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## Emotional Perception in 11S (USA) and 11M (Spain) Advertisement

**Abstract**

The aim of this paper is to contrast whether cognitive memory and emotional recall related to a tragic event and exposure to advertisements that evoke such an experience generates a negative emotional change in the target. We performed an experiment that analyzes emotional changes derived from advertisements featured in the national press ten years after terrorist attacks. We chose the attacks: September 11, 2001, in New York City, and March 11, 2004, in Madrid and analyze the cognitive recall in a set of Spanish and United States focus groups. The results show a significant emotional change in the respondents after the advertisement visualization that is more strongly linked to the recall of a negative event than to the advertisement creativity.

**Keywords**

Advertising, emotion, perception, communication, mood, terrorist attacks.

### 1. Introduction

Emotion is used in advertisement as a technique to reach the receptor empathy. It includes as part of publicity narrative through emotional inputs that receptors embrace in a cognitive way, valuating and explaining by means of expressive and physical changes, and through actions, laugh, weeping and surprise (Kleinginna & Kleinginna, 1981; Sorinas, Ferrández & Fernández, 2020). The employment of positive and negative emotions is usual in advertisement, however is questioned if

negative emotions work and if the emotional mood in which an event took place is recalled and the same when the event is remembered (Bower, 2002; Gainotti, 2020).

The aim of this paper is to contrast if the memory cognitive recall related to a tragic event, as a terrorist attack, and the exposure to advertisements that evokes to the experience generates a negative emotional change in the target. For such a purpose, we have performed an experiment where emotional changes derived from the advertisement spread selected from national press almost ten years after terrorist attacks are analyzed, 11S, New York (11/09/2001) and 11M (11/03/2004).

In this study we will analyze negative emotions in advertisement and how the context in which an event takes place determines the type of information received, as the associated and acquired recalls in that moment. Furthermore, the context determines the event recovery regarding the lived experience. Such experience linked to the emotional mood experience during the event seems to determine the type of recall of the event. Therefore, each person revives, returns and recalls a past event with the same emotional mood experience in the past (Bower, 2002; Davies, 1988; Tulving, 1983; Clack & Teasdale, 1985; Larsen, 1988; Ellis *et al.*, 1984; Ellis *et al.*, 1990; Natale & Hantas, 1982; Singer & Salovey, 1988).

## 2. The use of negative emotions in advertisement

There are several studies relative to the development of the emotional process, which are the emotional effects in spots and research related to the effectiveness of positive or negative emotions in advertisement. Regarding to advertisements that utilizes negative emotions, the majority are related to institutional advertising or social whose messages are of preventive nature as drugs, tobacco, health, diseases or traffic accidents (Farrelly *et al.*, 2012; Lee *et al.*, 2011; Agrawal & Duhachek, 2010). In preventive health for giving up smoking exist several studies (Farrelly *et al.*, 2011) where is questioned if the use of negative emotions helps to break this habit. Some authors as Farrelly *et al.* (2012) and Lee *et al.* (2011) maintain that the most effective advertisements are those that exhibit a clear message with negative emotions facing the positive ones, being the attestation ones the most effective due to their reality. These authors consider as a key factor in the narrative of these advertisements, the construction of images by means of impressive photographs as a burned lung or blocked arterials as a radiography of the effects of the tobacco consumption in the human health. As a matter of fact, there are studies that consider that negative emotions in advertising generate anxiety on the receptors and can carry them to a negative attitude to the advertise product or service (Henthorne *et al.*, 1993; Hyman & Tansey, 1990; Geeta *et al.*, 2009; Agrawal *et al.*, 2007). Henthorne *et al.* (1993) sustain that fear in advertisement campaigns can devote high anxiety levels and question the target manipulation through this emotion as pointed out by Hyman and Tansey (1990) referring to the ethic responsibilities of these practices in advertisement. Furthermore, with more reservations, other authors persist in more research about the efficacy of negative emotions because there is not a final statement if this kind of advertisement produces negative attitude in the receptor (Agrawal & Duhachek, 2010). Other studies (MacInnis & Stayman, 1993) are centered in the adequate management of negative emotions in advertisement by means of an argument that explains the benefits of the negative emotions (Holman's, 1986) that provides a solution to the receptor.

The intensity of emotions and the relationship with the receptors regarding an advertisement are discussed in (Moore & Harris 1990; Shih-Chieh & Hung-Ming, 2007; Batra & Ray, 1986). These studies are interested in knowing how the mood of the people is related to the advertised commercials. In this line, Chingching (2006) discusses the implications between the emotion states in the emotional perception of commercials.

## 3. Negative emotions and dependent recall of an emotional mood

Negative emotions can be influenced by the emotional mood experience during a past event generating an emotional mood change when recalling the event experience independently of the commercial message. Following the theory of Bower (1982), Bower and Cohen (1982), Clarks (1985) and Teasdale and Fogarty (1979), affective states affect in our cognitive processes because we recall an event affected by the emotional state we had when the success take over. Memory and emotional mood are closely linked and the effect of both can derivate in an "effect of the recall depending on the emotional mood," the emotional mood during codification is associated to it and will be the same during recovery. Our semantic memory disposes of information in associative networks composed by multiple nodes and each of them represents an event and its given emotional significance and cognitive (Collins & Loftus, 1975; Collins & Quillian, 1969). Furthermore, emotions can influence over the memory through: content, codification and recovery.

For the present study, we have consider outstanding for their transcendence and impact, 11S (2001) in New York instigate by Al Qaeda causing 3.000 deaths approximately and more than 6.000 wounded and 11M (2004) in Madrid instigated by Jihadist terrorists with 191 deaths and 1.858 wounded terrorist attacks. Both of them still remain in the occidental culture memory due to their high impact. The selection of these events is the impact in the collective memory (Halbwachs, 1950; Jedlowski, 1997) due to the media coverage of mass media (Larsen,

1988) that generated a closeness perception. Therefore, our study analysis is therefore centered in both terrorist attacks (11S and 11M) and the perception ten years later of the survey subjects related to the advertisements spread during the following ten days of the terrorist events in the national press. Contents were impressive, their codifications included the more impressive media and the recuperation recalls to the respondents to the moment in which that information was saved and coded, independently to the initial emotional mood of the subjects when the interview was done.

