Flow and Emotional Experience In Spirituality, Differences In Interactive and Co-active Collective Rituals

Sergi Rufi¹*, Anna Wlodarczyk², Darío Páez² and Federico Javaloy¹

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¹Department of Social Psychology, Faculty of Psychology, University of Barcelona.

²Department of Social Psychology and Methodology, University of the Basque Country.

* Corresponding author: rufisergi@gmail.com
Authors

Sergi Rufi
Department of Social Psychology, University of Barcelona
Passeig de la Vall d’Hebron, 171, Barcelona 08035, Spain
Phone: +34933125170  Mail: rufisergi@gmail.com

Anna Wlodarczyk
Department of Social Psychology and Methodology of Behaviour Sciences, Psychology Faculty, University of the Basque Country.
Avenida Tolosa, 70. 20018 San Sebastián. Spain
Phone: +34943015738  Mail: anna_wlodarczyk@ehu.es

Darío Páez
Department of Social Psychology and Methodology of Behaviour Sciences, Psychology Faculty, University of the Basque Country.
Avenida Tolosa, 70. 20018 San Sebastián. Spain
Phone: +34943018326  Mail: dario.paez@ehu.es

Federico Javaloy
Department of Social Psychology, University of Barcelona
Passeig de la Vall d’Hebron, 171, 08035 Barcelona, Spain
Phone: +34933125179  Mail: federicojavaloy@gmail.com
Abstract

This study seeks to compare flow and emotional experience in interactive and co-active collective rituals. For such purpose, a correlational study was performed collecting self-report measures of flow, positive emotions and social identity in three different social collective gatherings: the Sunday celebration of a Catholic mass (N = 57), a Zen Buddhist meditation practice (N = 50) and secular Sunday group activities (N = 37). Results show the presence of flow in all three contexts, being higher in the interactive social situations (the Catholic mass and other Sunday group activities) than in the co-active one (the Zen meditation practice). Positive emotions are also higher in the interactive situations than in the co-active one. Regarding self-transcendent emotions, there is more inspiration in the Zen meditation practice and more hope in the Catholic mass. Flow and positive emotions are positively correlated in all three contexts. Specifically in the Zen meditation practice, flow, positive emotions, loss of self-consciousness and social identity are positively correlated.

Keywords: collective rituals, flow, positive emotions, social identity

Introduction

Although Csikszentmihalyi’s flow theory originally focused on individual aspects of the phenomenon, the author also provided clues about its social impact. Indeed, Csikszentmihalyi (1990) stated that flow has influenced sociocultural evolution by reinforcing situations that prompt it, such as social rituals, contributing in that manner to the survival of societies. This coincides with the functional significance that Durkheim (1912/2003) attributed to rituals, by encouraging positive collective emotions and social cohesion. In the past years, the interest to study flow in social contexts has increased. Sato (1998) was the first researcher to approach and study such phenomenon, establishing a connection with the sense of community or communitas - ‘a free and rewarding emotional closeness compared with the limitations of social roles, a sense of community and participation that builds social solidarity’ (Turner, 1974). Later, the connection among flow and communitas was empirically analysed.
(McGinnis, Gentry and Gao, 2008), and the conditions and qualities of social flow were explored
(Walker, 2010). Recently, flow has been tracked down and studied in a variety of social situations, like
in group music (Lamont, 2012; Livesey, Morrison, Clift & Camic, 2012); in group sports (Schü &
Brunner, 2009); in group videogaming (Kaye & Bryce, 2012) and other shared contexts.

On the other hand, Csikszentmihalyi (1990) suggested that the flow element that favors union
with the group is the ‘loss of self’ (or loss of self-consciousness), that it is linked to a feeling of
merging with the environment or group to which one belongs to. In turn, Turner (1987), in his theory
regarding the social identity of groups, predicted that despite deluting personal identity in a group
context, individuals tend to increase their social identity.

