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Shared flow and positive collective gatherings

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Título: Flujo Compartido y Reuniones Colectivas Positivas.

Resumen: Las reuniones colectivas o rituales promueven experiencias óptimas en circunstancias socialmente aceptables. Pocos estudios han examinado empíricamente la experiencia de flujo compartido por un grupo en situaciones colectivas. El presente estudio examinó la estructura multidimensional de la experiencia de flujo compartido y su papel en la explicación de los efectos positivos de la participación en reuniones colectivas ritualizadas sobre el bienestar personal y la cohesión social. En este estudio longitudinal (N = 550) los y las participantes de un festival local celebrado en San Sebastián (*Tamborrada*) respondieron a cuestionarios online en tres momentos diferentes. El análisis factorial confirmatorio apoyó una estructura compuesta por nueve factores de primer orden y un factor de segundo orden en una versión de la escala de 27 ítems. Además, los análisis de modelos estructurales controlando las puntuaciones previas al evento mostraron efectos indirectos de la participación en la *Tamborrada* a través de flujo compartido en el bienestar, en la eficacia colectiva, en la fusión de identidad y en la integración social. Esta investigación concluye que las reuniones colectivas positivas estimulan las experiencias de flujo compartido y por lo tanto, promueven el bienestar personal y la cohesión social. Se discuten las implicaciones de estos resultados y la utilidad de la *Escala de Flujo Compartido* en la investigación en psicología positiva.

Palabras clave: flujo compartido; reuniones colectivas; psicología positiva; bienestar; eficacia colectiva; fusión de identidad.

Abstract: Collective gatherings or rituals promote optimal experiences in socially acceptable circumstances. Few studies have empirically examined the experience of flow shared by a group in collective situations. The present research examined the multi-dimensional structure of shared flow experience and its role in explaining positive effects of participation in collective ritualized gatherings on personal wellbeing and social cohesion. In this longitudinal study (N = 550) participants of a local festival celebrated in San Sebastian (*Tamborrada*) responded to an online questionnaire at three different times. Confirmatory factor analyses supported a structure composed of nine first-order factors and one second-order factor with a 27-item version of the scale. Further, structural equation modeling analyses controlling for the pre-event scores showed indirect effects of participation in *Tamborrada* through shared flow on happiness, collective efficacy, identity fusion, and social integration. This research concludes that positive collective gatherings stimulate shared flow experiences and thus promote personal wellbeing and social cohesion. We discuss both the implications of these results and the utility of the *Shared Flow Scale* in positive psychology research.

Key words: shared flow; collective gatherings; positive psychology; wellbeing; collective efficacy; identity fusion.

Shared Flow and Positive Collective Gatherings

Over the last few years the interest in studying collective emotions and participation in collective emotional gatherings has significantly increased (Collins, 2004; von Scheve & Ismer, 2013). Growing empirical evidence confirms that participation in collective emotional gatherings might have major beneficial effects. At the individual level, it increases wellbeing and happiness; at the intra-group level, it boosts collective efficacy and collective self-esteem; at the social level, it enhances social cohesion and integration even with a broader group; and finally, at the symbolic level, it affects positive and self-transcendence beliefs about the benevolence of people and world in general (Páez, Rimé, Basabe, Włodarczyk, & Zumeta, 2015; Rimé, Páez, Basabe, & Martínez, 2010; Whitehouse & Lanman, 2014; Zumeta, Basabe, Telletxea, Amutio, & Bobowik, in press).

Simultaneously, studies have revealed that optimal experiences are particularly intense and enjoyable when they are performed collectively (Walker, 2010). In these situations, participants transcend their ego and get involved in a more complex action system that activates collective emotions (Csikszentmihályi, 1990). In this same line, there is an in-

creasing interest in the study of flow experiences from a collective perspective (Delle Fave, Massimini, & Bassi, 2013; Salanova, Rodríguez-Sánchez, Schaufeli, & Cifre, 2014; Zumeta, Oriol, Telletxea, Amutio, & Basabe, 2016). Shared emotional and behavioral processes are an important and exciting area of research in psychology and social sciences in general, where classic ideas like Durkheim's (1912) collective effervescence and emotional communion are examined with advanced research tools and more sophisticated macro psychological approaches (see von Scheve & Salmela, 2014 for a review of the collective emotions).