#### **4. Emotional influence of sorrow advertisement**

In this study, we expect an emotional response from the spectator related to a tragic event, and the exposure of the advertisements that evokes the moment experience. The importance in advertisement of achieving emotional changes from positive to negative emotional moods in the target lies in preventive campaign planning's. Therefore, we propose the following objectives: the main objective of this study is to know if the emotional mood of the survey respondents' changes after watching the advertisements spread related to the 11S and 11M terrorist attacks. If so, a secondary objective is to detect if the emotional mood after the advertising contemplate is related to pain and sorrow. Another objective is to know if there is an advertisement of the exposed ones that turns on more significative emotional mood changes. The last objective we want to deal is if there is an emotional classification before and after the experiment is taken over the target. Our main propose is to know the participants perception in the presence of the selected commercials and a possible perception change after the commercial's exposure. To deal with these objectives, we suggest the following hypothesis and we will corroborate with the data obtained through a survey over four focus groups in Madrid (Spain) and one focus group in Vermont (USA) considering a wide range of ages and characteristics.

Hypothesis (H1): cognitive recall of memory related to a tragic event, as a terrorist attack, and the exposure to advertisements that invokes them generates a negative emotional change of mood in the survey respondents.

Hypothesis (H2): sorrow is the main emotional mood sensed in the exposed advertisements.

Hypothesis (H3): there are significative differences in the emotional mood of the respondent depending on the advertisement exposed.

Hypothesis (H4): there is an emotional classification before and after the experiment is taken.

#### **4.1. Method**

##### **4.1.1. Subjects and Experiment Design**

Subjects in focus groups I and II where young people selected randomly in Madrid (Spain) who agreed to participate to obtain a present at the end of the experiment composed by 32 young adults with an average age of 19 years and 31 young adults with an average age of 21 years. To diversify the sample, two more focus groups were considered selected randomly in Madrid (Spain) composed by 41 adults with an average age of 63 years (group III) and 40 adults with an average age of 62 years (group IV). In order to find similarities/differences between 11S and 11M terrorist attacks, a fifth focus group composed by 20 USA young adults selected randomly with an average age of 20 years was considered and was performed in Vermont (USA). The group selection was done to investigate the possible relation to emotional changes with the country, age, gender, generational or cultural differences. We had a total of 164 respondents, with an average age of 34.07 and standard deviation 20.45 with a 42% of males. Groups statistics were:

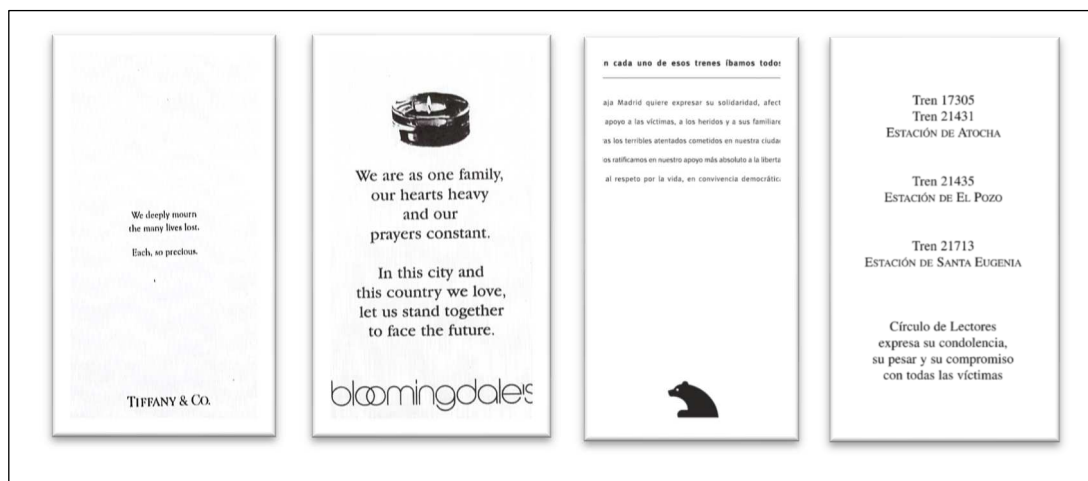
- Group I: total of 32 respondents, average age of 19.33 (standard deviation 0.9) and 25% of males.
- Group II: total of 41 respondents, average age of 63.32 (standard deviation 4.3) and 46% of males.
- Group III: total of 40 respondents, average age of 62 (standard deviation 3.88) and 47% of males.
- Group IV: total of 31 respondents, average age of 20.4 (standard deviation 3.93) and 40% of males.
- Group V: total of 20 respondents, average age of 20.23 (standard deviation 1.67) and 40% of males.

#### 4.1.2. Stimuli

To analyze the hypothesis previously proposed, we design the experiment in three stages:

1. Advertisement selection of the press commercials spread after the 11S and 11M terrorist attacks related to the attempts. In the USA and Spain, a cast was done over the press advertisement of general newspapers and a classification was done according to topics. In the case of the USA advertisements, the sample was selected from the advertisements spread on the days 11, 12 and 13 of September 2001 in *The New York Times*, *Wall Street*, *USA Today* and *The Washington Post* newspapers. In the case of the Spanish advertisements, the sample was selected from the advertisements spread on the days 11, 12, 13 and 14 of March 2004 in *El Mundo*, *ABC*, *El País*, *La Vanguardia* and *La Razón*, generalist newspapers. Latterly to these dates, there were not a significant number of advertisements spread on generalist newspapers. From the selected sample a random sample of ten commercials from each country where picked to construct the survey (Figure 1).

**Figure 1:** Commercial from 09/11S and 11M.



Source: Own elaboration from *The Washington Post*, *The New York Times*, *El País* and *El Mundo*.

2. Advertisements classification for both Spanish and USA press commercials related to the terrorist attacks. The following groups were considered for the advertising classification: mourning, sympathy, solidarity, commercial or mixed between commercial and mourning (Martínez-Pastor, 2010). These commercials have the distinctive feature that avoids color, company trademark and brand messages enriching their product characteristics and/or services. Advertisement creativity

becomes non relevant as is done in purpose in consideration to the terrorism victims (Martínez-Pastor & Montes Vozmediano, 2015; Martínez-Pastor, 2019).