Only few studies have been published on measuring and exploring the flow phenomenon on
spiritual practice. The focus of such studies were based on analysing the phenomenon considering
mainly cross-cultural differences (Coppa & Delle Fave, 2007, 2009; Delle Fave & Bassi, 2004;
Zaccagnini, Delle Fave, & Sanabria, 2010; Delle Fave, Massimini & Bassi, 2011a, 2011b). The present
study seeks to expand the knowledge on how flow operates in social situations or social flow (Walker,
2010), by empirically analysing the linkages between flow experience and positive emotions that take
place in different spiritual and non-spiritual collective settings. To carry out such purpose, three
different social contexts will be considered; a Catholic mass celebration (a spiritual interactive situation
where participants cooperate and coordinate their performance), a Zen meditation practice (a spiritual
co-active situation where participants perform side-by-side but do not interact), and two non-spiritual
interactive activities, such as after-lunch conversations and playing cards with friends. Moreover, in the
Zen meditation practice, the loss of self-consciousness flow dimension is used to evaluate the
emergence of social identity of the group members.

**Flow dimensions and social flow**

Flow is a positive emotional state that occurs when a person is fully immersed and absorbed in an
activity. Flow is composed of nine dimensions divided into three interconnected stages: antecedents, experiences and effects (Chen, Wigand, & Nilan, 1999). The antecedents are composed of a clear goal that involves a challenge that is in balance with the individual's abilities, and that provides direct feedback. The experiences that follow are the concentration on the task, the merging of action and awareness, and the consequent sense of control over the activity that is taking place. Lastly, the effects are a loss of self-consciousness, the distortion of time and the autotelic experience.

Initially Csikszentmihalyi focused flow research on the creativity of people who carried out their activities individually. Furthermore, as Csikszentmihalyi himself affirms (1990), interest in the optimal experience expanded and was employed by psychologists with an interest in happiness, life satisfaction and intrinsic motivation; by sociologists interested in positive social experience (flow as the antithesis of alienation and anomie) and anthropologists exploring in ritual and religious experiences. Regarding flow in social contexts, Csikszentmihalyi (1990) states that "loss of self-consciousness allows people to momentarily give up their normal identities and act in different roles", thus the optimal experience in social contexts relates to Turner's *communitas* (1974) and Durkheim's *collective effervescence* (1912/2003). McGinnis, Gentry and Gao (2008) analysed the connections between flow and *communitas*, concluding, as already pointed out by Csikszentmihalyi (1997), that flow is experienced in multiple tasks such as skiing, climbing, dancing, surgery, musical performances and friend's gatherings. All those activities could also be developed in groups, making it possible for flow to produce *communitas* and motivate sense of community and ingroup proximity behavior. Likewise, Walker (2010) studied the differences between social and solitary flow, and his findings, like the ones by Mesurado (2009), show that social flow provides more positive affect and enjoyment than solitary flow does, since the emotions produced by group flow are amplified by social sharing and emotional contagion. Furthermore, Walker (2010) distinguishes two different kinds of social flow; co-active flow (experienced in the presence of other people) and inter-active flow (carried out in the interaction or cooperation with others), the latter being the one that induces more flow and positive affect.
Flow in spirituality

The term spirituality is related to inspiration and personal growth through the belief in a higher divine power that connects all things (Diener & Biswas-Diener, 2008). Spirituality has been described as a subjective experience of sacredness and transcendence, a search for existential meaning by contacting with the divine within the self, and it also includes the feeling of connectedness with a transcendent power, with oneself, with nature, with one’s community, and the process of meaning-making (Delle Fave et al., 2011b). Spiritual rituals influence sensory stimuli by focusing the attention of the participants, who know the structure of the ritual, although they cannot predict what they will experience in each step of the process. Practicing spirituality is also an opportunity for socialization, since it promotes social support through the participation to collective rituals and community activities (Delle Fave et al., 2011b).

Csikszentmihalyi did not analyze spiritual experience in detail, yet pointed out that spiritual rituals produce flow (Neitz & Spickard, 1990). Currently, empirical studies about flow in spirituality are still scarce, although research in this field seems to be emerging (Sanabria, 2011). Some studies have been carried out to examine different aspects of some religions, such as the effects of the practice of Islam in a group of African immigrants (Delle Fave & Bassi, 2004), the rewards of religious practice in a group of Italian Catholics (Coppa & Delle Fave, 2007), the spiritual well-being produced by the practice of Catholic religion in nuns and priests (Coppa & Delle Fave, 2009), and the study of quantity and quality of flow in Catholic and secular individuals –being higher in the first group (Delle Fave et al., 2011b; Sanabria et al., 2010).

