 people	4.79	0.89	1.71	1.42	1.04	0.38
7004	neutral	0 people	4.84	1.02	2.10	1.95	1.16	0.79
7009	neutral	0 people	5.03	0.84	1.99	1.75	1.18	0.88
7010	neutral	0 people	4.95	0.80	1.59	1.24	1.06	0.48
7025	neutral	0 people	4.75	0.63	1.42	1.13	1.01	0.09
7034	neutral	0 people	4.61	0.75	2.52	1.74	1.08	0.46
7035	neutral	0 people	4.79	0.87	2.34	1.87	1.25	1.12
7036	neutral	0 people	4.64	0.99	1.86	1.45	1.21	1.07
7041	neutral	0 people	4.98	0.77	1.76	1.47	1.08	0.48
7055	neutral	0 people	4.81	0.60	1.63	1.28	1.02	0.13
7056	neutral	2 or more	4.65	0.93	1.96	1.68	1.13	0.80
7058	neutral	0 people	5.05	0.96	2.58	1.91	1.15	0.69
7059	neutral	0 people	4.81	0.62	1.52	1.19	1.08	0.74
7161	neutral	0 people	4.62	1.13	2.00	1.79	1.27	1.24
7179	neutral	0 people	5.13	0.93	1.99	1.67	1.01	0.09
7270	pleasant	0 people	7.58	1.24	6.24	2.06	1.19	0.90
7380	unpleasant	0 people	1.70	1.23	6.80	2.05	1.09	0.64
7487	neutral	0 people	5.43	2.00	4.84	2.30	1.06	0.33
7501	pleasant	0 people	6.44	1.35	5.50	1.98	1.95	2.09
7502	pleasant	2 or more	7.26	1.41	5.50	2.33	4.56	3.04
8021	pleasant	1 person	6.22	1.20	5.14	2.29	1.30	0.90
8031	pleasant	1 person	5.95	1.35	4.69	2.23	1.23	0.81
8034	pleasant	1 person	5.71	1.16	4.55	2.04	1.21	0.65
8080	pleasant	1 person	5.85	1.56	4.92	2.29	1.33	0.89
8178	pleasant	1 person	6.13	1.60	6.47	1.87	1.19	0.70
8179	pleasant	1 person	6.04	1.79	7.14	1.81	1.40	0.94
8180	pleasant	2 or more	6.49	1.83	6.92	1.71	4.60	2.18
8186	pleasant	1 person	6.36	1.43	6.34	2.10	1.31	0.89
8300	pleasant	1 person	6.50	1.19	6.22	1.91	1.50	0.98
8485	unpleasant	2 or more	1.92	1.15	7.22	1.47	4.54	2.39
8500	pleasant	0 people	7.06	1.40	5.86	2.28	1.15	0.81
8501	pleasant	0 people	6.86	1.54	5.84	2.39	1.17	0.90
8502	pleasant	0 people	6.95	1.53	6.06	2.09	1.26	1.17
8820	pleasant	1 person	7.24	1.24	6.11	1.93	1.71	1.36
9050	unpleasant	2 or more	1.84	1.00	6.86	1.84	6.20	2.17
9070	neutral	1 person	6.78	1.58	5.56	2.18	1.48	1.47
9120	unpleasant	1 person	2.62	1.13	5.41	2.08	1.37	1.13
9160	unpleasant	1 person	2.87	1.21	5.22	2.18	1.35	1.00

9250	unpleasant	2 or more	2.09	1.14	6.24	1.92	5.45	2.23
9300	unpleasant	0 people	1.21	0.64	6.79	2.00	1.05	0.39
9423	unpleasant	2 or more	2.25	1.23	6.14	1.80	5.32	2.36
9452	unpleasant	2 or more	2.50	1.20	5.31	2.19	4.94	2.14
9560	unpleasant	0 people	3.48	1.81	4.34	2.37	1.01	0.09
9570	unpleasant	0 people	1.34	0.74	7.14	1.83	1.20	0.89
9600	unpleasant	0 people	2.84	1.48	5.51	2.22	1.41	1.16
9620	unpleasant	0 people	2.93	1.27	5.33	2.17	1.31	1.04
9630	unpleasant	0 people	2.82	1.42	5.53	2.24	1.24	0.99
9635	unpleasant	2 or more	1.92	1.68	7.22	1.72	1.82	1.62