The present study integrates research on collective optimal experiences and the positive effects of participation in collective emotional gatherings. We aim to analyze shared flow resulting from the exposure to an intense social interaction experienced during ritualized gatherings, as well as its role in explaining effects of participation in such activities on personal and collective outcomes. To our knowledge, this is the first study that examines how collective emotional gatherings activate optimal experience, not only at the personal level, but also as a state of synchronized collective optimal experience, i.e., shared flow. Further, the present investigation examines shared optimal experience in the context of real-life collective emotional gatherings, while building on previous mostly experimental research in laboratory settings (see Páez, et al., 2015, study 4 for an experimental induction of flow).

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Collective Gatherings, Collective Effervescence and Shared Flow

The concept of flow has usually been studied from the individual perspective. In these terms, flow is a positive emotional state that occurs when a person is fully immersed and absorbed in an activity. It involves an optimal psychological state in which individuals get completely abstracted in the execution of the task, reaching a level of optimum performance. Flow is composed of nine dimensions divided into three interconnected stages: antecedents, experiences and effects (Jackson & Csíkszentmihályi, 2002). The antecedents of an optimal experience are clear goals (1), balance between challenge and individual's abilities (2), and a direct feedback (3). The outcomes that follow an experience of flow are the concentration on the task (4), the merging of action and awareness (5), and the consequent sense of control over the activity (6). Lastly, the effects are the loss of self-consciousness (7), the distortion of time (8) and the autotelic experience (9) (Schiepe-Tiska & Engeser, 2012). Existing research has confirmed the validity of a nine-dimensional model of individual flow (Delle Fave & Bassi, 2009; García Calvo, Jiménez, Santos-Rosa, Reina, & Cervelló, 2008; Jackson & Eklund, 2002). Importantly, flow is a multifaceted experience, and according to the existing evidence distinct facets of flow are correlated. In this regard, the current research aims to determine constituent components of flow and its relationships (Engeser & Schiepe-Tiska, 2012).

On the other hand, Csíkszentmihályi (1990, p. 432) stated that "participation in collective emotional gatherings can be seen as an opportunity to share experiences within a society". In this sense, Durkheim's concept of collective effervescence and the notion of flow are convergent (Csíkszentmihályi, 1990). Participants in collective gatherings and rituals that could afford flow usually display shared and focused attention, as well as coordinated collective behaviors (shared gestures, shared movements, moving and marching together) in such a way that every participant's mind, voice and body becomes attuned to the shared emotional state in the group and thus enacts behavioral synchrony. These preceding elements concur in stimulating participants' emotional arousal in such a way that they all experience and enact similar emotional states. Since emotions are easily mirrored, shared and spread among individuals, a situation of emotional synchrony develops, intensifying emotions and perceptions of similarity and unity (Collins, 2004; Páez et al., 2015; Rossano, 2012; Von Scheve & Ismer, 2013). What is central here is that individuals are gathered together, perceiving common feelings that are expressed through joint events. Group members need to be in communion, i.e., united in the same mind and in the same action (Páez et al., 2015).

Shared Flow, Positive Affect and Well-being

A cross-cultural study (Delle Fave et al., 2013) suggests that flow is a universally shared experience. The optimal ex-

periences are common: 85% of individuals report experiencing flow in one or more activities of daily life; of those, 54% chose structured sports activities, 52% physical activities, whereas 47% hobbies and games. Importantly, these states are expected to reinforce positive emotions and well-being. For instance, positive psychology scholars propose that optimal experience promotes eudaimonic well-being because individuals select and cultivate activities and relationships that contribute to their individual development and quality of life (Delle Fave & Bassi, 2009).

Some empirical evidence supports these ideas. With respect to the importance of attention and behavior synchrony, interviews with athletes revealed that in team sports, unison movements and shared focus of attention are critical to the experience of flow (Schiepe-Tiska & Engeser, 2012). As for the emotional intensity, other studies show that social flow, in interaction with others, provides more positive affect and enjoyment than solitary flow, presumably due to the fact that the emotions produced by interactive flow are amplified by social sharing (Mesurado, 2009; Walker, 2010).