Spirituality does not necessarily imply a belief in supernatural entities, which is only one aspect of spirituality. This is less commonly shared in secularized Europe (Saroglou et al., 2008) or in Buddhist Zen rituals (Cottraux, 2007). The other two aspects of spirituality are the self-projection towards a larger transcendent reality (or connectedness) and a belief in the unitary nature of existence
(or universalism), both constitute general criteria and consequently more cross culturally valid (Emmons, 2005).

**Emotional experience in social rituals**

Social positive rituals are gatherings that generate positive, and socially-oriented (Fredrickson, 2009) attitudes and emotions. Fredrickson suggests that positive emotions broaden our perspective, which expands our vision of ourselves and affects our social relationships. Thus, boundaries between the 'I' and 'you' fade in the minds, and as a result, new possibilities of connection emerge. This is how individuals self-expand and integrate the skills and the traits of the people they connect with, since positive emotions alter the way people relate to others. Individuals perceive themselves closer and more connected, sensing that they are the same as those who are perceived as different at any other place and time. This sense of unity experienced in the context of a positive ritual shifts the way people interact with other participants (Fredrickson, 2009). In fact, participation in spiritual rituals is mainly associated to provide and receive social support, to generate the feeling of belonging to a community, to increase personal and collective self-esteem and closeness, and achieve feelings such as “love thy neighbour” (Haidt, 2006). More specifically, spiritual rituals reinforce 'self-transcendent emotions', like amazement, gratitude, inspiration, hope and serenity (Emmons, 2005). Amazement, along with gratitude and inspiration, are 'self-transcendent emotions' that make people focus their attention outwards, while integrating ourselves into broader realities (like the group and/or the community). In spiritual rituals, feelings of overpowering majesty and mystery are often experienced, thus eliciting awe, reverence, wonder or amazement (Haidt, 2006; Emmons, 2005; Fredrickson, 2009). Gratitude towards supernatural entities for gifts and mercies are common in spiritual worship, private and collective rituals and dispositional measures of gratitude correlates with measures of spirituality (Emmons, 2005). Spiritual messages by exposing models of heroes and martyrs fuel inspiration, urge to do one's best and to improve oneself and the society (Haidt, 2006; Emmons, 2005). Participation in
prayers, religious and meditation rituals induce calm and serenity as a result of contact with a transcendent reality, or relaxation and mindfulness (Emmons, 2005; Saroglou, Buxant & Tilquin, 2008). Serenity is an emotion directly associated with spiritual rituals inspired by Buddhist and Eastern practices. This emotion often appears in safe and stable contexts that prompt stillness and the savoring of the present moment. This state of inner peace facilitates the integration of life experiences and the acquisition of renewed perceptions about oneself and life in general. This process enables to feel oneself as part of something greater by letting go of self-absorption, which weakens differences between the self and the social world. In this sense, collective spiritual gatherings favour the experience of ’self-transcendence' or the merging of personal identity with the social world (Frederickson, 2009; Van Cappellen & Rimé, 2013).

Loss of self-consciousness, Durkheim and the Social Identity Theory

Loss of self-consciousness - 'the loss of the sense of a self separate from the world around it is sometimes accompanied by a feeling of union with the environment’ (Csikszentmihalyi, 1990) - is specially relevant to the social dimension of flow. This feeling of unity may be either with an object (the mountain for the climber, the board for a chess player), or with the team to which the practitioner of a sport belongs. This loss of self-consciousness effect, and the feeling of merging with the environment or with the group, is the mechanism that experientially articulates a change in the individual. Its consequence is the decline of personal identity and the salience of social identity in a group – since the group's consciousness absorb individuals, who end up identifying themselves more as members of the group.