9700	neutral	2 or more	4.36	0.99	3.14	1.87	4.92	2.13
9800	unpleasant	1 person	2.01	1.13	5.89	2.03	1.39	1.24
9910	unpleasant	2 or more	2.24	1.36	6.27	1.95	5.30	2.29
9911	unpleasant	0 people	2.36	1.33	5.83	2.08	1.34	1.00
9920	unpleasant	2 or more	2.44	1.34	5.79	1.94	1.85	1.41
9921	unpleasant	2 or more	1.73	0.97	6.70	1.95	5.98	2.23
9925	unpleasant	2 or more	2.26	1.27	6.23	1.53	2.50	2.38

Emo Madrid	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
ep0067	unpleasant	0 people	2.88	1.76	6.44	1.91	1.05	0.39
ep0129	pleasant	0 people	7.70	1.49	7.18	1.90	1.28	1.28
ep0218	pleasant	0 people	7.78	1.47	7.16	2.14	1.14	0.78
ep0219	pleasant	0 people	6.97	1.47	6.19	2.17	1.21	1.05
ep0223	unpleasant	0 people	2.67	1.91	6.67	1.83	1.12	0.69
ep0260	pleasant	0 people	7.48	1.46	6.41	2.17	1.35	1.38
ep0269	pleasant	0 people	7.51	1.42	6.77	2.05	1.18	1.00
ep0274	pleasant	0 people	7.60	1.47	7.01	2.10	1.24	1.08
ep0281	unpleasant	0 people	3.22	1.74	6.20	2.04	1.10	0.60
ep0284	unpleasant	0 people	2.64	1.60	6.77	1.70	1.08	0.59
ep0286	unpleasant	0 people	2.90	1.40	5.20	2.13	1.08	0.65
ep0287	unpleasant	0 people	3.20	1.93	5.96	2.12	1.16	0.87
ep0295	unpleasant	0 people	3.17	1.61	4.47	2.39	1.22	1.12
ep0320	unpleasant	0 people	2.75	1.37	5.08	2.14	1.10	0.67
ep0321	unpleasant	0 people	2.30	1.60	6.55	1.61	1.31	1.06
ep0325	unpleasant	0 people	3.04	1.46	4.92	2.35	1.04	0.46
ep0326	unpleasant	0 people	2.19	1.29	6.03	2.10	1.22	1.06
ep0327	unpleasant	1 person	1.82	1.09	6.76	1.99	1.41	1.24
ep0367	unpleasant	0 people	4.00	1.82	5.90	1.96	2.79	2.29
ep0376	unpleasant	1 person	3.64	1.40	5.70	1.83	1.57	1.52
ep0379	pleasant	0 people	6.71	1.74	5.82	2.09	1.25	1.04
ep0391	unpleasant	0 people	1.44	0.90	6.32	2.08	1.06	0.27
ep0397	pleasant	2 or more	6.17	1.40	5.34	2.06	5.80	2.18
ep0398	pleasant	0 people	7.20	1.63	6.01	2.31	1.13	0.63
ep0399	pleasant	2 or more	6.84	1.61	6.09	2.03	5.28	2.14
ep0431	pleasant	0 people	7.71	1.33	6.45	2.20	1.23	0.80

ep0433	pleasant	0 people	6.73	1.84	5.36	2.11	1.20	0.99
ep0435	pleasant	2 or more	6.81	1.82	7.07	1.90	4.95	2.41
ep0437	pleasant	0 people	8.17	0.99	7.10	1.80	1.34	1.24
ep0445	pleasant	0 people	7.61	1.76	6.88	1.95	1.37	1.33
ep0527	pleasant	0 people	7.41	1.57	5.95	2.13	1.48	1.41
ep0579	unpleasant	1 person	2.28	1.09	5.88	1.95	1.22	0.90
ep0581	unpleasant	0 people	2.91	1.61	5.89	2.23	1.10	0.58
ep0586	unpleasant	1 person	1.96	1.05	5.89	1.84	1.07	0.48

Appendix 3. Subjective ratings (mean and standard deviation) of the pictures selected from the IAPS and EmoMadrid databases in our experimental sample (male participants).