3. Madrid (Spain) and Vermont (USA) survey. The survey was divided in three steps:
  - i. The first question to the respondents was related to their emotional mood at the beginning of the inquiry, where different positive, negative and neutral emotional moods could be ranked.
  - ii. The second step was the broadcast of ten advertisements considering their nationality (11S or 11M), showing first those advertisements related to their country in order to attain a higher emotional link and a higher concentration in the experiment, followed by the advertisements related to the other country (with the corresponding translation), where the respondents were asked to rank the different positive, negative and neutral emotional moods that each advertisement evoke.
  - iii. The third step was the inquiry of the emotional mood of the respondent at the end of the experiment.

The emotional mood rank proposed for each broadcasted advertisement was composed of semantic differentials where two opposed emotions, a positive and a negative, were included and the respondent must select 1 to 3 (1 the less, 3 the most) the emotion that the advertisement recall on his memory.

The semantic differentials considered where: sadness-cheerful, painful-pleasant, anguished-comforted, unhappy-happy, rage-calm, repulsive-acceptance, upset-pleased, scared-brave, without hope-hope, dislike-like (Wundt, 1896; Lang *et al.*, 1999). The categorization of the selected emotional moods was made according to the models proposed by Kleinginna and Kleinginna, 1981; Batra and Holbrook, 1990; Izard, 1977; Holbrook and Batra, 1987; and Lazarus, 1994. We use as starting point the primary emotions: surprise, repulse, cheerful, scared, rage, and sadness (Ekman, 1992, 2003) and related emotions as hope, pain, anguish, sympathy and comfort (Lazarus, 1994).

These categories have been taken from Matthews *et al.* (1990), who develop a list with adjectives to measure the emotional mood of the respondent's in a similar way to our proposal. We have classified the emotions in positives and negatives according to Hamm, Shupp and Weike (2003) that proposed two behavior regulation axes around approximation (positive emotions) and avoidance (negative emotions), and the hedonic asymmetry rule of Frijda (2001). Respect to the basic emotions triggers we have considered the work and the conclusions of authors that have worked over emotional changes. Teigen and Keren (2002) states that surprise is an undetermined emotion, that can be classified as positive, negative or neutral. Rozin and Fallon (1987) sustains that disgusting is a repulsion to something or someone. Scared is a threat to avoid (Epstein, 1972). Happiness can derivate in humor understand as hilarious (Ruch, 1993) or a happiness state similar to pleasure (Kahneman *et al.*, 1999). Sadness is caused by the loss of a goal that can derivate in compassion, guilt, anxiety and melancholy (Stein *et al.*, 1993; Domínguez- Sánchez, 2010). Anger can cause rage, aggressiveness and hostility (Berkowitz, 1993; Conner *et al.*, 1983; Domínguez-Sánchez, 2010). Finally, following Mower (1960) pain is presented in negative emotions that sustains that pain and pleasure are inherent to individuals as basic emotions.

The aim of presenting to each participant first the commercials related to their country followed the commercials related to the other country was to identify the possible country affiliation relevance.

## **5. Methodology**

The Chi squared homogeneity test allows to corroborate if several samples of a qualitative variable derive from the same population. Data must be measured by means of categories that allow the construction of a contingency table. This table classifies the observed data in k

disjoint sets ( $A_1, \dots, A_k$ ) that corresponds to each possible value of the qualitative variable measured (for instance, emotion can be classified as happiness, surprise, sorrow, disgust). The homogeneity hypothesis of the samples can be interpreted as the probability of each category, although unknown, remains unalterable on each sample. This must be verified for each possible category of the qualitative variable in study. A statistic based on expected and observed frequencies is construct that under the null hypothesis of homogeneity must converge to a Chi squared distribution. Smaller values of the constructed statistic indicate more consistency between the observed and expected data. To analyze if there are significant emotional changes due to the exposure of advertisement related to terrorist attacks, we have compared the responses related to the emotional mood of the respondent's before and after the survey by means of the Chi squared homogeneity test with a significance level  $\alpha=0.05$ .

To analyze if there are significant differences between the emotions evoked by the advertisements exposure related to terrorist attacks, we have compared the ranking responses related to the emotions evoked by each advertisement by means of the Chi squared homogeneity test with a significance level  $\alpha=0.05$ .

Multiple correspondence analysis is a compositional method to perceptual mapping that is based on categories of a contingency table. In our study, involves the participants and emotional mood categories (cheerful, sad, melancholic, depressed, furious, happy, anxious, quiet, surprised, upset, stressed and normal). The aim of the analysis is to construct a perceptual map of the emotional states before and after the advertisement's exposure. To determine the number of dimensions we have consider the associated Cronbach Alpha (Cronbach, 1951). Cronbach's alpha is a measure valued between 0 and 1 of internal consistency, how closely related a set of items are as a group. It is considered to be a measure of scale reliability and can be written as a function of the number of test items and the average inter-correlation among the items. A reliability coefficient of .70 or higher is considered "acceptable" in most social science research situations. In analogous way, to classify the emotional states after the survey, we have analyze the associated Burt table by means of multiple correspondence analysis taken into consideration the answers related to the emotional mood of the respondent's after the experiment was performed. A Burt table is a symmetric matrix used to help visualize and analyze relationships between categorical variables. The diagonal matrices contain the marginal frequencies of the variables considered for analysis. Out of the main diagonal, the Burt table contains the cross frequencies between 2x2 variables combinations. The table serves as the foundation for multiple correspondence analyses. To determine the number of dimensions we have consider the associated Cronbach Alpha (Cronbach, 1951), conducted by means of IBM SPSS Statistics19.

## **6. Results**

### **HYPOTHESIS 1:**

In order to corroborate if there is an emotional change of mood before and after the exposure of the terrorist attack advertisements and the main emotions found between the survey respondents, a Chi squared test was done in groups I, II and III. Unfortunately, respondents in groups IV and V were unable to answer to their emotional mood after the exposure of the terrorist attack advertisements due to technical reasons. In the sequel, we divide the results by groups and by means of the ANOVA test we analyze the possible differences between groups.