Shared Flow, Collective Efficacy, and Group Identity

However, above positive outcomes for personal well-being, shared flow is primarily expected to strengthen group outcomes. One important positive group outcome of the experience of shared flow may be increased perception of group efficacy.

Collective flow occurs when a group is performing at the peak of its abilities (Sawyer, 2003) and implies a clear collective goal involving a challenge to the group in balance with the individual abilities as well as direct feedback in respect to the team behavior. Subsequently, this group experience that follows are the concentration combined outcome of the group task and performance, a sense of merging of action and awareness with the collective behavior, and the consequent sense control over the team activity.

Synchronization of activity among group members achieved in the state of collective flow may also contribute to higher perceived group efficacy. In the state of shared flow, all members of the group experience the same sensation of being absorbed by the activity, while the synchrony of movements and shared emotions increase the perceived collective efficacy. According to the sport psychology literature, synchronized movements and shared focus on attention among peers are essential elements of flow experience in the competition (Schiepe-Tiska & Engeser, 2012). At the same time, experimental results have found greater group cooperation when synchrony and shared intentionality were combined (Reddish, Fischer, & Bulbulia, 2013). Furthermore, several studies showed that while experiencing flow in sports people tended to enjoy more, obtain more satisfaction, and display more concentration and control over their performance (Csíkszentmihályi, 1990; Jackson & Csíkszentmihályi, 2002; Moradi, Nima, Rapp Ricciardi, Archer, &

García, 2014). In consequence, flow was shown to have very high impact on success (Nicholls, Polman, & Holt, 2005); affecting not only perceived collective efficacy but also team performance.

An empirical study found that shared flow is experienced when both collective challenges and collective skills are high, and also as a result of high collective efficacy beliefs as means to overcome potential obstacles. Moreover, beliefs in collective efficacy predict collective flow over time, both being related reciprocally (Salanova et al., 2014).

Finally, in parallel to effects on group efficacy, shared experience of flow is expected to strengthen group identity. Csíkszentmihályi (1990) states that loss of self-consciousness allows individuals to momentarily give up their normal identities and perform different roles. Similarly, the experience of collective flow involves a loss of consciousness of the “self”, a perception of fusion with other participants (Walker, 2010). In these sense, Páez et al. (2015) revealed that collective activities also generate an identity fusion with the group that is absent in individual activities.

Thus, we argue that collective optimal experiences, collective effervescence or emotional communion and behavioral and emotional synchronization are interdependent. During optimal experiences, particularly collective ones, participants transcend their ego while getting involved in a more complex action system (Csíkszentmihályi, 1990). In sum, shared flow during collective gatherings entail a number of positive psychosocial consequences among participants at individual level and also in terms of collective identities and social cohesion.

Overview, Aims, and Hypotheses of the Study

This study focuses on an important folk tradition in the city of San Sebastian-Donostia in the Spanish Basque Country. Annually, during a 24 hour-long celebration of St. Sebastian's Feast Day, the entire city is transformed with the sound of drums and barrels. Collective drum marches, parades accompanied by large groups of “drummers” march down the city streets. According to municipal records about 15,143 people distributed in 125 real-life folk groups marched at the time of this research.

The goal of this study was to test the structural validity of the *Shared Flow Scale* in the context of this social activity. We measured the nine dimensions of flow, using individuals as a unit of analysis, but with items that refer to group activity. First, we postulated a second-order factor of shared flow with the nine first order factors or flow components (Jackson & Eklund, 2002) (*Hip.1*). Second, we expected that shared flow during a collective gathering would predict an increase in personal well-being, collective efficacy, fusion of identity with the group, and social integration, after participation in the collective gathering (controlling for pretest scores of these criterion variables as baseline) in a *quasi* longitudinal study. Also, we argue that shared flow will mediate the effect of participation in folk festival on the increase in

the previously mentioned personal and collective outcomes (*Hip.2*).