IAPS Code	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
1525	unpleasant	0 people	5.00	2.08	1.67	1.26	3.24	1.61
1650	pleasant	0 people	1.67	1.26	3.24	1.61	5.76	2.00
2030	pleasant	1 person	3.24	1.61	5.76	2.00	3.02	2.64
2038	neutral	1 person	5.76	2.00	3.02	2.64	5.19	0.99
2102	neutral	1 person	3.02	2.64	5.19	0.99	4.69	2.07
2190	neutral	1 person	5.19	0.99	4.69	2.07	2.00	2.18
2210	neutral	1 person	4.69	2.07	2.00	2.18	4.90	1.19
2214	neutral	1 person	2.00	2.18	4.90	1.19	3.50	1.92
2216	pleasant	2 or more	4.90	1.19	3.50	1.92	2.00	1.74
2346	pleasant	2 or more	3.50	1.92	2.00	1.74	3.10	1.51
2385	neutral	1 person	2.00	1.74	3.10	1.51	6.33	1.54
2393	neutral	2 or more	3.10	1.51	6.33	1.54	1.48	1.33
2396	neutral	2 or more	6.33	1.54	1.48	1.33	5.31	2.14
2440	neutral	1 person	1.48	1.33	5.31	2.14	5.79	2.09
2441	neutral	1 person	5.31	2.14	5.79	2.09	1.83	1.74
2446	neutral	1 person	5.79	2.09	1.83	1.74	4.79	0.72
2480	neutral	1 person	1.83	1.74	4.79	0.72	2.83	1.87
2495	neutral	1 person	4.79	0.72	2.83	1.87	1.14	0.57
2499	neutral	1 person	2.83	1.87	1.14	0.57	3.79	1.49
2512	neutral	1 person	1.14	0.57	3.79	1.49	5.40	1.94
2514	neutral	1 person	3.79	1.49	5.40	1.94	1.76	1.45
2516	neutral	1 person	5.40	1.94	1.76	1.45	7.02	1.55
2580	neutral	2 or more	1.76	1.45	7.02	1.55	6.86	1.68
2595	neutral	2 or more	7.02	1.55	6.86	1.68	7.38	1.64
2683	unpleasant	2 or more	6.86	1.68	7.38	1.64	4.74	1.08

2688	unpleasant	1 person	7.38	1.64	4.74	1.08	4.00	2.24
2703	unpleasant	2 or more	4.74	1.08	4.00	2.24	1.69	1.47
2717	unpleasant	1 person	4.00	2.24	1.69	1.47	6.86	1.34
2730	unpleasant	1 person	1.69	1.47	6.86	1.34	5.45	2.07
2745	neutral	1 person	6.86	1.34	5.45	2.07	1.74	1.34
2749	neutral	1 person	5.45	2.07	1.74	1.34	2.02	1.24
2840	neutral	1 person	1.74	1.34	2.02	1.24	5.55	2.10
2850	neutral	2 or more	2.02	1.24	5.55	2.10	1.31	1.02
2870	neutral	1 person	5.55	2.10	1.31	1.02	5.57	0.94
2890	neutral	2 or more	1.31	1.02	5.57	0.94	3.57	1.85
3062	unpleasant	1 person	5.57	0.94	3.57	1.85	5.86	1.59
3100	unpleasant	1 person	3.57	1.85	5.86	1.59	6.83	1.03
3150	unpleasant	1 person	5.86	1.59	6.83	1.03	5.45	1.93
3280	unpleasant	2 or more	6.83	1.03	5.45	1.93	2.29	2.05
3400	unpleasant	0 people	5.45	1.93	2.29	2.05	4.71	1.15
3530	unpleasant	2 or more	2.29	2.05	4.71	1.15	3.43	1.95
4150	pleasant	1 person	4.71	1.15	3.43	1.95	3.31	2.61
4235	pleasant	1 person	3.43	1.95	3.31	2.61	2.86	1.05
4250	pleasant	1 person	3.31	2.61	2.86	1.05	5.86	1.96
4255	pleasant	1 person	2.86	1.05	5.86	1.96	1.69	1.44
