

# **“Psychosocial effect of Perceived Emotional Synchrony in Collective Gatherings”**

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Milan ECP July 2015

## Religious ritual and positive psychosocial outcomes: wellbeing and collective identity

- A Longitudinal study comparing participants from a North Indian Hindu pilgrimage event and control group before and after collective gathering
- show that pilgrims increase well-being (Tewari et al, 2012)
- and reinforces social identity-enhanced social identification as a Hindu and increased frequency of prayer rituals- one month after (Kahn et al (2015))

# Secular ritual and positive outcome: social cohesion

- A longitudinal study found that participation in a public honor ceremony to the victims of a collective trauma (the killing of teachers and students by a shooter in the University)
- significantly predicts solidarity at 5, 9 and 13 months after the tragedy
- - controlling other predictors (Hawdon & Ryan, 2011).

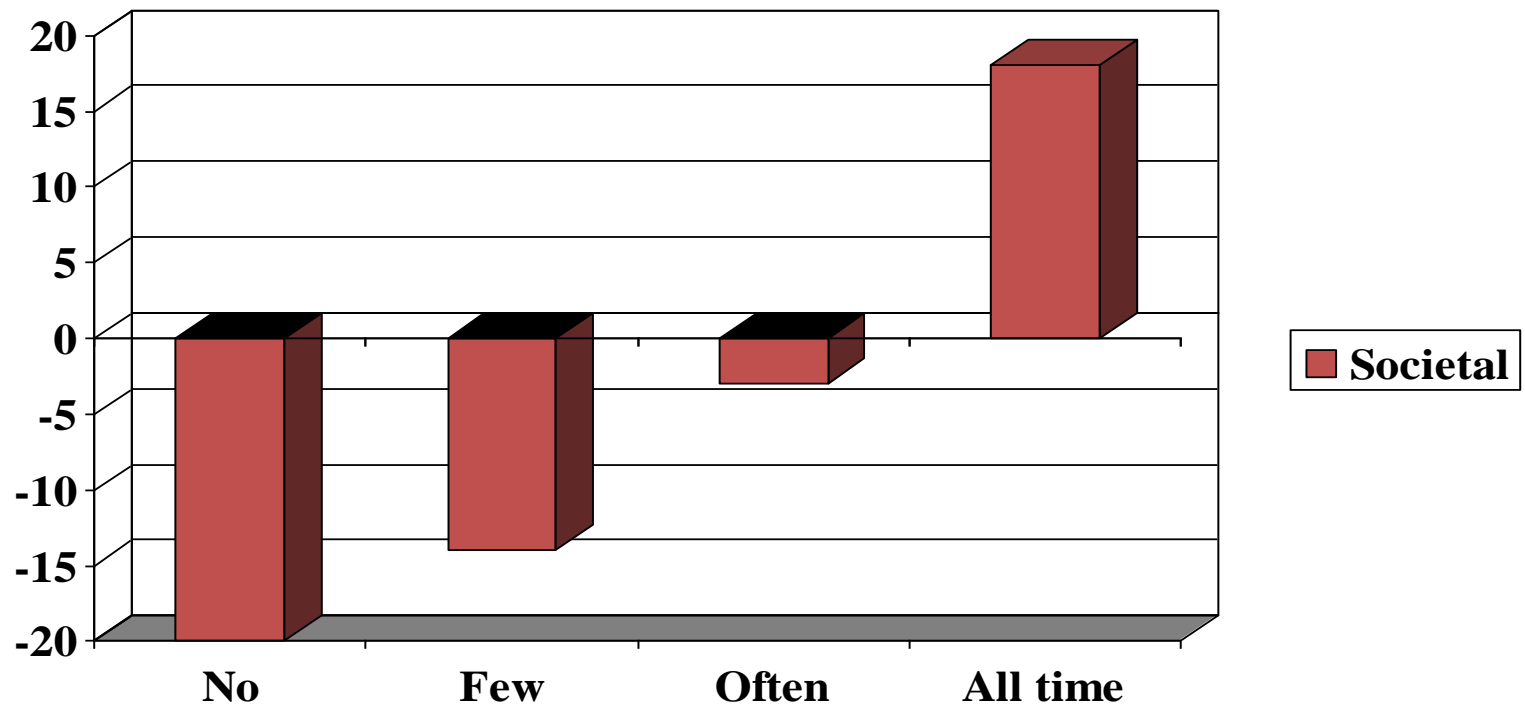
# Ritual effects on trust, values and cooperation

- Fischer et al, (2013) study show
- that a ritual activity produced higher levels of perceived trust and emotional connectedness,
- greater sense of shared sacred values among participants
- and reinforces pro-social behavior (i.e. more generous contributions to a public fund).

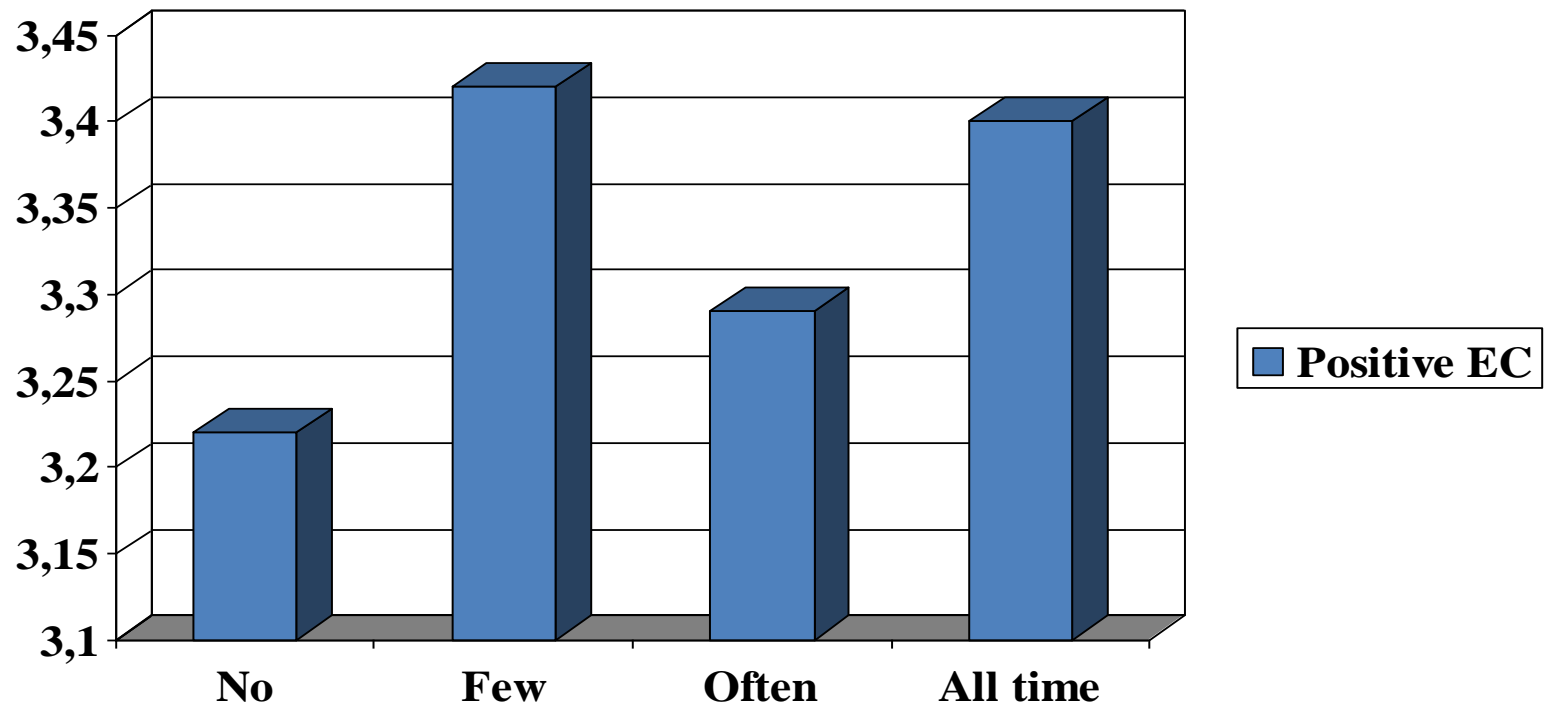
# Longitudinal study: effects of participation in demonstrations on social beliefs and collective emotions