Method

Participants

The convenience sample consisted of a total of 550 volunteers that completed the questionnaires at three time points (87% of all the recruited participants). The study participants were members of 52 different folk groups or *tamborradas* (CI = 95%, sigma = 1.96; Error = \pm 4.10). Males accounted for 50.7% of the sample. Age ranged between 18 and 90 ($M = 42.75$ years, $SD = 13.98$), most of them (89.2%) were residents of San Sebastian while the rest declared to reside in the surroundings of the city. The 57% of the sample were married, 53% had children, whereas 73% were employed and 11% unemployed.

Procedure

Town Hall officers and coordinators of folkloric companies (one per each *tamborrada* group) were contacted in order to recruit a sample of volunteers for this study among participants in the *Tamborrada* held on January 20th, 2013. Their participation in the study was voluntary, and each person selected for the sample was provided with relevant information about the purpose of the investigation. Email addresses of each participant were recorded and encrypted personal e-mails were used to collect data online (Survey Monkey®) at three measurement times. Four days before (T1) the *Tamborrada*, and again four days after it (T3), participants completed identical questionnaires measuring personal well-being, collective efficacy, identity fusion with the group, and social integration. Those questionnaires were used to examine the outcomes of participation in the celebration and to monitor baseline scores. Also, on the afternoon following the *Tamborrada*, all participants filled out a short questionnaire that assessed their level of involvement in the activity and their perception of experience of shared flow (T2).

Measures

Measurement during the event (T2)

Level of involvement. Participants were asked to evaluate their involvement in the social activity regarding five different aspects: importance, intensity, satisfaction, involvement and pride (Zumeta, et al., in press). For example: “How intense was your participation in the *Tamborrada*? The rank of response was from 1 (*not at all*) to 7 (*very much*). Cronbach's α was .91.

Shared flow. The scale measuring shared flow originally derived from the Spanish version of Jackson and Marsh's Dispositional Flow Scale (1996) and its adaptation by García Calvo et al., 2008. This scale was originally developed by

Zumeta et al. 2013, was applied by Páez et al., 2015 and Zumeta et al., 2016. The scale comprises 27 items distributed across nine dimensions: (1) Balance between challenge and skill; (2) Clear proximal goals; (3) Unambiguous and direct feedback; (4) Action-awareness merging; (5) Focused concentration on the current activity; (6) Sense of control over one's actions; (7) Loss of self-consciousness; (8) Loss of time awareness or time acceleration; (9) Autotelic experience. The rank of response was from 1 (*not at all*) to 7 (*very much*). Cronbach's α for total score was .95.

Pre-event (T1) and post-event (T3) measures

Personal well-being. The Pemberton Happiness Index (PHI, Vázquez & Hervás, 2012) contained 10 items, measured against an 11-point scale ranging from 0 (*strongly disagree*) to 10 (*strongly agree*) to calculate general, eudaimonic, hedonic, and social well-being (e.g. "I have done something, I really enjoyed"), yielding a single well-being index. Cronbach's alpha coefficients were excellent, with a .93 for pre-*Tamborrada* (T1) and α .94 for post-*Tamborrada* measurements (T3).

Collective efficacy. A short 4-item version was adapted from the CEQS-Collective Efficacy Questionnaire for Sports (Martínez, Guillén, & Feltz, 2011), to assess the respondent's perception of group efficacy (e.g. "Showed more abilities than other groups"). The items were placed on an 11-point scale ranging from 0 (*not at all*) to 10 (*very much*). Reliability coefficients were .91 at the pre-event and .92 at the post-event evaluation.

Identity fusion. Fusion with the *Tamborrada* group was measured using the 7-item verbal fusion scale (e.g., "I am one with my group") (Gómez et al., 2011). Respondents indicated the degree to which each statement reflected their relationship with their *Tamborrada* group on scales ranging from 0 (*strongly disagree*) to 6 (*strongly agree*). Cronbach's alpha coefficients were α = .93 for pre-*Tamborrada* and α = .92 for post-*Tamborrada* measurements.

Social Integration. The 10-item Feeling of Relatedness Scale developed by Richer and Vallerand (1998) (ESAS) assessed participants' perception of social integration (e.g. "In my relationships with my work colleagues, I feel supported"). The rank of responses varied from 0 (completely disagree) to 10 (*completely agree*). The scale yielded Cronbach's alphas of .96 and .98 in measurements before and after the *Tamborrada*, respectively.