#### **1. Results group I:**

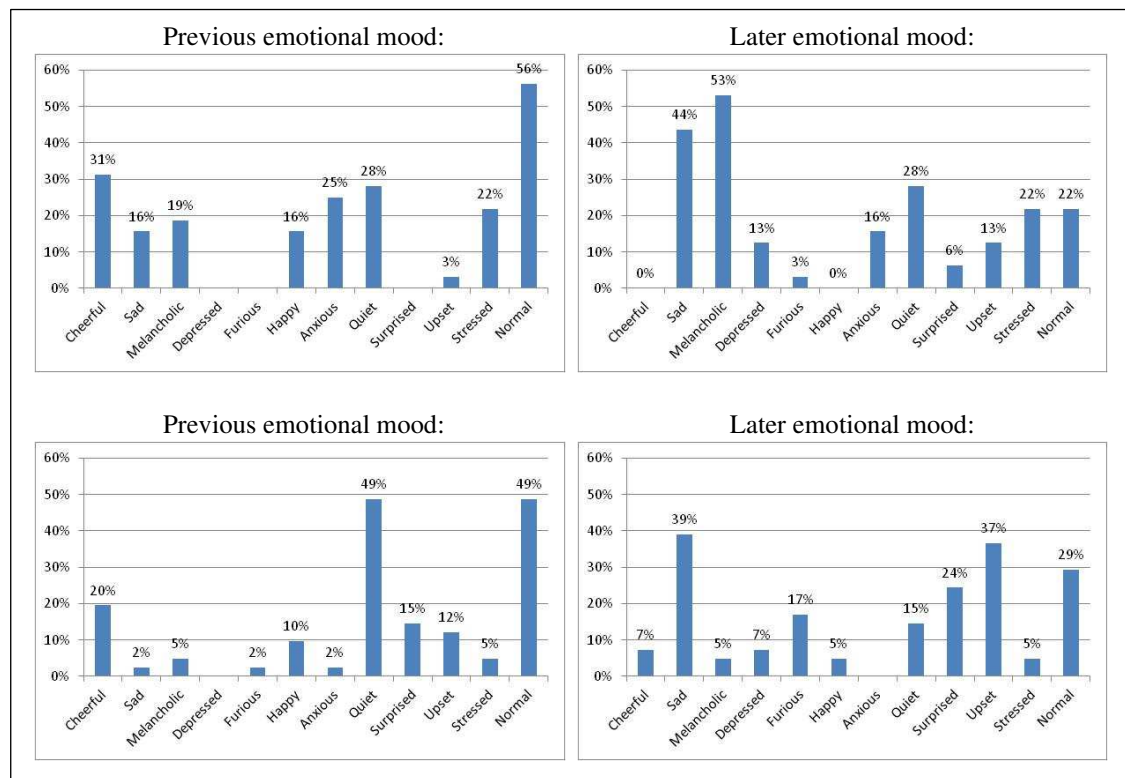
The emotional change of mood before and after the exposure of the terrorist attack advertisements was found significative at level  $\alpha=0.05$  (Chi-squared test  $p$ -value = 5.615e-05). A considerable increase of the negative emotional mood related to soreness as are sadness

(44%) and melancholic (53%) and a decrease in positive emotional moods as related to cheerful (0%), happiness (0%) and normal (from 56% to 22%) (Figure 2).

2. Results group II:

The emotional change of mood before and after the exposure of the terrorist attack advertisements was found significant at level  $\alpha=0.05$  (Chi-squared test  $p\text{-value} = 3.725e-05$ ). We can observe in Figure 2, a considerable increase of the negative emotional mood related to soreness as are sadness (39%), depressed (7%), furious (17%) and upset (37%) and a decrease in positive emotional moods as related to happiness (from 10% to 5%), quiet (from 49% to 15%) and normal (from 49% to 29%) (Figure 2).

**Figure 2:** Frequency respondent's distribution in group I and II emotional mood change before and after the exposure of the terrorist attack advertisements.



Source: Own elaboration.

3. Results group III:

There is a single increase in sadness and anxious emotional mood before and after the exposure of the terrorist attack advertisements, but is not a significant change as pointed by the Chi Squared test (Chi-squared test  $p\text{-value} = 0.2432$ ).

HYPOTHESIS 2:

In order to corroborate if sorrow is the main emotional mood sensed in the exposed advertisements, we analyze the possible differences between groups. Later, responses relative to the emotional ranks for each broadcasted advertising where compared by means of the Chi squared test. Through an ANOVA analysis it was found that the group influences in the changes in emotions, presenting significant differences between the first group and the remaining ones. In the sequel, we divide the results by groups I and groups II, III, IV and V.

1. Results group I:

For the pair sad-cheerful most of the answers are assembled around sadness, for the pair painful-pleasant most of the answers are assembled around pain, for the pair anguished-comfort most of the answers are assembled around anguish, for the pair unhappy-happy most of the answers are assembled around happiness, for the pair repulsive-acceptance most of the answers are assembled around repulsion, for the pair scared-brave most of the answers are assembled around bravery and for the pair without hope-hope most of the answers are assembled around hopeless.

2. Results group II, III, IV and V:

For the pair sad-cheerful most of the answers are assembled around sadness, for the pair rage-calm most of the answers are assembled around rage, for the pair repulsive-acceptance most of the answers are assembled around high acceptance and high repulsion and for the pair without like-dislike most of the answers are assembled around likeness. For the remaining categories, answers are concentrated around indifference.

HYPOTHESIS 3:

The results in the surveys of the five groups show the nonexistence of significative differences between categories for each of the advertisements. That is, the advertisement type doesn't influence in the emotional mood of the respondents, neither the order in which advertisements were presented to participants. However, there are significative differences between the categories for each advertisement.

HYPOTHESIS 4:

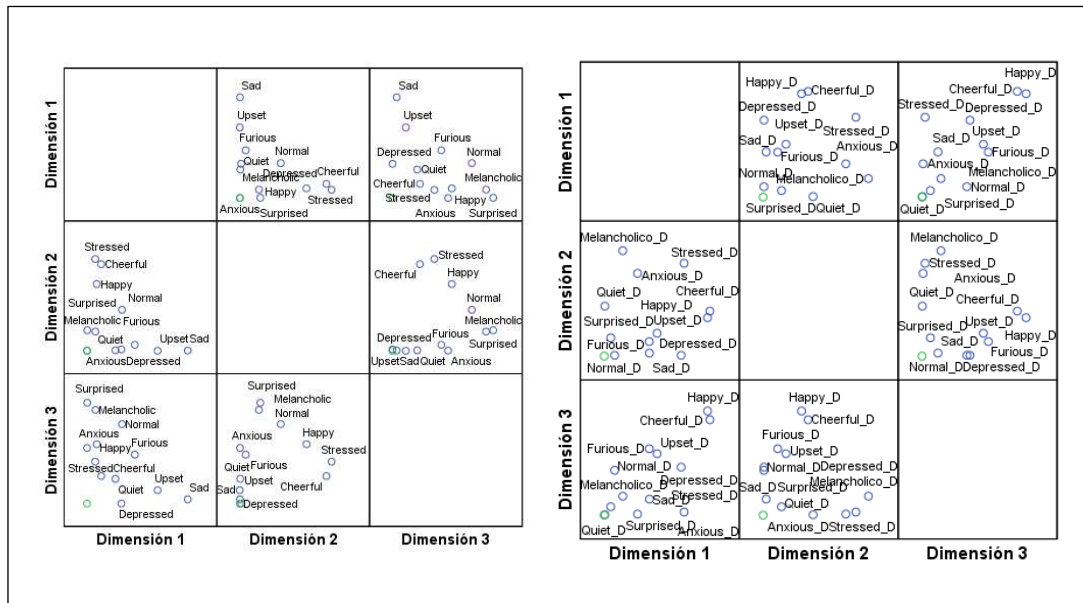
In order to corroborate the existence of an emotional classification before and after the experiment is taken, a multiple correspondence analysis was derived from the survey respondents. As it was found that the group influences in the changes in emotions, presenting significative differences between the first group and the remaining ones, in the sequel, we divide the results considering all the groups together and by groups I and groups II, III. Unfortunately, respondents in groups IV and V were unable to answer to their emotional mood after the exposure of the terrorist attack advertisements due to technical reasons.

1. Emotion classification before and after the survey:

In this case, the emotion differentiation in the different dimensions is not obvious after the survey, due to the heterogeneity of the groups in study. We can find an emotion aggregation in three categories before the survey: a group associated to sadness, depression, anger, quiet and disgust; another group associated to happiness, cheerful, and stressed; and a third group associated to surprise, anxiety and melancholy. After the survey performance, emotions are aggregated in three categories again: a group associated to sadness, depression, and stressed mixed with happiness and cheerful; another group associated to melancholy, anxiety, quiet and stressed; and a third group associated to subjects who experience an emotional mood associated to happiness, cheerful, anger, disgust and normal. Stress is associated before the survey to a positive emotional mood, whereas after the survey is linked to a negative mood associated to sadness, depression, disgust, melancholy, anxiety and quiet (Figure 3).



**Figure 3:** Emotion classification before and after the survey performance.



Source: Own elaboration.

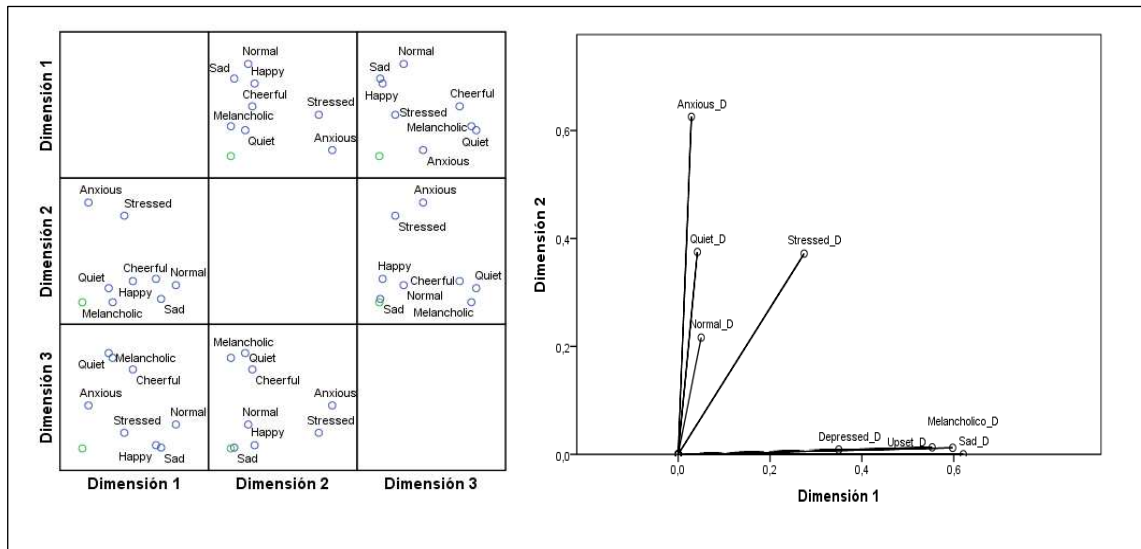
Cronbach Alpha values, Eigenvalue and variance percentage contribution have been considered to determine the dimension of the solution of the correspondence analysis of the emotions previous to the experiment. However, unlike with correspondence analysis (performed on only 2 variables), the percentage of inertia are here pessimistic estimates of the quality of the representation. The method based on the adjusted inertia gives us 40.476% with the first three axes, considering the three higher eigenvalues.

After the experiment and with the same criteria used in the previous correspondence analysis, the method based on the adjusted inertia gives us 45.56% with the first three axes. States of depression and disgust substituting happiness and cheerful after the survey performance.

We can find an emotion aggregation in three categories before the survey: a group associated to sadness, happiness and normal; a group associated to stress and anxiety; and a third group associated to happiness and melancholy. Emotions associated to surprise, disgust and fury are not presented. After the survey, emotions are aggregated in two categories: a group associated to sadness, depression, melancholy and disgust; and a group associated to anxiety, quiet, stress and normal. Emotions associated to happiness, fury, cheerful and surprise are not presented.

When considering Group I, the method based on the adjusted inertia gives us 60.815% with the first three axes previous to the experiment and 31.452% with the first axes after the experiment. When consider solely the answers from groups II and III, we can observe a new emotional category of depression between the respondents after the questionnaire realization. Stress is associated before the questionnaire realization to positive emotional states of happiness and normality, whereas is associated to a negative emotional state of depression, disgust and fury after the questionnaire realization (Figure 4).