- Survey on what Spaniards feel (emotional climate) and what they personally did one week after Madrid's 2004 bombing – how often they participate in demonstrations
- Three weeks after March-Eleven participants answer a revised version of Tedeschi et al Post traumatic growth or benefits of traumatic events (learning what is important in life, personal growth, valuing social support),
- social support (Vaux) and positive affect (PANAS)
- Two months after report emotional climate (solidarity, trust, social sharing, hope) (Paez et al, 2007; Rime et al, 2011)

Higher Level of Participation one week after predicts higher Trauma Societal Benefits (social cohesion, human right violation sensibility) three weeks after (factor scores) – similar profile for Social Support & Positive affect



Higher Level of participation on demonstrations (1=No; 2=Some times;3=Often;4=All the time) predicts higher Positive Emotional Climate (Two months post) using one week baseline as co variable (marginal means)

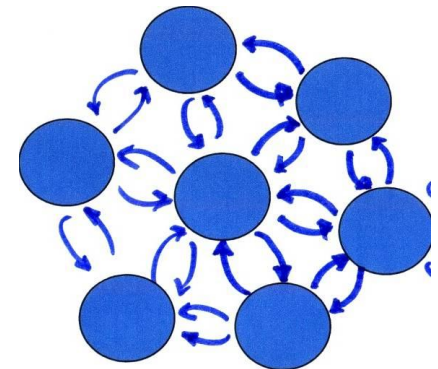


# What explain positive effects of collective gatherings...

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religious ceremonies, social celebrations, sport, music, demonstrations etc.

- similar goals
- common attentional focus
- synchronous movements, gestures
- collective music, songs
- similar emotions
- mutual emotional stimulation
- Collective effervescence=emotional communion or synchrony





# Explanatory process

- 1.- Behavioural synchrony: Increases prosocial behavior
- **Social identification**
- In absence of intense affect (marching....)
- Devoid of symbolic value (USA citizens singing Canadian anthem) Wi
- 2.- Shared optimal experiences
- Rituals affords potential experience of collective flow
- Flow related to well-being
- **Collective flow** higher positive affect than individual (Walker 2012)

# Collective gatherings, flow and emotional communion

- Csikszentmihalyi (1990, p. 432)
  - Collective gathering, rituals or demonstrations = affordances that a society offers its members in order to allow them to meet optimal experiences under socially desirable forms.
- Csikszentmihalyi (1990, p. 21)
  - optimal experiences = quite close to the collective effervescence that occur during rituals or collective emotional gathering situations
  - explicit reference to Durkheim (1993, p. 41)

# “Collective gatherings and process”

Collective effervescence.

The experience of intense shared emotions, reflected in the perception of emotional synchrony;

it is expected to be an important process, independently of others like shared flow or social identification

.We predict that perceived emotional synchrony should show and influence in positive outcomes, taking into account and controlling shared flow or collective optimal experience.

- Scale of PESC share intense emotions; we feel intense shared emotions 18-7 items

# Emile Durkheim (1912) model of religious rituals

## ⇒ emotional synchrony

- reciprocal stimulation of emotions
- emotional communion, feeling of unity

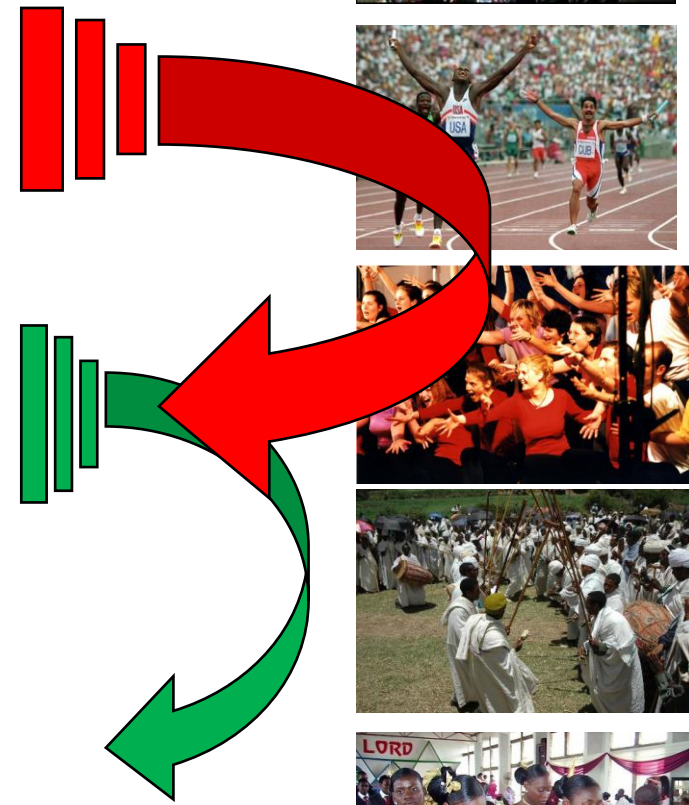
## ⇒ social effects: group belonging

- enhance social integration
- strengthen collective beliefs

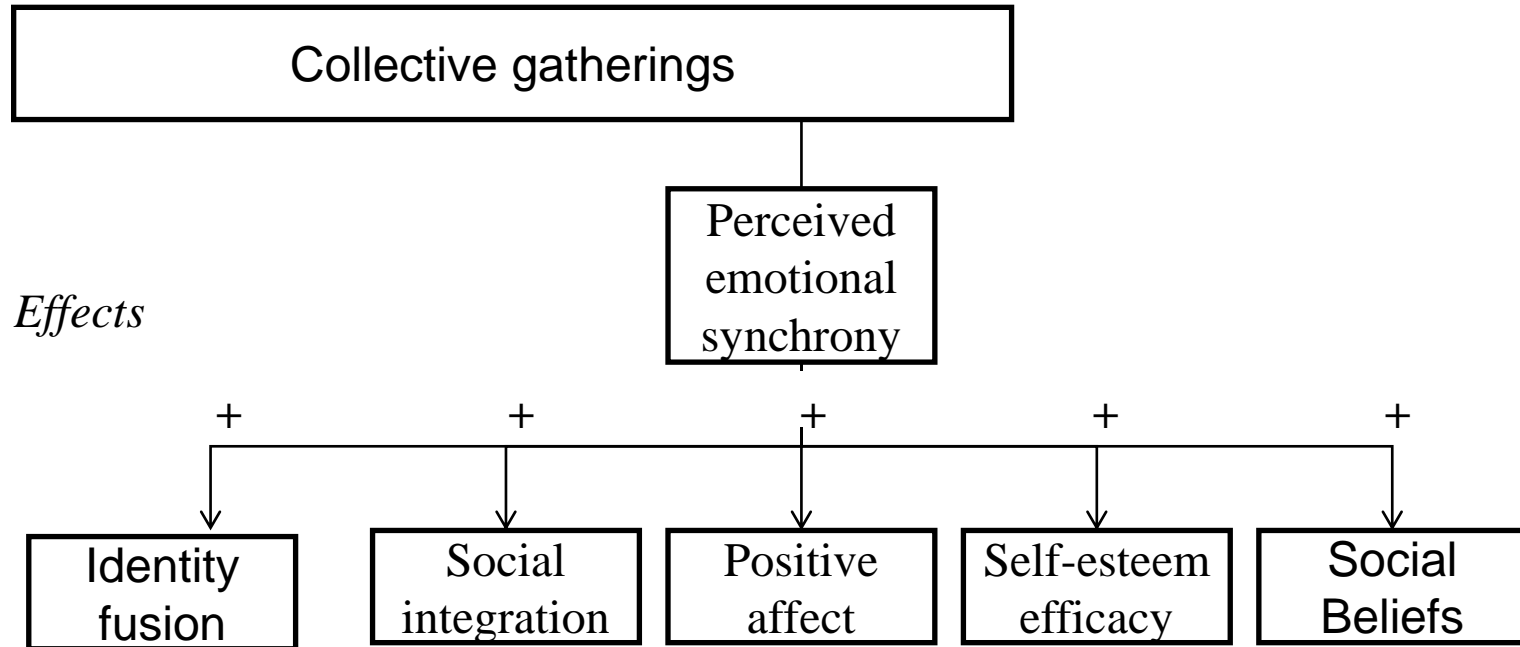
## ⇒ individual effects

social integration + collective beliefs

- Positive affect
- strength and self-confidence...