Classic research in social psychology has shown that people think, feel and act differently in a group than they do alone (Javaloy et al., 2001). When fully immersed in a group, under certain conditions, reduction of self-consciousness may be what leads members to behave more uninhibited or 'de-individuated' (Zimbardo, 1969). However, according to the group's social identity perspective
(Tajfel & Turner, 1986), what happens is that in a specific context (e.g. demonstrations, collective behaviors or rituals) personal loss of identity is accompanied by a 'salience' of social identity, which makes participants perceive themselves less as separate individuals and more as members of the collective group (Turner, 1987). Social identity theory coincides with Durkheim in its functionalist orientation (Turner, 1987; Páez, Javaloy et al., 2013), which states that rituals have a role in social cohesion and commitment to social values and beliefs, through emotional sharing, emotional communion, and a shared mode of perception with others (Rimé, Basabe & Páez, 2005). Rituals increase the emotional sharing and social ties, facilitating change and improvement of affect and cognition (Páez et al., 2012). In this regard, Durkheim (1912) pointed out that individuals attended rituals in order to boost their energy by connecting with 'something beyond their reach' that only becomes real through unity with others. These festive rites promote the social sharing of emotions and a set of common basic processes -such as singing, praying, etc.- that emphasize the identification and prosocial behavior of participants. These type of social rituals hold direct impact on the subjective well being of individuals, directly influencing their life' satisfaction, perceived social well-being and affect balance (Páez et al., 2011). Thus, group flow may be the facilitator of the emotional communion between the members, and the sense of identification with respect to the group. Furthermore, emotional communion and fusion of identity with the group are strongly associated processes (Páez & Rimé, 2012).

In conclusion, one of the issues raised in this study is showing whether flow is central to spiritual practices (Csikszentmihalyi, 1990, 1998) that are associated with feelings of self-transcendence like amazement, gratitude, inspiration, hope and serenity (Emmons, 2006). In this paper, we will examine how these self-transcendent emotions behave in co-active spiritual rituals (the Zen meditation practice) and interactive spiritual rituals (the Catholic mass), as opposed to other everyday collective gatherings. For such purpose, the behavior of participants at a Sunday Catholic mass -where praying, religious singing, Bible reading and preaching take place- is observed, measured and
compared with a similar group who carried out important Sunday non-spiritual group activities (after-lunch conversations and/or playing cards with friends). Both situations are considered to be interactive activities where people socialize, cooperate and coordinate their actions to a certain extent (i.e. reading out loud in unison and singing along with each other in the Catholic mass, and talking to each other, sharing stories, eating and playing together in non-spiritual activities). These same aspects are measured during the celebration of a two hour long Zen Buddhist meditation practice—where participants deepen into the practice of silence and the cultivation of a non-self state of mind through sitting and walking meditation. In this situation, participants perform the activity side-by-side but don’t interact. Walker (2010) demonstrated that interactive optimal experiences elicit higher positive affect—and probably reinforce shared or social aspects of flow (Perez & Rime, 2014). Thus, since the Zen meditation practice emphasizes personal meditation and self-absorption and does not focus on coordinated behavior like the Sunday mass does, it is expected the Catholic ritual to elicit higher positive affect; particularly, ‘relational emotions’ like closeness, and ‘high activation emotions’ like amusement and joy. In opposition, the Zen ritual may reinforce ‘self-transcendent emotions’ like amazement, gratitude and inspiration, and ‘low activation emotions’ like serenity.

Objectives

The general objective of the present paper is to explore the different hypothesis between flow and positive emotions experienced in interactive situations (a Catholic mass and two Sunday non-spiritual activities) and in a co-active situation (a Zen meditation practice). In particular, the first hypothesis intends to confirm that flow and ‘high activation emotions’ are stronger in interactive than in co-active group activities. The second one is to contrast that self-transcendent emotions are stronger in the spiritual activities than in the non-spiritual ones. Third, to prove that ‘low activation emotions’
like calm or serenity are reinforced in the co-active ritual. Fourth, to contrast that the flow experienced is associated with positive emotions in these activities.

There are two additional hypotheses that contrast the association between flow, positive emotions and the social identity experienced by the participants in the Zen meditation practice, given the particular features of this social context. The Zen meditation practice takes place in a Zen dojo, a meditation hall where Zen Buddhists get together to practice zazen meditation, and it is not open to the public (like the Catholic mass). Thus, participants are members committed to the group and participate on a sustained and long-term/regular social activity. In this context, as opposed to the Catholic mass and the secular Sunday activities, which are collective gatherings that imply a very limited form of group dynamics, and likely a lower level of affiliation and social identification, participants behave the same (remaining still and in silent), dress the same (in black outfit) and look alike (short hair).

Therefore, the fifth hypothesis contrasts that the flow experienced in this long-term group activity is associated with positive emotions and high social identification, and the sixth one verifies that the ‘loss of the self-consciousness’ flow dimension is the psychological phenomenon that facilitates the emergence of the social identity in the group.