4274	pleasant	1 person	5.86	1.96	1.69	1.44	7.50	1.47
4279	pleasant	1 person	1.69	1.44	7.50	1.47	5.98	2.17
4510	pleasant	1 person	7.50	1.47	5.98	2.17	2.07	1.90
4531	pleasant	1 person	5.98	2.17	2.07	1.90	5.10	0.98
4532	pleasant	1 person	2.07	1.90	5.10	0.98	2.21	1.68
4538	pleasant	1 person	5.10	0.98	2.21	1.68	1.10	0.37
4561	pleasant	1 person	2.21	1.68	1.10	0.37	7.33	1.20
4572	pleasant	1 person	1.10	0.37	7.33	1.20	6.21	2.21
4598	pleasant	2 or more	7.33	1.20	6.21	2.21	1.48	1.37
4608	pleasant	2 or more	6.21	2.21	1.48	1.37	4.95	1.13
4609	pleasant	2 or more	1.48	1.37	4.95	1.13	3.12	1.74
4645	pleasant	2 or more	4.95	1.13	3.12	1.74	2.48	1.94
4656	pleasant	2 or more	3.12	1.74	2.48	1.94	6.88	1.27
4658	pleasant	2 or more	2.48	1.94	6.88	1.27	5.40	2.05
4676	pleasant	2 or more	6.88	1.27	5.40	2.05	1.24	0.73
4687	pleasant	2 or more	5.40	2.05	1.24	0.73	5.45	1.02
4689	pleasant	2 or more	1.24	0.73	5.45	1.02	3.81	1.66
4690	pleasant	2 or more	5.45	1.02	3.81	1.66	5.93	2.05
4694	pleasant	2 or more	3.81	1.66	5.93	2.05	8.02	1.33
4695	pleasant	2 or more	5.93	2.05	8.02	1.33	7.33	1.84
5260	pleasant	0 people	8.02	1.33	7.33	1.84	1.64	1.50
5450	pleasant	0 people	7.33	1.84	1.64	1.50	4.95	1.23
5470	pleasant	1 person	1.64	1.50	4.95	1.23	3.10	2.01
5480	pleasant	0 people	4.95	1.23	3.10	2.01	1.29	0.81
5510	neutral	0 people	3.10	2.01	1.29	0.81	3.05	1.70
5535	neutral	0 people	1.29	0.81	3.05	1.70	6.76	1.83

5621	pleasant	2 or more	3.05	1.70	6.76	1.83	4.90	2.34
5626	pleasant	1 person	6.76	1.83	4.90	2.34	6.14	1.35
5628	pleasant	1 person	4.90	2.34	6.14	1.35	5.93	2.15
5629	pleasant	1 person	6.14	1.35	5.93	2.15	2.69	2.68
5700	pleasant	0 people	5.93	2.15	2.69	2.68	4.81	0.97
6150	neutral	0 people	2.69	2.68	4.81	0.97	2.93	1.87
6200	unpleasant	1 person	4.81	0.97	2.93	1.87	2.88	1.66
6210	unpleasant	1 person	2.93	1.87	2.88	1.66	5.21	1.47
6250	unpleasant	1 person	2.88	1.66	5.21	1.47	3.60	2.29
6260	unpleasant	1 person	5.21	1.47	3.60	2.29	1.74	1.34
6300	unpleasant	1 person	3.60	2.29	1.74	1.34	3.55	1.81
6315	unpleasant	2 or more	1.74	1.34	3.55	1.81	6.07	2.12
6370	unpleasant	1 person	3.55	1.81	6.07	2.12	1.05	0.22
6415	unpleasant	2 or more	6.07	2.12	1.05	0.22	6.76	1.56
6530	unpleasant	2 or more	1.05	0.22	6.76	1.56	6.05	1.92
6550	unpleasant	2 or more	6.76	1.56	6.05	1.92	7.17	2.06
6570	unpleasant	1 person	6.05	1.92	7.17	2.06	5.07	1.09
6821	unpleasant	2 or more	7.17	2.06	5.07	1.09	2.62	1.65
6834	unpleasant	2 or more	5.07	1.09	2.62	1.65	1.95	1.45
7000	neutral	0 people	2.62	1.65	1.95	1.45	3.36	1.62