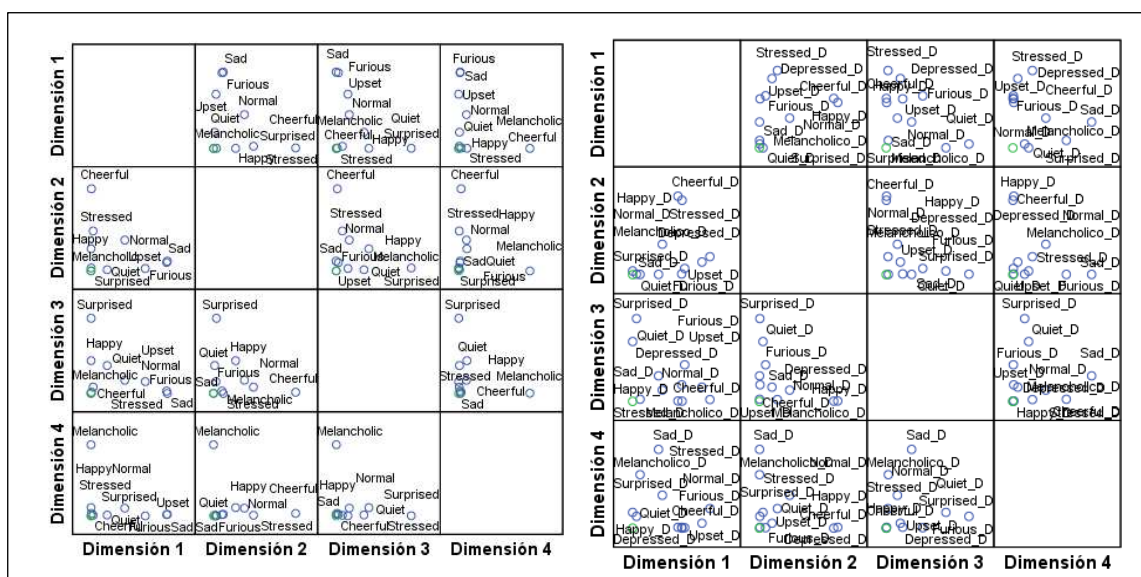
**Figure 4:** Emotion classification before and after the survey performance for Group I.



Source: Own elaboration.

When considering Groups II and III, the method based on the adjusted inertia gives us 62.496% with the first four axes previous to the experiment and 61.229% with the first four axes. We can find an emotion aggregation in four categories before the survey: a group associated to sadness, normality, fury and disgust, another group associated to cheerful, stress and normality, a third group associated to happiness, quiet and surprise and a fourth group associated to melancholy. Emotions associated to anxiety and depression were absent. After the survey, emotions are aggregated in four new groups: a group associated to stress, fury and disgust, another group associated to cheerful, happiness and normality, a third group associated to quiet, fury and surprise and a fourth group associated to melancholy and sadness. Emotions associated to anxiety were absent (Figure 5).

**Figure 5:** Emotion classification before and after the survey performance for Groups II and III.



Source: Own elaboration.

## 2. Emotion classification before and after the survey by groups:

In all the considered groups we can appreciate an association between stress and anxiety with happiness, as an isolated category with respondents that experience an emotional state associated to melancholy previous to the questionnaire realization. We can classify as positive the majority of the emotions experience by the respondents at the beginning of the experiment, highlighting the absence of fury, upset and anxiety. Nevertheless, subsequent to the experiment, we can observe how group I is visibly affected, preceding negative emotions associated to pain, excluding categories associated to happiness and cheerful. Despite a minor category (compose by less than the 5% of the participants) associated to happiness and cheerful in Groups II and III, we can observe the same results for the remaining groups.

## 7. Discussion

Hypothesis 1 can be confirmed because there is a significative emotional change in the respondents after the advertisement visualization, as much as in group I as in group II. We can observe in both groups an increase of sadness in a 44% and 34% respectively, an increase of melancholy in 53% in the first group and an increase of the 7% in fury, 17% in fury and 37% in upset in the second group. As pointed out by Bower (1982), the emotional state is dependent of the mood and the cognitive processes we experience when the event took place. We must keep in mind that when terrorist attacks took place, the respondents of group I had an age range of 8 and 12 years and the recall of the event may not be as intense as for an adult, so as to remember his emotional mood when informed of the attempts. We expect to occur the same for Groups IV and V, but we did not test this emotional change. Besides, in both USA and Spanish focus groups the visualizations of advertisements spread in Spain and USA of their respective terrorist attacks were experimented in such a way that the subjects only knew their context. Is possible, that the recall of the attempt of their country could cause “the effect of the recall dependent of the emotional mood,” pointed out by Bower (1992), due to the proximity of the actors that provoke both terrorist attacks. This indicates that the change in the emotional mood can be devoted to a combination of the recall in the memory of the success and the exposure of pieces whose message evokes the attempts. In Group III there is no significative emotional mood change after the advertisement exposure. This can be due to the existence of uncontrolled variables generated by the fact that some respondents wake up during the experiment because the questionnaire matter resulted annoyed for them and they didn't want to participate. This caused a huge commotion during the experiment performance and could alter the experiments results. Regarding the second hypothesis, we can stress in all the groups, that the predominant emotions evoked by the spread advertisements are negative, specially: sadness, pain, anguished, unhappiness, upset and hope. Following Hamm *et al.* (2003) and Frijda (2001), the emotions pointed out by the respondents were concentrated in negative and avoidance emotions against positive ones. Sadness can be found in all the groups, in coherence with “the effect of the recall depending on the emotional mood” or “memory dependent of the emotional mood” pointed out by Bower (1992), Bower and Cohen (1982), Clarks (1985) and Teasdale and Fogarty (1979). The recall of the terrorist attacks through the advertisement messages evokes sadness in memory. The consequences of the advertisement spread are consistent with the hypothesis that sadness can cause rage, melancholy and fury as pointed out by Stein *et al.* (1993) and Domínguez-Sánchez (2010). The most detachable is that Group I inclines more to bravery and fear whereas in the remaining groups, emotions were concentrated around repulsion and rage. This can be explained because in numerous USA advertisements, the message contained the term “brave” and is a future research line to be explored, as the implications of the use of the terms related to hope in the message. This can be explained to the collective cultural memory (Halbwachs, 1950; Jedlowski, 1997) and the media coverage of the mass media (Larsen, 1988). It is a distinctive feature of the USA culture the linkage of several adjectives such as bravery to

patriotism that is absent in the Spanish culture. This could be the answer to the dependence of category selection according to nationalities. There is a weird data respect to the appearance of a non-significant dependency of the event context recall in group III. In this case, participants were in a low emotional mood and therefore non-significant emotional changes can be detected after the commercial exposure making bias in the results (Eich, 1995b). Concerning Hypothesis 3, the results in the surveys of the five groups show the nonexistence of significant differences between categories for each of the advertisements. This may be caused because all the selected advertisements had a similar format in both countries: advertisement modules, with Times New Roman texts, black and white, without images where the company logo is placed in a second position. The creativity of the selected commercial sample for the exposure to participants was irrelevant respect to the terrorism victims and relatives consideration messages (Martínez-Pastor & Montes Vozmediano, 2015). Finally, we can observe a change in the classification of the emotions before and after the survey, as venture in Hypothesis 4. The selected subjects experimented a mixture of emotions without a clear distinction between positive and negative emotion before the experiment was taken. After the test, in all the groups a remarkable change in the emotions of the respondents was experienced, classifying them in emotions associated to pain. Therefore, this type of advertisement is clearly sense as sorrow.