Method

Participants

The total sample consisted of 144 adults who were divided in three groups according to the activity in which they participated. The first one consisted of 57 participants (70.2% female, 29.8% male) in a Sunday Catholic Mass, their average age was 58 (SD = 15.85). The second group was composed of 50 participants (44% women, 56% men) in a Zen meditation practice, the sample had a mean age of M = 38.5 (SD = 11.06). And the third was a control group of 37 participants (51.4% women, 48.6% men) who partook in non-spiritual activities (20 participants in after-lunch
conversations and 17 in playing cards with friends), the sample had a mean age of $M = 40.36$ (SD = 14.05).

Instruments

According to the hypotheses first, second, third and four, the following scales were applied.

A short version (9 items) of the *Flow State Scale* (FSS) (Jackson and Marsh, 1996), based on the Spanish translation of the FSS developed by Garcia Calvo, T., Jimenez, R., Santos-Rosa Ruano, FJ, Queen, R. & Cervelló, E. (2008) was used. This short version contains one item for each of the nine dimensions of the optimal experience, the response categories were based on a 5-point Likert scale ranging from “completely disagree” to “completely agree”. Cronbach's $\alpha$ revealed an internal reliability of .79.

The positive dimension (10 items) of *Fredrickson's emotions scale* (Fredrickson, 2009). The scale explores 5 positive emotions (amusement, pride, interest, joy and love/closeness), and 5 other emotions (amazement, gratitude, inspiration, love/closeness and serenity) which are particularly related to self-transcendence (Emmons, 2005). The response range is from 0-nothing- to 4- a lot. Overall scores of positive and self-transcendent emotions were computed. Cronbach’s $\alpha$ were .86 and .78, respectively.

According to hypotheses fifth and sixth, the following scales were only applied to participants in the Zen *meditation practice*.

*Social Identity* items (9), based on the Social Identity Theory of Tajfel and Turner (1986), which considers both aspects of social identity; *antecedents* and social identity *effects*, were used. Antecedents, such as the sense of belonging, identification, integration and fusion with the group - with the following items, ‘We felt proud to belong to this group’, ‘I had the feeling that the rest of the members became part of me’, ‘I felt very integrated into the group’, ‘I had the feeling that our group was different from other people’, and ‘I felt I had a lot in common with other group members’. Social identity *effects* consist of two aspects, the affective
level—with the following items, ‘I had the desire to interact with other members I didn’t know’, ‘I felt closer to the rest of the people’, and, ‘At that time people in my group seemed very interesting to me’, as well as the behavior level—with the following items, ‘I felt more willing to do something for a group member’, and ‘I felt more committed to the way of thinking and acting of my group’. Cronbach’s α was .88.

**Loss of self-consciousness** (3 items). One item was taken from the short version of the FSS (Garcia Calvo et al., 2008), ‘I felt totally absorbed by what I was doing and lost consciousness of myself’, and another one ‘I was not worried about the image I gave to others’ were used by taking into account the aspect of loss of public self-awareness, disinhibition and loss of self-image concerns. Both items emphasize the idea that when in the flow state individuals tend to forget about themselves. The third item was created stressing the social aspect of flow, that is the feeling of fusion with the environment or with the group (Csikszentmihalyi, 1990), ‘I felt transported out of me and part of the group’. These three items were created to operationalize the idea that the loss of self-consciousness when in flow during group activities is not only experiencing a mere lack of public awareness of the self, but also the actual merging of the self with the collective. Cronbach's α was .66.

**Procedure**

Participants were recruited by volunteer psychology undergraduate students from the University of the Basque Country. Recruiters were asked to interview individuals who would participate in a Catholic mass and in non-spiritual activities, and also to contact a Zen dojo and interview meditators after a Zen meditation practice. Participants responded voluntarily and anonymously to the questionnaires right after participating in the Catholic mass, the Zen meditation practice and the non-spiritual activities (after-lunch conversations and playing cards with friends).

**Data Analysis**

First, for analysis of differences between the levels of flow in each activity univariate analyses of covariance (ANCOVA), controlling for age and gender were used. Second, multivariate analysis of
variance (MANOVA) were performed considering the type of activity as independent variables and flow dimensions, 'high activation emotions' and 'self-transcendent emotions' as dependent variables. Lastly, to test the mediation hypotheses, indirect effects (unstandardized estimates are presented) were computed and their significance were tested, based on bootstrapped (unstandardized) confidence intervals using SPSS macro developed by Preacher and Hayes (2008).