Statistical analysis

The shared flow scale was analyzed and descriptive statistics were reported. First, Confirmatory Factor Analysis (CFA) was used to contrast structure of shared flow using maximum likelihood estimation in Mplus 6.11 (Muthén & Muthén, 2010). To evaluate model fit, in addition to the chi-squared test, the following indexes were used: the CFI (Comparative Fit Index, values above .90 are considered acceptable), as well as the RMSEA (Root Mean Square Error of Approximation, values less than .07 indicate an adequate fit) (Chen, 2007; Steiger, 2007). Second, in order to test whether involvement in the activity explains the enhancement of different positive outcomes, and whether this effect is mediated by flow, we applied structural equation modeling (SEM) with ML estimation. We computed indirect effects (standardized estimates are presented). Considering the lack of multivariate normality, we applied the bootstrap method (Efron & Tibshirani, 1993). Standard errors and confidence intervals based on a bootstrap sampling distribution were calculated for each parameter or statistics. If the values of the estimated effect within the confidence interval include zero, this indicates a non-significant effect. In the presentation of the results, the standardized solution is shown. All the coefficients represented by continuous arrows in the graphs are statistically significant, while the dashed lines indicate effects that are not statistically significant for $p < .05$.

Results

Descriptive Analyses

Table 1 shows the descriptive statistics of the 27 items from the shared flow scale, including the means and standard deviation for each item. All mean scores were higher than 4.00 (on a scale from 1 to 7), which shows that participants experienced relatively high levels of shared flow during the activity. Items with higher means were those corresponding to the dimensions of balance between challenge and skill (SF9), clear goals (SF12) and autotelic experience (SF27). Consequently, items with lower mean scores corresponded to the dimensions of action-awareness merging (SF11, SF20) and temporary distortion (SF26).

Table 1. Shared Flow Scale (SFS): items, means and standard deviations.

		<i>M</i>	<i>SD</i>
Balance - challenge and skill			
SF1	<i>Sabíamos que nuestras capacidades nos permitían hacer frente al desafío que se nos planteaba.</i> [We knew that our skills would allow us to meet the challenge we were faced with.]	5.74	1.48
SF10	<i>Nuestras habilidades estaban al mismo nivel de lo que nos exige la situación.</i> [Our abilities matched the high challenge of the situation.]	5.82	1.19
SF19	<i>Hemos sentido que éramos lo suficientemente buenos para hacer frente al reto o dificultad de la situación.</i> [We felt we were competent enough to meet the high demands of the situation.]	5.78	1.25
Clear goals			
SF3	<i>Nuestros objetivos estaban claramente definidos.</i> [Our goals were clearly defined.]	5.83	1.26
SF12	<i>Estábamos seguros de lo que queríamos hacer.</i> [We knew clearly what we wanted to do.]	6.02	1.19
SF21	<i>Sabíamos lo que queríamos conseguir.</i> [We knew what we wanted to achieve.]	5.83	1.23
Feedback			
SF4	<i>Hemos tenido realmente claro que lo estábamos haciendo bien.</i> [It was really clear to us that we were doing well.]	5.79	1.20
SF13	<i>Sabíamos lo bien que lo estábamos haciendo.</i> [We were aware of how well we were performing.]	5.78	1.13
SF22	<i>Estábamos seguros de que, en ese momento, lo estábamos haciendo muy bien.</i> [We were sure that in that moment we were doing really good.]	5.78	1.16
Action - awareness			
SF11	<i>Nos parecía que todo estaba sucediendo automáticamente.</i> [We felt that things were happening automatically.]	4.17	1.81
SF20	<i>Ejecutábamos automáticamente.</i> [We performed automatically.]	4.08	1.78
SF 2	<i>Hacíamos las cosas espontánea y automáticamente.</i> [We were doing things spontaneously and automatically.]	4.63	1.67
Concentration			
SF5	<i>Nuestra concentración estaba dirigida a lo que estábamos haciendo.</i> [Our concentration was focused entirely on what we were doing.]	5.66	1.29
SF14	<i>Estábamos totalmente centrados en lo que estábamos haciendo.</i> [We were completely focused on the task at hand.]	5.60	1.27
SF23	<i>Nos hemos sentido totalmente absorbidos por lo que hacíamos.</i> [We felt totally absorbed by what we were doing.]	5.49	1.47
Sense of control			
SF6	<i>Hemos compartido un sentimiento de control total.</i> [We shared a feeling of total control.]	5.34	1.37
SF15	<i>Hemos sentido que podíamos controlar lo que estábamos haciendo.</i> [We felt that we could control what we were doing.]	5.74	1.25
SF24	<i>Hemos sentido un control total de nuestros cuerpos.</i> [We felt in total control of our bodies.]	5.43	1.39
Loss of self			
SF7	<i>No nos importaba lo que los demás pudieran pensar de nosotros.</i> [We were not concerned with what others may have been thinking of us.]	4.66	1.97
SF16	<i>No nos preocupaba lo que otros pudieran estar pensando de nosotros.</i> [We were not worried about what others may have been thinking of us.]	4.44	2.04
SF25	<i>No estábamos preocupados por la imagen que dábamos a los demás.</i> [We were not worried about the image we were presenting to others.]	4.27	1.98
Distortion of time			
SF8	<i>Nos parecía que el tiempo pasaba más rápido o más lento.</i> [We felt that time was altered either speeded up or slowed down.]	5.40	1.39
SF17	<i>El paso del tiempo nos ha parecido diferente a lo normal.</i> [We felt that the way time passed was different from normal.]	5.19	1.53
SF26	<i>Hemos sentido como si el tiempo se parase.</i> [We felt like time stopped while we were performing.]	4.28	1.91
Autotelic experience			
SF9	<i>Nos ha gustado lo que estábamos haciendo.</i> [We really enjoyed what we were doing.]	6.40	0.94
SF18	<i>Todos hemos encontrado la experiencia que hemos tenido juntos muy valiosa y reconfortante.</i> [We all found the shared experience extremely valuable and rewarding.]	5.77	1.19
SF27	<i>La experiencia grupal nos ha dejado una buena impresión, un buen sabor de boca.</i> [The group experience left us with a good impression, a good taste].	6.02	1.18