7002	neutral	0 people	1.95	1.45	3.36	1.62	5.76	1.92
7004	neutral	0 people	3.36	1.62	5.76	1.92	5.45	1.93
7009	neutral	0 people	5.76	1.92	5.45	1.93	7.05	1.27
7010	neutral	0 people	5.45	1.93	7.05	1.27	6.00	1.96
7025	neutral	0 people	7.05	1.27	6.00	1.96	1.33	1.20
7034	neutral	0 people	6.00	1.96	1.33	1.20	2.43	1.67
7035	neutral	0 people	1.33	1.20	2.43	1.67	7.05	2.11
7036	neutral	0 people	2.43	1.67	7.05	2.11	1.90	1.61
7041	neutral	0 people	7.05	2.11	1.90	1.61	5.05	0.73
7055	neutral	0 people	1.90	1.61	5.05	0.73	1.90	1.69
7056	neutral	2 or more	5.05	0.73	1.90	1.69	1.07	0.26
7058	neutral	0 people	1.90	1.69	1.07	0.26	6.45	1.35
7059	neutral	0 people	1.07	0.26	6.45	1.35	6.12	2.00
7161	neutral	0 people	6.45	1.35	6.12	2.00	2.05	1.62
7179	neutral	0 people	6.12	2.00	2.05	1.62	3.79	1.49
7270	pleasant	0 people	2.05	1.62	3.79	1.49	5.83	1.95
7380	unpleasant	0 people	3.79	1.49	5.83	1.95	2.07	1.72
7487	neutral	0 people	5.83	1.95	2.07	1.72	7.29	1.29
7501	pleasant	0 people	2.07	1.72	7.29	1.29	5.37	2.15
7502	pleasant	2 or more	7.29	1.29	5.37	2.15	4.24	2.30
8021	pleasant	1 person	5.37	2.15	4.24	2.30	4.64	1.51
8031	pleasant	1 person	4.24	2.30	4.64	1.51	3.76	2.13
8034	pleasant	1 person	4.64	1.51	3.76	2.13	1.52	1.45
8080	pleasant	1 person	3.76	2.13	1.52	1.45	2.12	1.09
8178	pleasant	1 person	1.52	1.45	2.12	1.09	6.69	1.92
8179	pleasant	1 person	2.12	1.09	6.69	1.92	5.33	2.41

8180	pleasant	2 or more	6.69	1.92	5.33	2.41	4.69	1.28
8186	pleasant	1 person	5.33	2.41	4.69	1.28	2.64	2.20
8300	pleasant	1 person	4.69	1.28	2.64	2.20	1.71	1.90
8485	unpleasant	2 or more	2.64	2.20	1.71	1.90	6.54	1.50
8500	pleasant	0 people	1.71	1.90	6.54	1.50	6.27	2.07
8501	pleasant	0 people	6.54	1.50	6.27	2.07	2.10	1.74
8502	pleasant	0 people	6.27	2.07	2.10	1.74	2.00	1.01
8820	pleasant	1 person	6.27	2.07	2.10	1.74	2.00	1.01
9050	unpleasant	2 or more	2.00	1.01	7.02	1.66	6.07	2.13
9070	neutral	1 person	7.02	1.66	6.07	2.13	4.63	1.26
9120	unpleasant	1 person	6.07	2.13	4.63	1.26	3.76	1.93
9160	unpleasant	1 person	4.63	1.26	3.76	1.93	5.68	2.18
9250	unpleasant	2 or more	3.76	1.93	5.68	2.18	6.76	2.14
9300	unpleasant	0 people	5.68	2.18	6.76	2.14	6.20	2.45
9423	unpleasant	2 or more	6.76	2.14	6.20	2.45	1.95	2.12
9452	unpleasant	2 or more	6.20	2.45	1.95	2.12	2.74	1.78
9560	unpleasant	0 people	1.95	2.12	2.74	1.78	6.57	1.90
9570	unpleasant	0 people	2.74	1.78	6.57	1.90	5.12	2.37
9600	unpleasant	0 people	6.57	1.90	5.12	2.37	4.62	0.66
9620	unpleasant	0 people	5.12	2.37	4.62	0.66	2.52	1.94