**Results**

It is important to remark that flow means were above the expected mean and scores represent around 75% of the potential maximum score. Thus showing that the selected activities significantly prompt flow experiences. In order to contrast the first hypothesis a univariate analyses of covariance (ANCOVA) was performed, with age and gender as covariates, to determine whether flow experience was higher in interactive than in coactive group activities. As expected, statistically significant differences were found in flow level between the three activities ($F(2,128) = 9.80, p <.001, \eta^2_p=.13$, Figure 1). Pairwise comparisons were conducted in the three studies revealing that flow mean was higher in the Catholic mass ($M = 4.00, SD=.61, p<.001$) than in the Zen meditation practice ($M = 3.54, SD=.53, p <.001$), and flow also resulted higher in the non-spiritual activity ($M = 3.93, SD=.69$) than in Zen activity ($M = 3.54, SD=.53, p = .04$). No statistically significant differences were found in flow experience during the non-spiritual activity versus the Catholic mass.

Furthermore, a multivariate analysis of variance (MANOVA) was performed with nine dimensions of flow as dependent variables. Thus, a significant group effect was yielded, Wilks' Lambda $F_{(18, 266)} = 4.58, p<.001, \eta^2_p=.237$. Separate ANOVAs (see Table 1) revealed significant group effects for feedback ($F(2, 126) = 16.35, p <.001, \eta^2_p=.188$), challenge ($F(2, 126) = 10.37, p <.001, \eta^2_p=.13$), control ($F(2,126) = 7.21, p =.001, \eta^2_p=.093$), fusion ($F(2,126) = 3.87, p =.023, \eta^2_p=.052$) and concentration ($F(2, 126) = 14.30, p <.001, \eta^2_p=.169$). As Table 1 shows, all five effects confirmed the
above findings; participants in interactive activities scored higher for most flow dimensions, demonstrating statistically significant higher score for five out of the nine dependent variables. Tukey's post hoc comparisons showed the prediction to be fully supported for feedback, challenge, and concentration. For these two variables, indeed, the mean score of Catholic mass attendees and Sunday secular activities participants were significantly higher compared to the Zen meditation practice participants \((p<.001)\), but did not differ among each other. Regarding control and fusion, even though the mean scores were in the same direction as the others, Catholic Mass attendees again scored higher than the Zen meditation practice participants. The difference between Sunday secular activities and the Zen meditation practice could not be significantly discriminated by Tukey's post hoc comparisons.

As far as the second hypothesis, a multivariate analysis controlling age and gender of participants (MANCOVA) was performed to contrast whether 'high activation emotions' increased in interactive compared to co-active activities. Multivariate statistical significant differences in 'high activation emotions' demonstrated to be as expected, \(F(10,246)=.66, p<.001, \eta_p^2=.236\). Univariate significant differences were detected between the three groups in regards to emotions like amusement \((F(2, 126) = 14.693, p < .001, \eta_p^2=.19)\), interest \((F(2, 126) = 3.85, p = .024, \eta_p^2=.058)\) and love/closeness \((F(2,126) = 8.46, p < .001, \eta_p^2=.12)\).

The paired-difference analysis showed that Sunday secular activities \((M = 3.19, SD=.81)\) provided more amusement than the Catholic mass \((M = 2.23, SD=1.28, p = .003)\) and the Zen meditation practice \((M = 1.96, SD=1.03, p < .001)\), and also more interest \((M = 3.54, SD=.65)\) than participating in the Zen ceremony (respectively: \(M = 2.16, SD=1.04, p = .022; M = 3.06, SD=.79 , p = .007)\). Individuals participating in the Catholic mass \((M = 3.02, SD=.83)\) and Sunday secular activities
affirmed to experience more love and closeness than those attending the Zen ceremony ($M = 2.50, SD = .95; p = .022, p < .001$, respectively).