Note. *N* = 550.

Shared Flow Scale: Confirmatory Factor Analysis

Based on the theoretical and empirical work with individual flow scales, four alternative models were specified: (1) a one-factor baseline model; (2) a three first-order correlated factor model separating items measuring conditions for flow, the experience of flow and the consequences resulting from the experience; and (3) the a model composed of one second-order and nine first order-factors, where each first-order factor was specified to load on a single second-order factor representing general concept of shared flow. Models were compared with each other in order to determine which provided a better fit to the data.

Table 2 presents the fit indices for the specified models. Chi-square difference tests and global fit indices indicated that the Model 3 (Nine factors and one second order factor) provided a better fit to the data than the single (Model 1), or three-factor (Model 2) models. Model 1 and 3 provided very poor fit to the data and the ΔCFI value was significant. In consequence, these models were rejected. On the other hand, all global fit indices for Model 3 were satisfactory (*Hip. 7*).

The standardized loadings for the higher order nine-factor model were high and statistically significant for all first-order factors, (*Bs* ranged between .67 and .90, *ps* < .001). The factorial scores of second-order factor on the nine latent factors or facets showed that the highest scores were obtained for the dimensions of clear goal, balance between challenge and skill, direct feedback, high concentration, strong sense of control, and autotelic experience. Nevertheless, distortion of time showed moderate factor score, and merging of action and loss of self-consciousness showed low scores.

Table 2. Fit Statistics for Alternative Factor Models of the Shared Flow scale.

	χ^2	<i>Df</i>	CFI	RMSEA
Model 1	2634.194 *	324	.738	.107
Model 2	2438.079*	321	.760	.103
Model 3	753.127*	312	.950	.048

Note: *N* = 619. Model 1 = One factor (1 first order factor model); Model 2 = Three factors (3 first order correlated factor model); Model 3 = Nine factors and one second order factor (9 first order and 1 higher order factor model); CFI = Comparative Fit Index; RMSEA = Root Mean Square Error of Approximation. * *p* < .01.