(Collins, 2004; Paez, Rimé, & Basabe, 2005)



# 1& 2. folkloric marches in Belgium and Spain Tamborrada





# *Tamborrada,*

- Collective drum marches, processions accompanied by large groups of “drummers” invade the streets of the town for a 24 hour-long celebration.
- involves several thousand local people who train all year and wear Napoleon-style military uniforms while parading.
- They play drums, march in synchrony imitating military units.
- For these walkers, as for all the inhabitants of San Sebastián, this celebration involves symbolic moments of high emotional impact.
- .

# Sample procedure

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Online survey encrypted individual mail

Support of Town Hall and Tamborradas societies

- Pre-Tamborrada N= 478
- Tamborrada N=410
- Post- Tamborrada N=378
- Total online (3 applications) = 315



# Study 2=1

## Pre-test

Three days before

Well being PHI Vazquez

Social Support Vaux

Social Beliefs Janoff-B &  
Dalbert

Fusion of Identity Swann

Collective efficacy

## During

Tamborrada

Emotional Synchrony

Shared Flow

Fusion Identity &  
Wellbeing

## Post-test

Three day after

Well being PHI Vazquez

Social Support Vaux

Social Beliefs Janoff-B &  
Dalbert

Fusion of Identity

Collective efficacy

# Measures before-after

- ***Social integration.*** As in study 1, the 10-item feeling of belonging scale developed by Richer and Vallerand (1998) assessed participants' perception of social integration (Cronbach's alphas of .96 and .98, respectively, before and after the *Tamborrada*).
- ***Collective efficacy.*** A short, 4-item version was adapted from the CEQS- Collective Efficacy Questionnaire for Sports (Martínez, Guillén, & Feltz, 2011), assessing respondents' perceived efficacy of the group (0 to 10) with which they performed a sports activity. Reliability coefficients were .91 at the pre-event and .92 at the post-event evaluation.
- ***Social beliefs.*** Participants' social beliefs were assessed using a shorter version of the World Assumptions Scale (Janoff-Bulman, 1989) and the Belief in a Just World Scale (Dalbert et al., 1987), as in Study 1. Reliability coefficients were .84 at the pre-event and .85 at the post-event evaluation.

# Measures before-during-after

- ***Fusion of identity.*** A pictographic measure (Swann et al., 2009) was used to assess the experience of oneness with the group or fusion of identity with the other participants. Five pictures showed different degrees of overlap between two circles representing, respectively, “the self” and “another person” (1 = no overlap; 5 = almost complete overlap). Before, during and after the *Tamborrada*, participants chose the diagram “that best describes your relationship between you and the other participants in the event.”
- ***Wellbeing index.*** The Pemberton Happiness Index (PHI, Vázquez & Hervás, 2012) contained 11 items rated from 0 = disagree strongly to 10 = agree strongly and examining general, eudaimonic, hedonic, and social well-being, yielding a single well-being index. Cronbach’s  $\alpha$  was .89 and .92 before and after the *Tamborrada* respectively

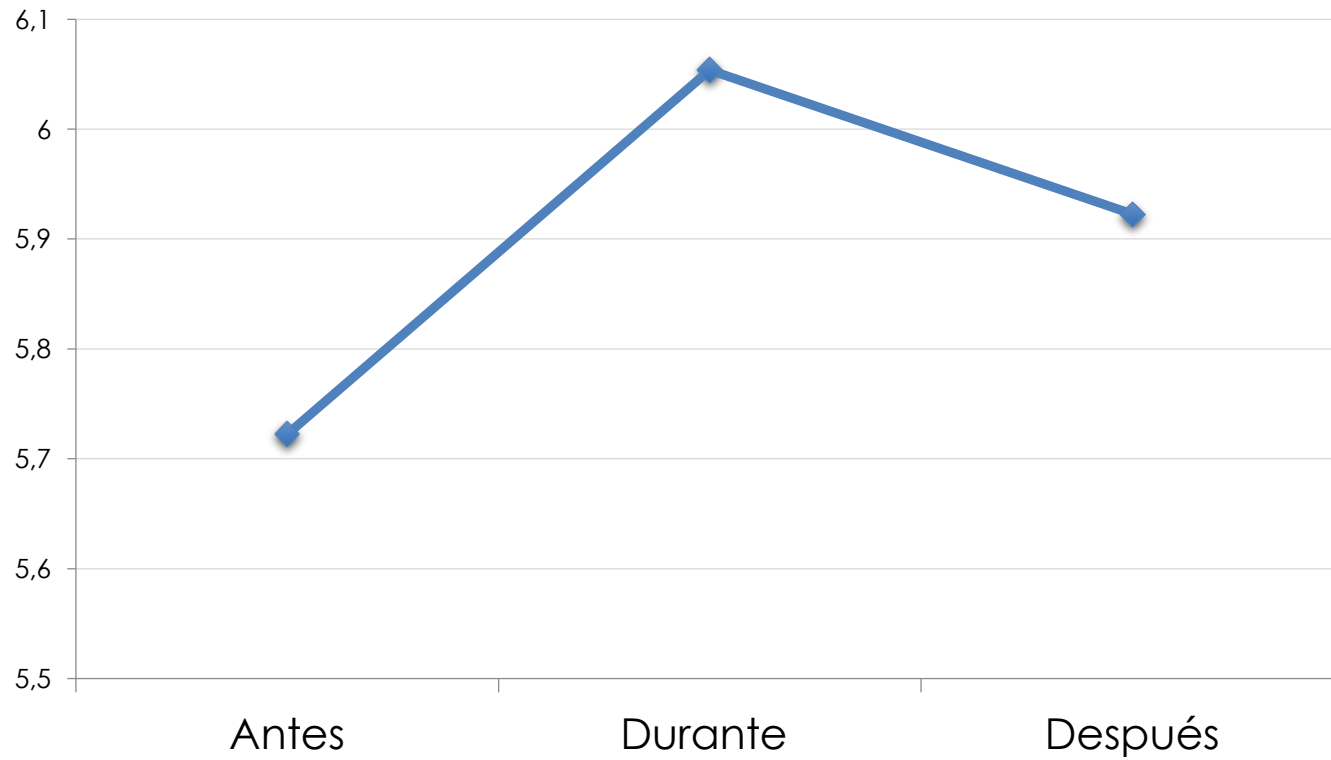
# Measures during collective event

- ***Perceived emotional synchrony.*** On the afternoon following the *Tamborrada*, participants completed the 18-item scale already used in Study 1. Cronbach's  $\alpha$  for this sample reached .97.
- ***Shared flow or collective optimal experience.*** A collective version of the Flow State Scale (Jackson & Marsh, 1996) was developed with 27 items (1 = not at all; 5 = very much) focusing on the group experience by regular use of the first person plural (e.g., “Our abilities matched the high challenge of the situation”). Cronbach's  $\alpha$  was .95.

# Perceived Emotional Synchrony: 18-item version alpha .80 or high

- Please answer according to your feelings towards your [*Tamborrada* group], taking into account that 1=Not at all and 7= All of the time
- We felt stronger emotions than those we normally feel.
- It seemed like we could read each other's minds.
- We felt that we were one.
- We felt more sensitive to our emotions and feelings because we were surrounded by people who felt the same.
- We felt a strong shared emotion.
- We performed as one, like a single person.
- We didn't need words to express the feeling between us.
- We felt a strong rapport between us.
- We felt really united, almost melded into one.
- What we were as a group was more important than what we were as individuals.
- We felt more intense emotions because we all went through the same experience.
- I felt as if I was transported out of myself, becoming part of the group.
- It seemed to me as if we were a single person.
- I felt a strong emotional bond between us.
- We let ourselves get carried away by our emotions.
- We communicated without words.
- We shared a moment of unity.
- We all felt a strong emotion.