A MANCOVA contrasted the second and third hypotheses and confirmed that the three activities were different in the self-transcendent emotions elicited $F(10, 246) = 2.94, p < .003$. Univariate analysis controlling participants' age and gender showed significant differences on the level of hope among the three activities ($F(2, 126) = 3.33, p = .039, \eta^2 = .050$). Post-hoc contrast indicates that the Catholic mass generated more hope ($M = 2.84, SD = 1.22$) compared to the Zen meditation practice ($M = 2.42, SD = .93, p = .012$). However, inspiration was higher in the Zen meditation practice ($M = 3.06, SD = .91$) than in the Catholic mass ($M = 2.55, SD = 1.16, p = .028$). On the third hypothesis, although the feeling of serenity was higher in the Zen meditation practice, no statistically significant differences were found between the Zen meditation practice and the other activities. Furthermore, the fourth hypothesis was confirmed after showing that flow is strongly associated with positive and self-trascendent emotions, $r (141) = .47, p < .001$.

To contrast the fifth and sixth hypotheses, correlations and mediation analyses were performed. As expected, a positive correlation was found between social identity and flow, $r (50) = .56, p < .001$, 'high activation emotions', $r (50) = .58, p < .001$, and 'self-transcendent emotions' $r (50) = .55, p < .001$. In addition, and as predicted, social identity correlates with loss of self-consciousness during the activity, $r (50) = .56, p < .001$, and loss of self-consciousness correlates with flow $r (50) = .563 p < .001$. Taking into account that flow correlates with loss of self-consciousness, and that both variables are predictors of social identity, a mediation model between flow and social identity was created by introducing the loss of self-consciousness as a mediator variable (Figure 2). In order to assess the indirect specific effects the bootstrapping technique was utilized (Preacher and Hayes, 2008).

Insert Figure 2 about here
As shown in Figure 2, the direct effect of flow in the emergence of social identity is very high and significant $1.18, t = 8.80, p < .001$. Specifically, the effect of flow on the loss of self-consciousness is $1.03, t = 6.37, p < .001$, and the effect of the loss of self-consciousness in social identity is $31, t = 4.77, p < .001$. The model explains 44% of social identity's variance and shows a significant indirect effect of flow on social identity through the loss of self-consciousness of .32 (LLCI = 1.563, ULCI = .51), which confirms that this flow dimension partly increases the occurrence of the social identity.

**Discussion**

As opposed to Delle Fave et al. (2011b, p.263) findings, results reported above suggest that collective spiritual rituals represent a big opportunity for flow experience. Results show that flow is higher in the Catholic mass and in the non-spiritual activity than in the Zen meditation practice, confirming that interactive collective gatherings induce more flow than other similar co-active ceremonies. According to these results, in secular activities that are relevant to the individual—such as after-lunch conversations and meeting with friends to play cards—the experience of flow tends to be more significant. This is due to the fact that interactions with friends are freely chosen activities and are usually perceived as highly desirable, which tends to increase optimal experiences (Delle Fave et al., 2011b, p.121). On the other hand, in the Catholic mass, a spiritual celebration, flow is higher than in the Zen meditation practice, which may be due to the idiosyncrasies of this Buddhist ritual. Specifically, the Zen practice consists of a two hours (mostly silent) meditative training to address the diverse existential and emotional aspects of the personality that cause unnecessary suffering. In this spiritual activity, meditation and individual contemplation function as a strategy of self-regulation through attention focus (Sanabria, Chamizo, 2011). Consequently, the level of social interaction shows to be low and the interplay between the participants is not a prerequisite (Walker, 2010).

In regards to ‘high activation emotions’, these generally occur more intensely during the course
of interactive rituals (the Catholic mass and the non-spiritual activities) than in the co-active Zen meditation practice, which confirms what Delle Fave et al. (2011a, p.120) stated. More precisely, amusement is higher in the non-spiritual activity than in both spiritual situations (the mass and the Zen meditation practice) confirming the rewarding effects of socialization in individual's well being.

Nevertheless, in both the Catholic mass and the non-spiritual activity, emotions of love and closeness are more present. This result confirms that ‘positive relational emotions’ are elicited in contexts where social interaction plays an important role in the development of the activity, and is more dynamic than in other more individual-oriented rituals. In addition, the presence of these two emotions show an increased social support, which is inferred by the higher level of love and closeness, and that is common to collective gathering, either secular and/or religious. Lastly, the activation of these two emotions, in the context of a positive ritual, awakens a sense of unity and the feeling of belonging to a community, which confirms that religious rituals evoke feelings such as “love thy neighbour” (Haidt, 2006).