## 8. Conclusion

There is an emotional change more linked to the recall of a negative event than to the advertisement creativity. There are significant differences in the perception of the advertisements linked to the age, being more noticeable between young people than older ones. Negative emotions take precedence over positive ones being the most significant: sadness, pain, anguish, unhappiness, upset, bravery and hope. Furthermore, the emotions experimented during the advertisements spread provoke in the respondents a final emotional state related to rage, melancholy and fury in both Spanish and USA groups. We can subtract the existence of a new advertisement modality associated to condolence and sorrow, of great interest for future research of the influence in the target. As a future research, we consider the study of the advertisement impact associated to natural catastrophes, massive terrorist attacks or influential deceased.

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## References

- Agrawal, N. & Duhachek, A. (2010). Emotional Compatibility and the Effectiveness of Antidrinkage Messages: A Defensive Processing Perspective on Shame and Guilt. *Journal of Marketing Research*, 47(2), 263-273. <https://www.doi.org/10.1509/jmkr.47.2.263>
- Agrawal, N., Menon, G. & Aaker, J. (2007). Getting Emotional About Health. *Journal of Marketing Research*, 44, 100-113. <https://www.doi.org/10.1509/jmkr.44.1.100>
- Batra, R. & Ray, M. (1986). Affective Responses Mediating Acceptance of Advertising. *Journal of Consumer Research*, 13, 234-249. <https://www.doi.org/10.1086/209063>
- Batra, R. & Holbrook, M. (1990). Developing a typology of affective responses to advertising. *Psychology & Marketing*, 7, 11-25. <https://www.doi.org/10.1002/mar.4220070103>
- Berkowitz, L. (1993). Pain and aggression: some findings and implications. *Motivation and Emotion*, 17, 227-299.
- Bower, G. (1982). Mood and memory. *American Psychologist*, 36, 129-148. <https://www.doi.org/10.1037//0003-066X.36.2.129>

- Bower, G. & Cohen, P. (1982). Emotional influences on memory and thinking: Data and theory. In S. Fiske & M. Clark (Eds.), *Affect and cognition* (pp. 291-331). Hillsdale NJ: Lawrence Erlbaum.
- Bower, G. (2002). *Neuropsychology of Emotion*. Oxford: University Press.
- Clark, D. & Teasdale, J. (1985). Constraints on the effects of mood on memory. *Journal of Personality and Social Psychology*, 48(6), 1595-1608. <https://www.doi.org/10.1037/0022-3514.48.6.1595>
- Chingching, C. (2006). Beating the News Blues: Mood Repair Through Exposure to Advertising. *Journal of Communication*, 56(1), 198-217. <https://www.doi.org/10.1111/j.1460-2466.2006.00010.x>
- Collins, A. & Loftus, E. (1975). A spreading activation theory of semantic processing. *Psychological Review*, 82, 407-247. <https://www.doi.org/10.1037/0033-295X.82.6.407>
- Collins, A. & Quillian, R. (1969). Retrieval time from semantic memory. *Journal of Verbal Learning and Verbal Behavior*, 8, 240-247. [https://www.doi.org/10.1016/S0022-5371\(69\)80069-1](https://www.doi.org/10.1016/S0022-5371(69)80069-1)
- Conner, R., Constantino, A. & Scheuch, G. (1983). Hormonal influence on shock-induced fighting. In B. Sverre (Ed.), *Hormones and aggressive behavior* (pp. 119-144). New York: Plenum Press.
- Cronbach, L. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Davies, G. (1988). Faces and places: Laboratory research on context and face recognition. In G. M. Davies & D. M. Thomson (Eds.), *Memory in context: Context in memory* (pp. 35-53). New York: Wiley.
- Eich, E. (1995). Mood as a mediator. Of place dependent of memory. *Journal of Experimental Psychology*, 124, 293-308. <https://www.doi.org/10.1037/0096-3445.124.3.293>
- Ekman, P. (1992). An argument for Basic emotions. *Cognition and emotion*, 6, 169-200. <https://www.doi.org/10.1080/02699939208411068>
- Ekman, P. (2003). *Emotions Revealed: Recognizing Faces and Feelings to Improve Communication and Emotional Life*. New York: Times Books.
- Elis, H., Thomas, R. & Rodríguez, I. (1984). Emotional mood state and memory: Elaborative encoding, semantic processing, and cognitive effort. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 10, 470-482.
- Ellis, H., Seibert, P. & Herbert, B. (1990). Mood state effects on thought listing. *Bulletin of the Psychonomic Society*, 28, 147-150.
- Epstein, S. (1972). The nature of anxiety with emphasis upon its relationship to expectancy. In C. Spielberger (Ed.), *Anxiety: current trends in theory and research 2* (pp. 291-337). New York: Academic Press.
- Farrelly, M., Davis K., Nonnemaker, J., Kamyab, K. & Jackson, Ch. (2011). Promotion calls to a quitline: quantifying the influence of message theme, strong negative emotions and graphic images in television advertisement. *Tobacco Control*, 20(4), 279-284. <https://www.doi.org/10.1136/tc.2010.042234>
- Farrelly, M., Davis, K., Nonnemaker, J., Kamyab, K. & Jackson, Ch. (2012). Promotion of Smoking Cessation with Emotional and/or Graphic Antismoking Advertising. *American Journal of Preventive Medicine*, 43(5), 475-482. <https://www.doi.org/10.1016/j.amepre.2012.07.023>
- Frijda, N. (2001). The law of emotion. In W. Parrot (Ed.), *Emotional in Social Psychology: essential readings* (pp. 185-197). Philadelphia: Psychology Press.
- Geeta, M., Kyung, E. & Agrawal, N. (2009). Biases in Social Comparison: Optimism or Pessimism? *Organizational Behavior and Human Decision Processes*, 108(1), 39-52. <https://www.doi.org/10.1016/j.obhdp.2008.05.001>