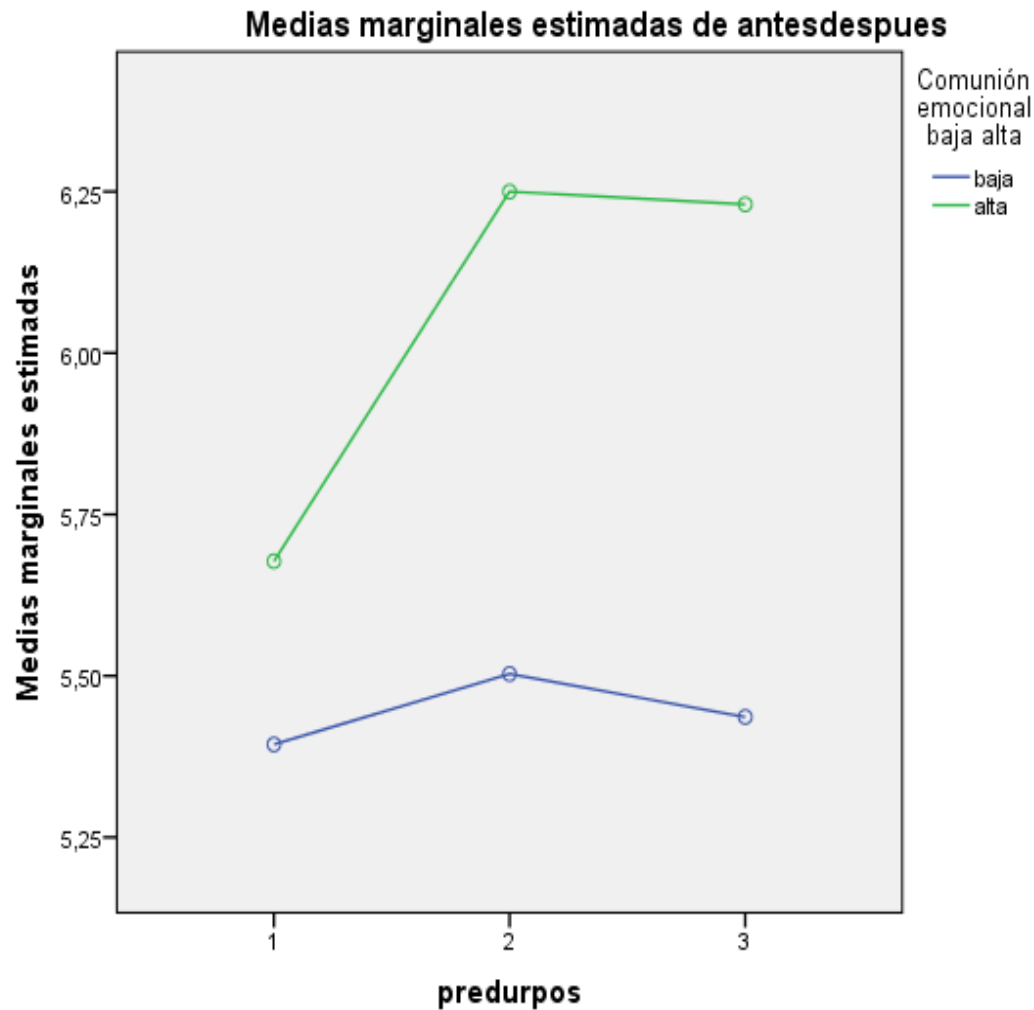
# Well Being PHI –increase climax decrease higher before Similar profile fusion of identity



Cuadrático  $F(1, 316)=33.40, p<.001, \eta_p^2=.096$

0-not at all y 10- a lot

Strong Increase in well-being in participants with high perceived emotional synchrony or emotional communion (green) than low (blue) Similar Profile fusion of identity



# Regression and multiple mediational analyses with Hayes and Preacher's (2013)

- controlling for pre-event scores showed that perceived emotional synchrony predicted
- higher values for feelings of oneness with the group,  $B = .16, t = 4.43, p < .001$ , higher perceived social integration,  $B = .26, t = 5.33, p < .001$ , higher well being,  $B = .18, t = 3.47, p < .001$ , higher collective efficacy and a more positive or benevolent and just perception of the world,  $B = .07, t = 2.90, p < .003$ .
- Shared flow showed a significant coefficient only for collective efficacy,  $B = .50, t = 4.07, p < .001$



# Study 3

## the May 15 movement of the indignants in Spain



# Context

- In Madrid, Spain, in the spring of 2011
  - major spontaneous protest movement
  - “movement of May 15”
  - in opposition to the economic and social situation
- quickly spread to other major cities in Spain,
  - taking the form of a day and night occupation of public places by numerous volunteers
  - accompanied with intensive social interaction (i.e. discussion of socio-political issues).

# Measures

- participants were instructed to refer to their participation
  - either at May 15 collective events
  - or at some unrelated collective meeting which they attended recently (control condition)
- they completed
  - level of personal involvement in the movement.
  - short version of the “perceived emotional synchrony” scale ( $\alpha = .90$ )

# additional measures

- level of social integration
  - through short scale of perceived social support ( $\alpha = .87$ )
- perception of collective emotions in their social group 1-5
  - emotional climate scale
- agreement with values promoted by the movement of May 15—solidarity, freedom, dignity, participation, social justice and equity.

# Procedure

Respondents were people who attended the scene associated with the protest movement in different cities.

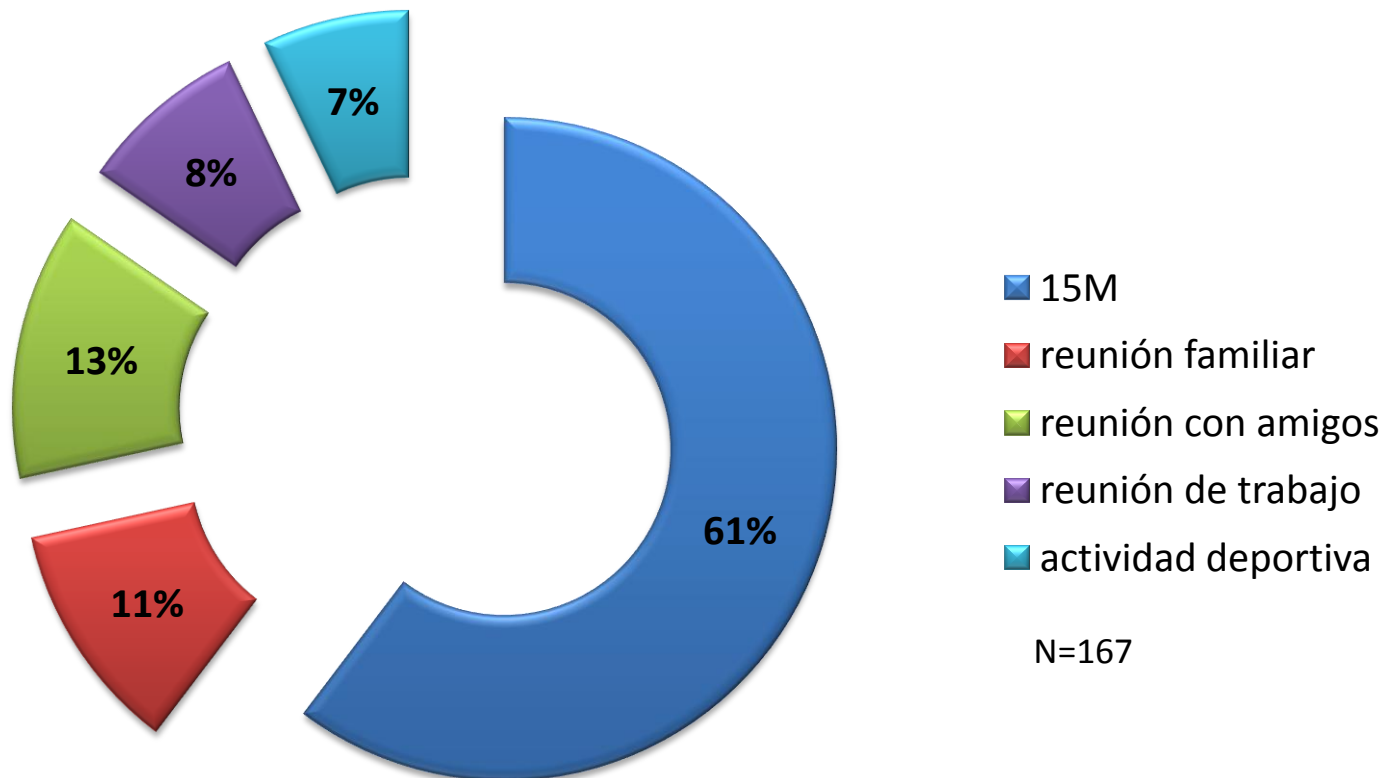
They were contacted during the month of June 2011 by doctoral students in psychology either on site, or in connection with an event related to the movement, or else on college campuses.