Mediation Effects: the Role of Shared Flow in Explaining Effects of Participation in a Folk Festival on Personal and Group Outcomes

Table 3 shows descriptive statistics, means, and standard deviation for each of the study variables, as well as the bivariate correlations. Missing values for each variable reached values below 5%. As can be seen in Table 3, all variables correlated significantly and positively. The size of the correlation coefficients indicates the presence of medium positive associations between the studied variables. The rank of correlations fluctuates from the lowest correlation between level of involvement with well being, $r = .29$, $p < .001$, to the highest found between level of involvement and shared flow, $r = .58$, $p < .001$.

Table 3. Descriptive statistics and Correlations of the variables.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5
1. Level of involvement	6.22	0.85					
2. Shared flow	4.84	0.78	.58**				
3. Well-being	4.46	1.60	.29**	.35**			
4. Collective efficacy	7.35	1.78	.46**	.55**	.42**		
5. Identity fusion	4.68	1.25	.43**	.46**	.33**	.56**	
6. Social integration	5.48	1.01	.38**	.39**	.50**	.37**	.47**

Note. *N* = 550; Means, standard deviations and correlations were calculated for computed variables. ** *p* < .001.

Further, we tested indirect effects of participation in the folk festival on personal and group outcomes after the event mediated by the experience of shared flow. Accordingly, we estimated four different empirical SEM models where the relationship between level of involvement and personal well being, collective efficacy, fusion of identity with the *Tamborrada* team, and social integration after the event (i.e., controlling the pre-test scores), was hypothesized to be explained by shared flow

In the first model (Figure 1) we tested indirect effect of level of involvement on personal well-being via shared flow. The model provided a good fit [$\chi^2(551, 1252) = 3343.960$, $p < .001$, CFI = .917, RMSEA = .055]. The relationship between level of involvement in *Tamborrada* and the increase of well-being was fully mediated by the experience of shared flow during the event ($B = .14$, $SE = .02$, $Est./S.E. = 5.98$, $p < .001$, 99% CI [0.082, 0.205]) (*Hip. 2*).