- Gainotti, G. (2020). What Are Emotions. In *Emotions and the Right Side of the Brain* (pp. 3-11). Rome: Springer.
- Halbwachs, M. (1950). *La mémoire collective*. Paris: Presses Universitaires de France.
- Hamm, A., Shupp, H. & Weike, A. (2003). Motivational organization of emotions: autonomic Changes, cortical, responses, and reflex modulation. In R. Davidson, K. Sherer & H. Goldsmith (Coords.), *Handbook of affective sciences* (pp. 187-211). Oxford: Oxford University Press.
- Henthorne, T., Latour, M. & Natarajan, R. (1993). Fear Appeals in Print Advertising: An Analysis of Arousal & Ad Response. *Journal of Advertising*, 22(2), 59-68. <https://www.doi.org/10.1080/00913367.1993.10673404>
- Holbrook, M. & Batra, R. (1987). Assessing the Role of Emotions as Mediators of Consumer Responses to Advertising. *Journal of Consumer Research*, 14, 404-420. <https://www.doi.org/10.1086/209123>
- Hyman, M. & Tansey, R. (1990). The Ethics of Psychoactive. *Journal of Business Ethics*, 9, 105-114. <https://www.doi.org/10.1007/BF00382660>
- Izard, C. (1977). *Human Emotions*. New York: Plenum.
- Jedlowski, P. (1997). Collective memories in Proceedings of the EAESP Small Group Meeting. In *Collective memory: Theoretical, Methodological, and Practical Issues. Polignano a Mare May* (pp. 14-17). Bari: Gius Laterza.
- Kahneman, D., Diener, E. & Schwarz, N. (1999). *The foundations of hedonic Psychology*. New York: Russell Sage Found.
- Kleinginna, P. & Kleinginna, A. (1981). A categorized list of emotion definitions, with suggestions for a consensual definition. *Motivation and emotion*, 5(4), 345-379. <https://www.doi.org/10.1007/BF00992553>
- Larsen, S. (1988). Remembering without experiencing: Memory for reported events. In U. Neisser & E. Winograd (Eds.), *Remembering reconsidered. Ecological and traditional approaches to the study of memory* (pp. 326-355). Cambridge: Cambridge University Press.
- Lazarus, R. (1994). Universal antecedents of the emotions. In P. Ekman & R. Davidson (Eds.), *The Nature of emotion: Fundamental questions* (pp. 146-149). Oxford: Oxford University.
- Lee, S., Cappella, J., Lerman, C. & Strasser, A. (2011). Smoking Cues, Argument Strength, and Perceived Effectiveness of Antismoking PSAs'. *Nicotine and Tobacco Research*, 13(4), 282-290. <https://www.doi.org/10.1093/ntr/ntq255>
- MacInnis, D. J. & Stayman, D. M. (1993). Focal and emotional integration: Constructs, measures, and preliminary evidence. *Journal of Advertising*, 22(4), 51-66. <https://www.doi.org/10.1080/00913367.1993.10673418>
- Martínez-Pastor, E. (2019). *Publicidad y dolor. La representación del dolor en la publicidad*. Pamplona: EUNSA.
- Martínez-Pastor, E. (2010). La publicidad de duelo como agente público de protesta social: análisis del atentado del 11M en Madrid en 2004 [Advertising mourning as a public agent of social protest: 11M analysis bombing in Madrid in 2004]. *Revista Espacios Públicos*, 28, 143-161.
- Martínez-Pastor, E. & Montes Vozmediano, M. (2015). Pain in advertising: an analysis of the content and design of the advertisements in press after 11-M terrorist attacks. *Communication & Society*, 28(1), 115-127. <https://www.doi.org/10.15581/003.28.1.115-126>
- Moore, D. & Harris, W. (1996). Affect Intensity and the Consumer's Attitude Howard High Impact Emotional Advertising Appeals. *Journal of Advertising*, 25(2), 37-50. <https://www.doi.org/10.1080/00913367.1996.10673498>
- Mower, O. (1960). *Learning theory and behavioral*. New York: Wiley.
- Natale, M. & Hantas, M. (1982). Effect of temporary mood states on selective memory about the self. *Journal of Personality and Social Psychology*, 42, 927-934. <https://www.doi.org/10.1037/0022-3514.42.5.927>

- Rozin, P. & Fallon, A. (1987). A perspective on disgust. *Psychological Review*, 94, 23-41. <https://www.doi.org/10.1037/0033-295X.94.1.23>
- Ruch, W. (1993). Exhilaration and humor. In M. Lewis & J. Haviland (Eds.), *Handbook of emotion* (pp. 605-616). New York: Guilford Press.
- Shih-Chieh, Ch. & Hung-Ming, L. (2007). The Effect of Induced Positive and Negative Emotion and Openness-to-Feeling in Student's Consumer Decision Making. *Journal of Business and Psychology*, 22(1), 65-78. <https://www.doi.org/10.1007/s10869-007-9049-6>
- Singer, J. & Salovey, P. (1988). Mood and memory: Evaluating the network theory of affect. *Clinical Psychology Review*, 8, 211-251. [https://www.doi.org/10.1016/0272-7358\(88\)90060-8](https://www.doi.org/10.1016/0272-7358(88)90060-8)
- Sorinas, J., Ferrández, J. M. & Fernández, E. (2020). Brain and Body Emotional Responses: Multimodal Approximation for Valence Classification. *Sensors*, 20(1), 313. <https://www.doi.org/10.3390/s20010313>
- Stein, N., Trabasso, T. & Liwag, M. (1993). The representation and organization of emotional experience: unfolding the emotion episode. In M. Lewis & J. Haviland (Eds.), *Handbook of emotions* (pp. 279-300). New York: Guilford Press.
- Teigen, K. & Keren, G. (2002). When are successes more surprising than failures? *Cognition and emotion*, 16, 245-268. <https://www.doi.org/10.1080/02699930143000275>
- Teasdale, J. & Fogarty, S. (1979). Differential effects of induced mood on retrieval of pleasant and unpleasant events from episodic memory. *Journal of Abnormal Psychology*, 88(3), 248-257. <https://www.doi.org/10.1037/0021-843X.88.3.248>
- Tulving, E. (1993). *Elements of episodic memory*. Oxford: Clarendon Press.