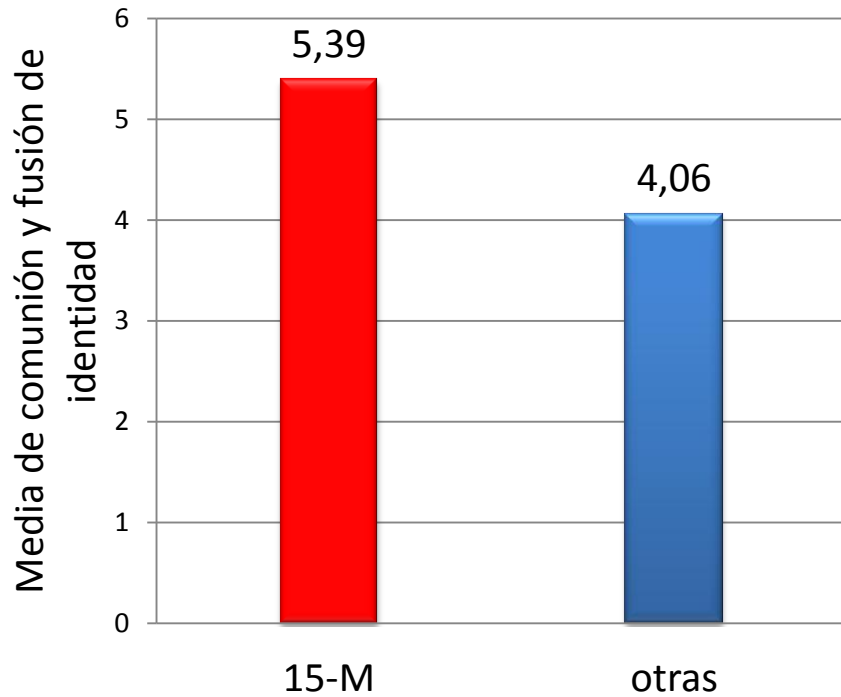
results...



# % participants: Demonstrations 15 May and other collective activities



Participation in 15-M demonstrations associated to high emotional communion or perceived emotional synchrony than others activities

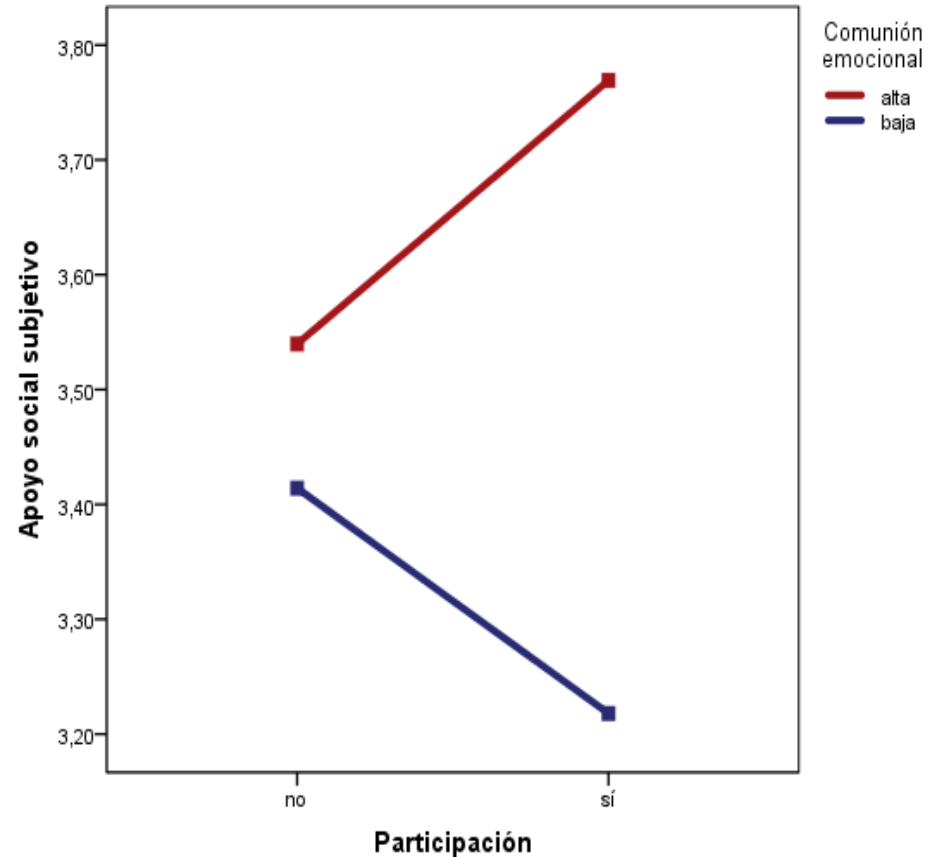


$t(131)=6,28$   
 $p<0,001$



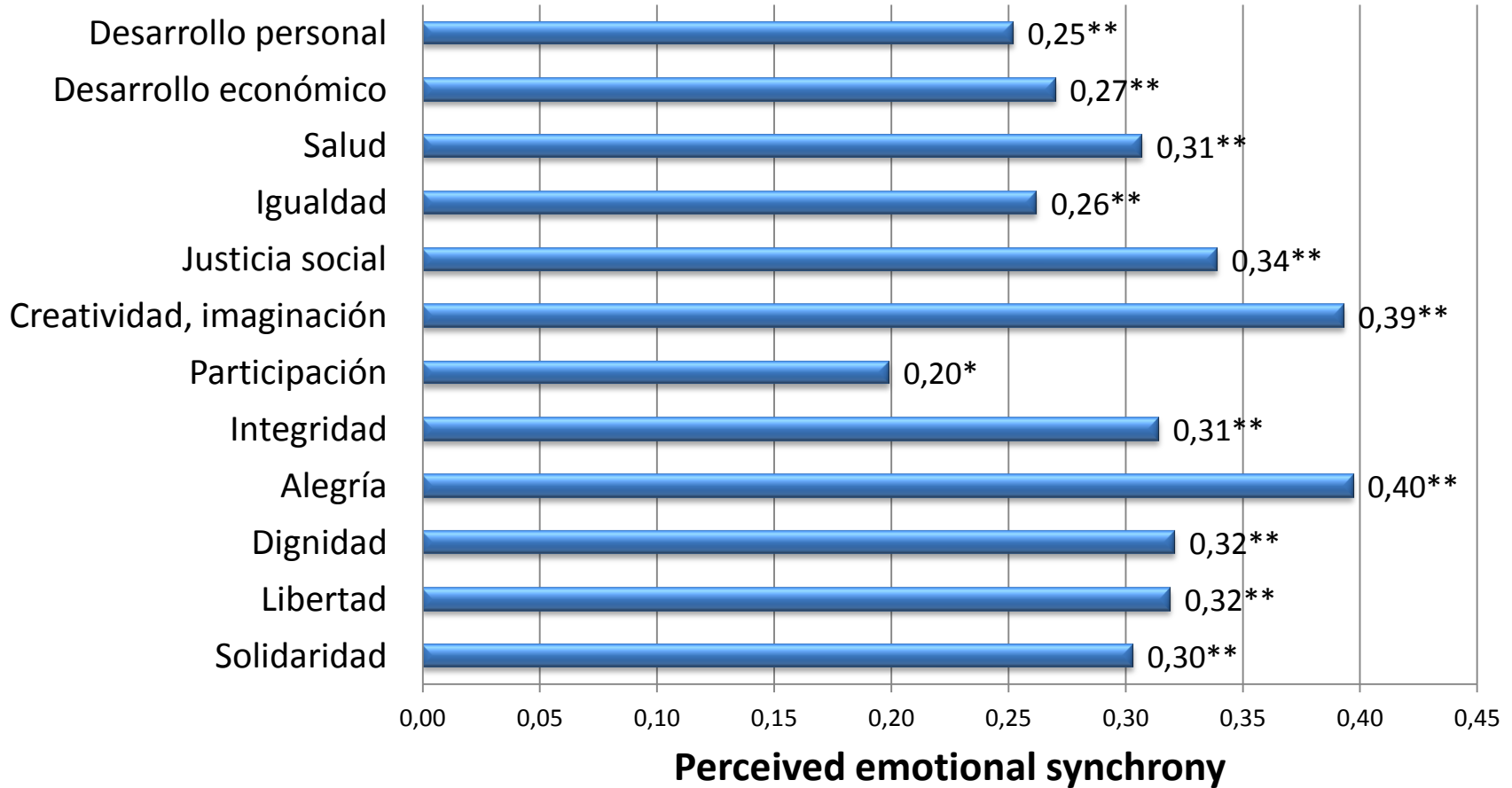
# Emotional synchrony, social support and 15 M participation

- Emotional comunión correlates with social support ( $r=0,32$ ,  $p<0,001$ )
- Interaction between participation 15-M and high versus low level of emotional communion and social support  
 $F(1)=3,30$ ;  $p<0,05$ .