Regarding 'self-transcendent emotions', differences were found to a lower extent. The level of hope was surprisingly high in both spiritual and non-spiritual activities. On one hand, the Catholic mass induces a higher level of hope than the Zen meditation practice, but lower than non-spiritual activities. The reason may probably be that intimate non-spiritual activities -like family meals and playing cards with friends-, prompt individuals to feel part of something larger than the self, and along with closeness, these feelings of belongingness reinforce a positive view of the future. In other terms, hope and closeness are generated through collective gatherings, regardless if they are spiritual or non-spiritual, as Durkheim suggested.

Results also indicate that the Zen meditation practice provides more inspiration than the Catholic mass, but does not induce more serenity and calm as expected (Delle Fave, 2011a). This might be due to the fact that this ceremony requires a high level of concentration in breathing quietly during
almost two hours (the duration of the ceremony), which tends to be a significant challenge for the individual, that is the reason why flow indicates to be low in the Zen meditation practice. On one hand, the Zen meditation practice induces more inspiration since this demanding activity requires a challenging model of self-control, urges to do one's best, and when performed successfully, improves the individual's self-image. On the contrary, on Sunday Mass the attention is focused on religious martyrs, models that have limited impact on the individual' reality (Haidt, 2006; Emmons, 2005) and consequently activate less inspiration.

Furthermore, flow, positive emotions, loss of self-consciousness and social identity indicators correlate positively. This confirms that in the development a group activity, even in co-active rituals, flow and positive emotions are closely related. Thus, a group member that experiences flow feels more identified with the group, and a stronger emotional bond with the rest of the members. Additionally, according to mediation analysis, the loss of self-consciousness is the factor that partially mediates the relationship between flow and the emergence of social identity in the group members. Thus, social identity is essential for the group integration, since the loss of self-consciousness is accompanied by a sense of unity with the environment, ‘whether it is the mountain or a team' (Csikszentmihalyi, 1990). The result is not a mystical but a systemic fusion, as if the self expanded, and integrated in the environment to become part of the same system.

Lastly, these results also demonstrate the relation between flow and the social identity activation. When flow is experienced in a social context, participants lose consciousness of their individuality, prompting them to behave according to the group norms, and becoming an expression of the group by acquiring its characteristics. Thus, in flow, the loss of self-consciousness (or personal identity) creates a heightened sense of belonging (or social identity), and individual characteristics vanish in favor of the social self and group characteristics. When that occurs, individuals reach a state of synchrony and harmony. This creates a temporary alignment of their cognitions (aim, purpose, or representation of
what is to be achieved in the activity), the action and the external feedback received while performing the activity. The resulting subjective experience involves powerful positive emotional states, as well as a loss of consciousness of the self, a feeling that the self, the action and the people around become merged, and a consequent intense emotional experience of reward. It is flow that builds up this state of self-transcendence, or of ‘transcendence’ in the sense of this term itself. Indeed, psychological barriers that usually separate individuals from the outside world tend to dissolve the rigid boundaries of their identities, and therefore become merged with the group (Gómez et al., 2011). Ultimately, these ideas are not developed by the Social identity theory itself (Tajfel & Turner, 1986), but complement it by stressing the importance of flow and positive emotions in the process of social identification (Páez & Rimé, 2012).

In conclusion, the present study contributes to expand the research scope on flow theory, specifically, by further analyzing how the optimal experience operates in social contexts and its associations with positive emotions and other group variables. The main limitations of the results are related to the sample size and the fact that a better match of activities could reinforce comparisons. For example, if a Sunday Catholic mass was to be compared with a similar one like a Buddhist collective ritual around compassion (more typical in Tibetan Buddhism), where participants chant and make movements in synchronicity, flow would more likely be activated than in a Zen Buddhist meditation practice where participants are mainly focused on meditation and silence. It is also important to remark that in order to support causal claims, a longitudinal study analyzing dependent variables measured before and after the collective gatherings should be conducted. It important to remark that there is little prior research on how flow manifests in social contexts and its connections with group variables. Therefore, future research should approach the social conceptualization of flow and its relation with other psychological and social variables.
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Table 1

*Mean with different subscripts differed at the level of p < .05 according to Tukey post hoc*
Figure 1.

Estimated Marginal Means of Flow

Covariates appearing in the model are evaluated at the following values: $\text{AGE} = 45.8947$, $\text{SEX} = 1.5338$

*Figure 1*

Estimated marginal means of flow in each activity