9630	unpleasant	0 people	4.62	0.66	2.52	1.94	1.17	0.79
9635	unpleasant	2 or more	2.52	1.94	1.17	0.79	6.64	1.48
9700	neutral	2 or more	1.17	0.79	6.64	1.48	5.29	2.12
9800	unpleasant	1 person	6.64	1.48	5.29	2.12	1.74	1.71
9910	unpleasant	2 or more	5.29	2.12	1.74	1.71	6.07	1.55
9911	unpleasant	0 people	1.74	1.71	6.07	1.55	4.88	1.86
9920	unpleasant	2 or more	6.07	1.55	4.88	1.86	5.24	1.81
9921	unpleasant	2 or more	4.88	1.86	5.24	1.81	4.67	1.96
9925	unpleasant	2 or more	5.24	1.81	4.67	1.96	5.33	2.22

Emo Madrid	Emotion	Social content	Valence	SD	Arousal	SD	Social interaction	SD
ep0067	unpleasant	0 people	4.67	1.96	5.33	2.22	1.12	0.40
ep0129	pleasant	0 people	5.33	2.22	1.12	0.40	5.19	1.29
ep0218	pleasant	0 people	1.12	0.40	5.19	1.29	2.67	1.86
ep0219	pleasant	0 people	5.19	1.29	2.67	1.86	1.74	1.15
ep0223	unpleasant	0 people	2.67	1.86	1.74	1.15	6.38	1.61
ep0260	pleasant	0 people	1.74	1.15	6.38	1.61	7.19	1.88
ep0269	pleasant	0 people	6.38	1.61	7.19	1.88	2.00	1.68
ep0274	pleasant	0 people	7.19	1.88	2.00	1.68	4.83	0.99
ep0281	unpleasant	0 people	2.00	1.68	4.83	0.99	3.31	1.75
ep0284	unpleasant	0 people	4.83	0.99	3.31	1.75	5.67	1.60
ep0286	unpleasant	0 people	3.31	1.75	5.67	1.60	6.33	1.82
ep0287	unpleasant	0 people	5.67	1.60	6.33	1.82	5.38	2.27
ep0295	unpleasant	0 people	6.33	1.82	5.38	2.27	1.45	1.33
ep0320	unpleasant	0 people	5.38	2.27	1.45	1.33	1.17	0.44

ep0321	unpleasant	0 people	1.45	1.33	1.17	0.44	7.62	1.56
ep0325	unpleasant	0 people	1.17	0.44	7.62	1.56	1.45	1.09
ep0326	unpleasant	0 people	7.62	1.56	1.45	1.09	4.93	1.09
ep0327	unpleasant	1 person	1.45	1.09	4.93	1.09	2.07	1.45
ep0367	unpleasant	0 people	4.93	1.09	2.07	1.45	1.19	0.83
ep0376	unpleasant	1 person	2.07	1.45	1.19	0.83	4.00	1.93
ep0379	pleasant	0 people	1.19	0.83	4.00	1.93	4.38	2.57
ep0391	unpleasant	0 people	4.00	1.93	4.38	2.57	1.86	1.51
ep0397	pleasant	2 or more	4.38	2.57	1.86	1.51	3.33	1.60
ep0398	pleasant	0 people	1.86	1.51	3.33	1.60	5.40	2.14
ep0399	pleasant	2 or more	3.33	1.60	5.40	2.14	1.57	1.23
ep0431	pleasant	0 people	5.40	2.14	1.57	1.23	5.43	1.52
ep0433	pleasant	0 people	1.57	1.23	5.43	1.52	3.62	1.87
ep0435	pleasant	2 or more	5.43	1.52	3.62	1.87	1.88	1.74
ep0437	pleasant	0 people	3.62	1.87	1.88	1.74	1.43	0.80
ep0445	pleasant	0 people	1.88	1.74	1.43	0.80	7.19	1.93
ep0527	pleasant	0 people	1.43	0.80	7.19	1.93	1.21	0.78
ep0579	unpleasant	1 person	7.19	1.93	1.21	0.78	5.02	0.92
ep0581	unpleasant	0 people	1.21	0.78	5.02	0.92	2.45	1.48
ep0586	unpleasant	1 person	5.02	0.92	2.45	1.48	4.88	1.99