# Correlations: emotional synchrony and high agreement with values related to 15

M



N=162 \*p<.01, \*\*p<.001

# Summary of main results

- emotional communion and collective identification level was higher in 15-M participants than what was found in more common group activities.
- higher intensity of emotional synchrony was related to higher perceived social support
- those who participated and experienced high level of emotional communion perceived a more intense anger in the emotional climate
- the more participants had experienced emotional synchrony during these events, more they endorsed the values represented by the social movement.

# Participation in demonstrations, fusion of identity, esteem and emotional synchrony: experimental study 4

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\*UPV/EHU + Louvain University

# Experimental study on demonstrations

- social worker students were randomly assigned to participate
  - either in what was presented as "an organized activity" (N=18),
  - or to an individual condition (N=20) (Paez et al., 2012).
- The organized activity meant
  - writing slogans and making signs expressing opposition to anti-immigrant prejudice and
  - thereafter, to go on campus and to demonstrate by exhibiting these slogans.

# Comparison between collective activity and individual activity

- Walker (2010)
  - found in experimental and correlational studies that **positive emotions level** were higher during interactive optimal experience versus individual
  - proposed also that **emotional communion** will be more typical and higher during collective activities
- In a this study, we compared
  - participants in a collective activity with participants in a similar individual activity
  - elaboration of slogans and posters pro immigration, but not including participation in a demonstration

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DE TRABAJO SOCIAL

U.P.V. E.H.U.



# Design and Measures

1 week before and 1week after the event,  
participants from both conditions completed

## 1. public collective self-esteem

- Scale of collective self-esteem (Luthanen and Crocker 1992) **1– 7**

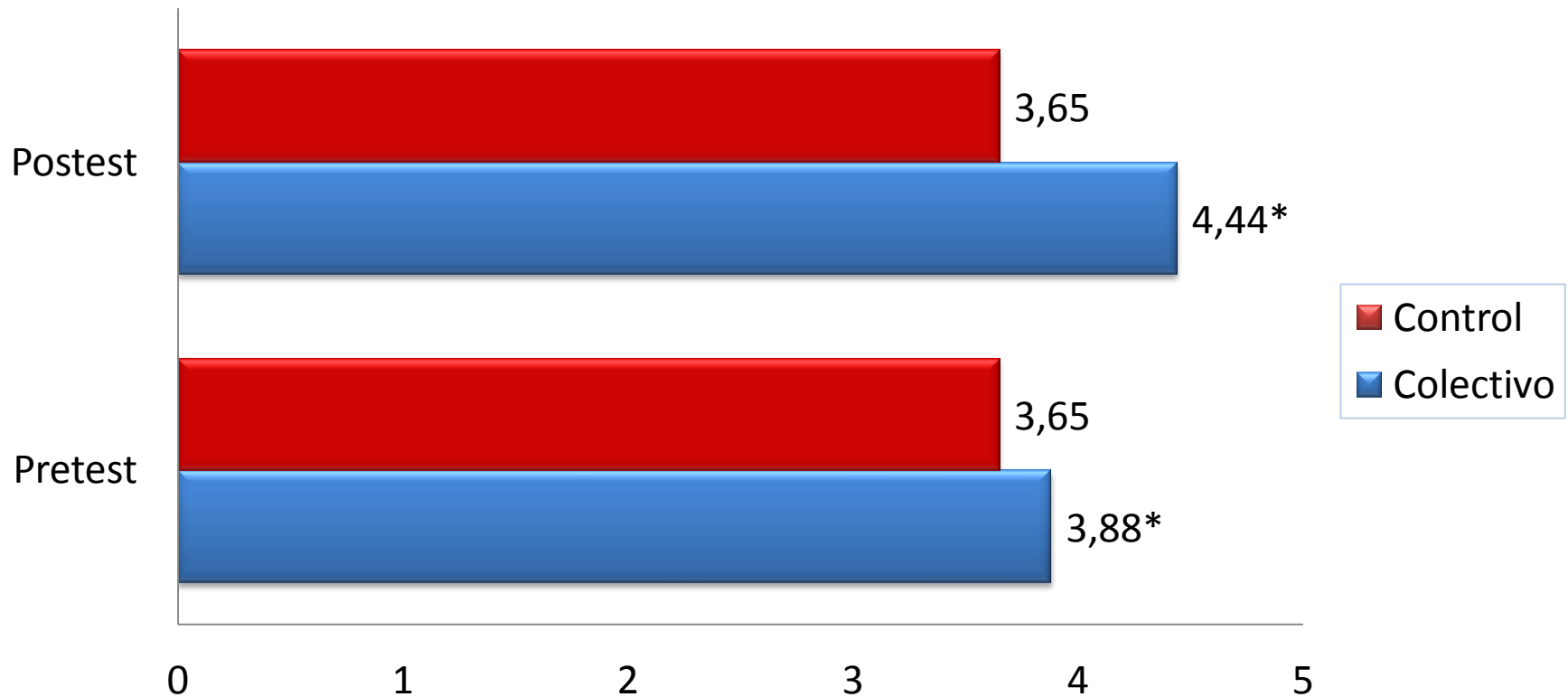
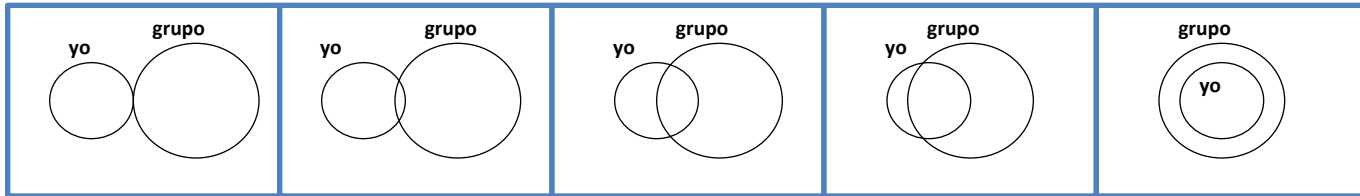
## 2. identity fusion

- graphic scale “Inclusion of the Self in Others” (Gomez et al, 2011), **1– 5**

## 3. perceived similarity with the group

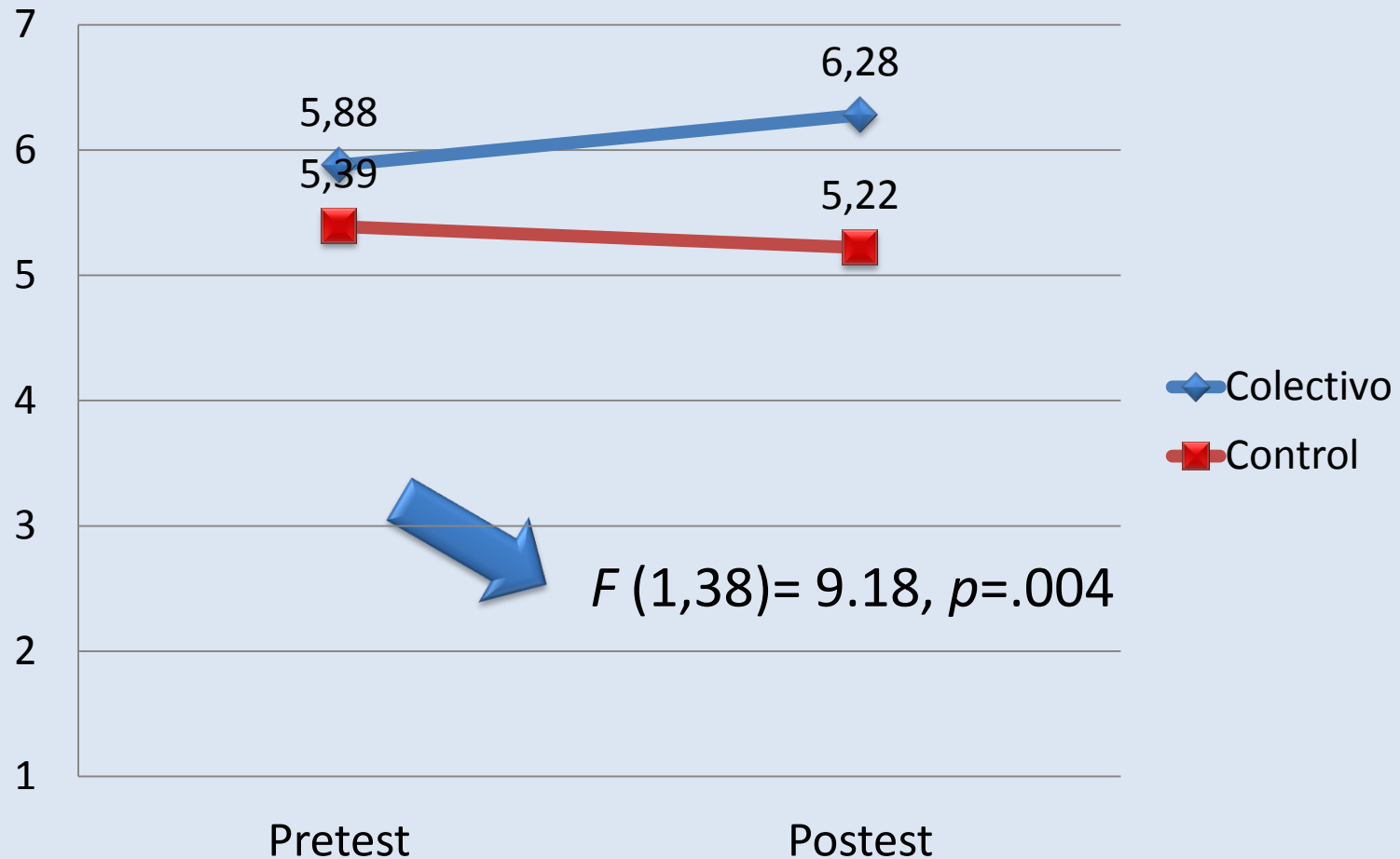


# Fusion of Identity

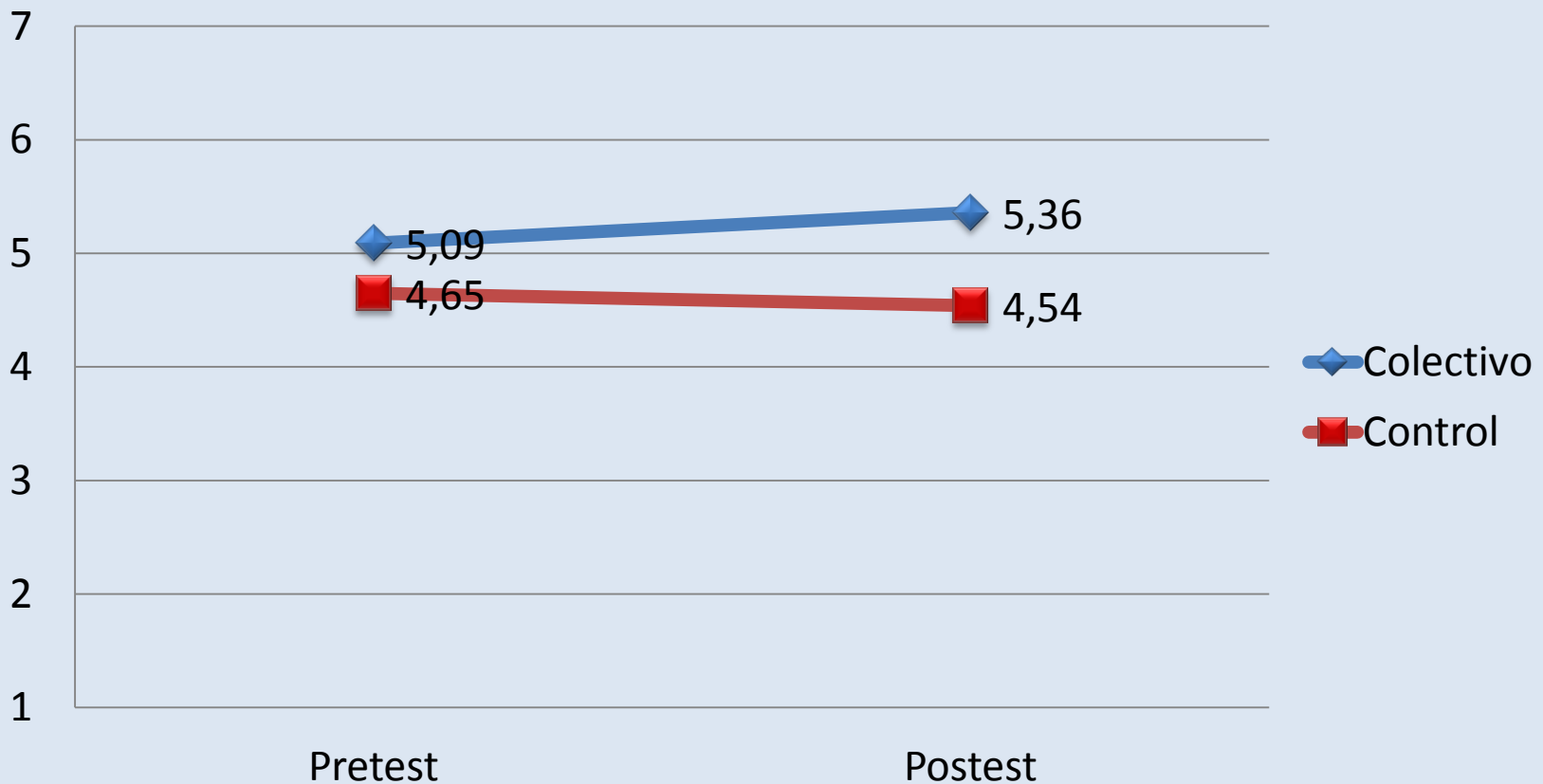


**Colectivo > Controls → Demonstration increases Fusion**

# Collective Self-esteem



# Perceived similarity with the group





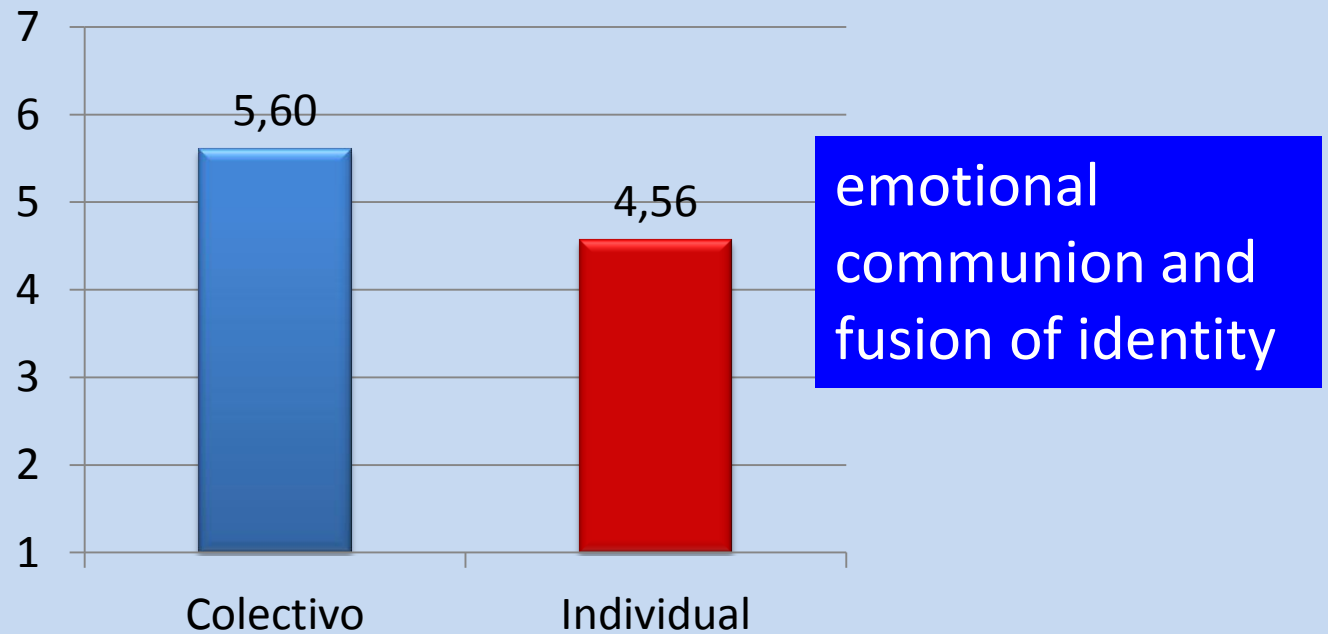
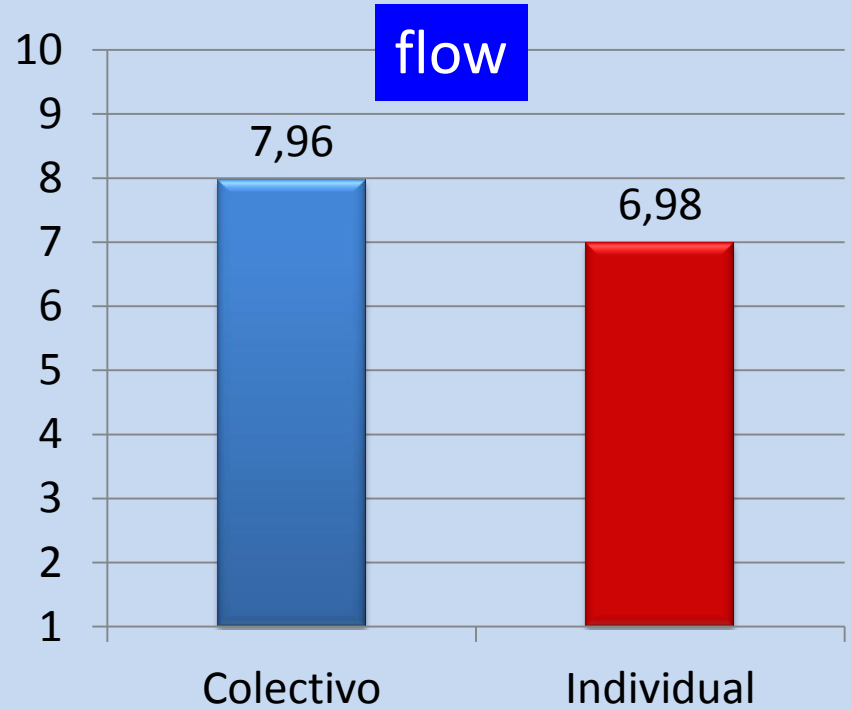
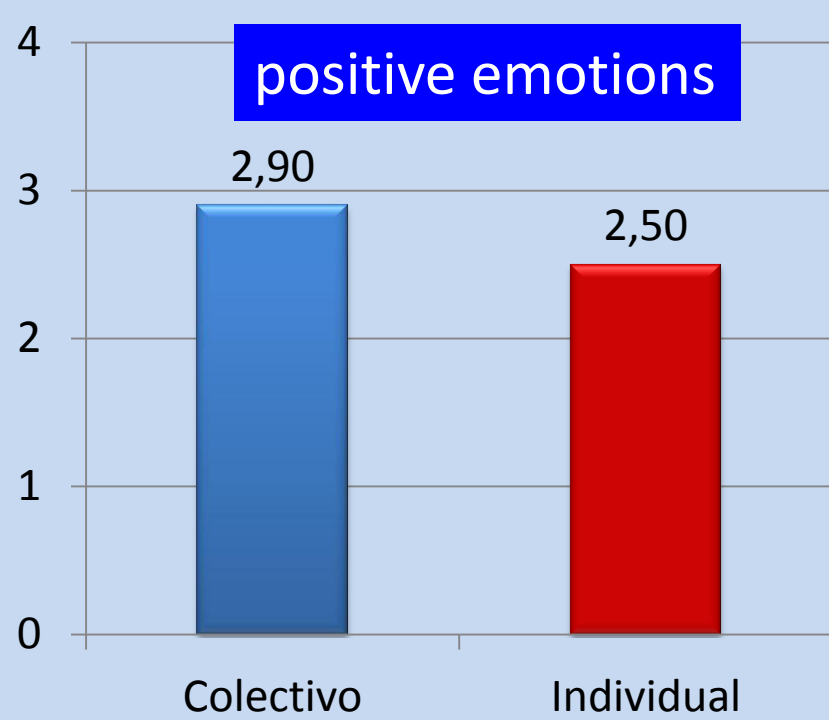
experimental condition



control condition

# Measures after activities

- *Emotional communion*
  - short version of Rime's et al scale of perceived emotional synchrony (1-7) ( $\alpha = .90$ )
- *Flow scale*
  - short version of Jackson's et al flow scale (18 items) (1-10) ( $\alpha = .80$ )
- *Positive emotions scale*
  - Fredrickson's scale of positive emotions (10 items) (0-4) ( $\alpha = .78$ )



# Summary of Results

- control group → no change for
  - collective self-esteem
  - identity fusion
  - perceived similarity with the group,
- experimental group → « after »
  - significant increase for each three variables.
  - furthermore, compared with the control group, the experimental group manifested significant
    - increase in perceived rights of immigrants
    - decrease in feelings of mistrust and insecurity with respect to migrants.

# Conclusion

- Experimental studies confirm that compared to a similar individual activity, **participation in demonstrations**
  - Reinforce social integration or fusion of identity and perceived similarity with ingroup member
  - Induce
    - more emotional communion,
    - more positive emotions
    - a higher flow



Emotional synchrony meta-analysis 4 studies  
Mean  $r = .36$  identity fusion,  $r = .34$  social support,  $r = .57$  positive affect,  $r = .27$  selfesteem collective,  $r = .21$  Beliefs values

Table 5

*Effect Size Estimation of Association Between Perceived Emotional Synchrony and Identity fusion, Social Integration, Positive Affect and Well-Being, Self-Esteem and Social Beliefs. Weighted Average Correlation Coefficients are based on Rosenthal (1991)*

Variable and Study	Perceived Emotional Synchrony
<b>Identity fusion</b>	Weighted $r = .56$
Fusion with the group (Study 2)	$r(319) = .56^{**}$
Fusion with the group (Study 4)	$r(21) = .54^{**}$
<b>Social Integration</b>	Weighted $r = .34$
Social integration (Study 1)	$r(93) = .49^{**}$
Social integration (Study 2)	$r(319) = .37^{**}$
Social support (Study 3)	$r(132) = .34^{**}$
<b>Positive Affect and Well-Being</b>	Weighted $r = .57$ (PWB study 2 excluded)
Positive affect (STAI, Study 1)	$r(93) = .17^*$
Personal well-being (Study 2)	$r(319) = .35^{**}$
Positive affect (Fredrickson, Study 2)	$r(319) = .71^{**}$
Positive emotion (Hope, Study 3)	$r(132) = .37^{**}$
<b>Empowerment</b>	Weighted $r = .27$
Collective self-esteem (Study 3)	$r(132) = .19^*$
Collective self-esteem (Study 4)	$r(21) = .28^+$
<b>Social Beliefs and Values</b>	Weighted $r = .21$
Benevolent and just world (Study 1)	$r(93) = .26^*$
Benevolent and just world (Study 2)	$r(319) = .19^{**}$
Values (Study 3)	$r(78) = .22^*$

Note.  $+p < .10$ ,  $*p < .05$ ,  $**p < .01$ .

- four studies, two correlational, one semi-longitudinal and one experimental, assessing the positive effects of participation collective gatherings
- strengthened collective identity, identity fusion with the group and social integration, enhanced personal and collective self-esteem and efficacy, positive affect, as well as positive social beliefs among participants.
- In line with a central tenet of the theory, emotional communion or perceived emotional synchrony with others mediated these effects.

- Tewari S, Khan S, Hopkins N, Srinivasan N, Reicher S (2012) Participation in mass gatherings can benefit well-being: Longitudinal and control data from a North Indian Hindu pilgrimage event. *PloS One*, 7(10), e47291.
- Paez, D. Rime, B., Basabe, N., Wlodarczyk, A. & Zumeta, L. (2015) Psychosocial Effects of Perceived Emotional Synchrony in Collective Gatherings. *Journal of Personality and Social Psychology*, Advance online publication. <http://dx.doi.org/10.1037/pspi0000014>
- Von Scheve, C. & Salmela, M. (2014)(Eds.). *Collective Emotions*. Oxford.