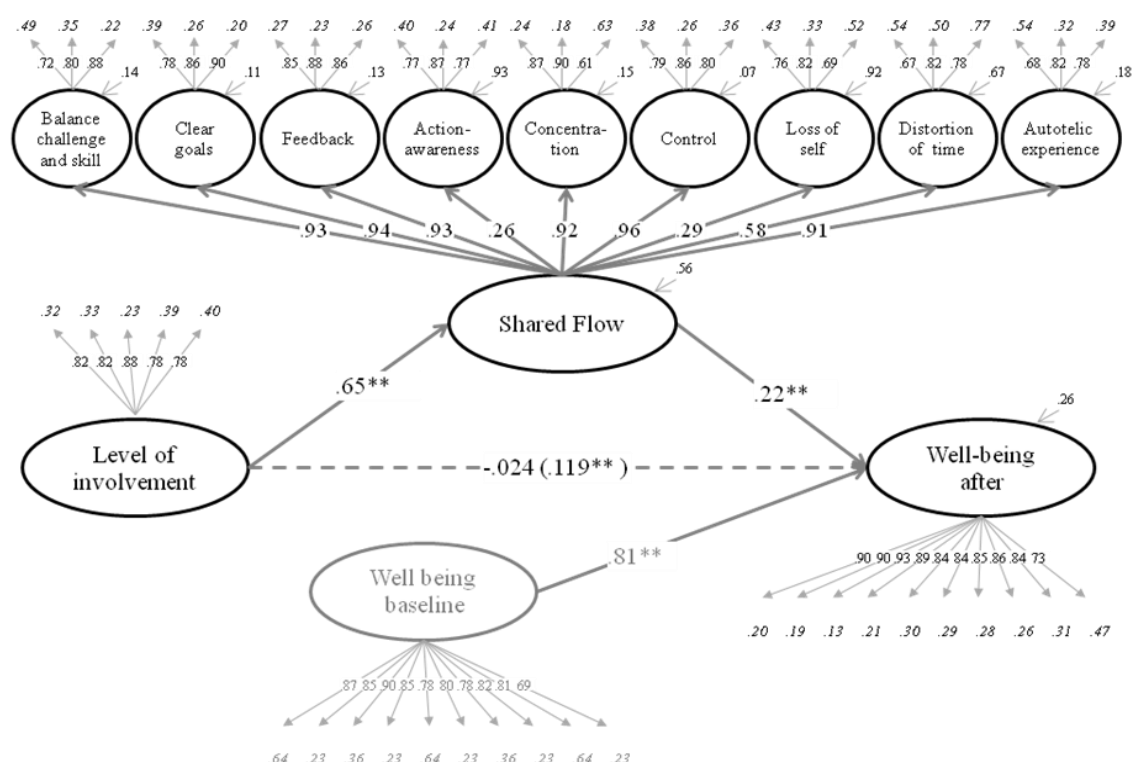


Figure 1. Results of SEM analysis: relationship between level of involvement and well-being mediated by shared flow controlling for pretest scores.

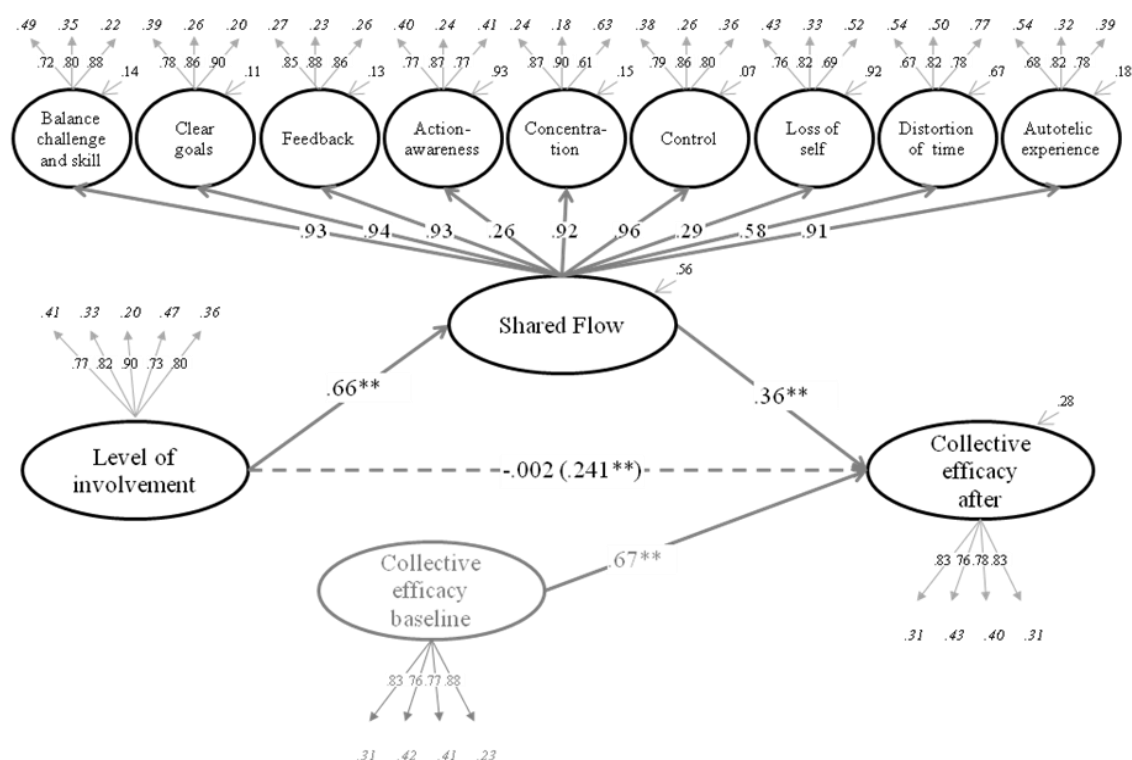


Figure 2. Results of SEM analysis: relationship between level of involvement and collective efficacy mediated by shared flow for pretest scores.

The second model (Figure 2) tested whether shared flow mediated the effect of the involvement on collective efficacy.

The model fit was satisfactory [$\chi^2(551, 719) = 2083.063, p < .001$, CFI = .917, RMSEA = .059], and confirmed that the

effect of level of involvement on perception of collective efficacy was explained by the experience of shared flow ($B = .24$, $SE = .03$, $Est./S.E. = 6.95$, $p < .001$, 99% CI [.340, 0.753]).

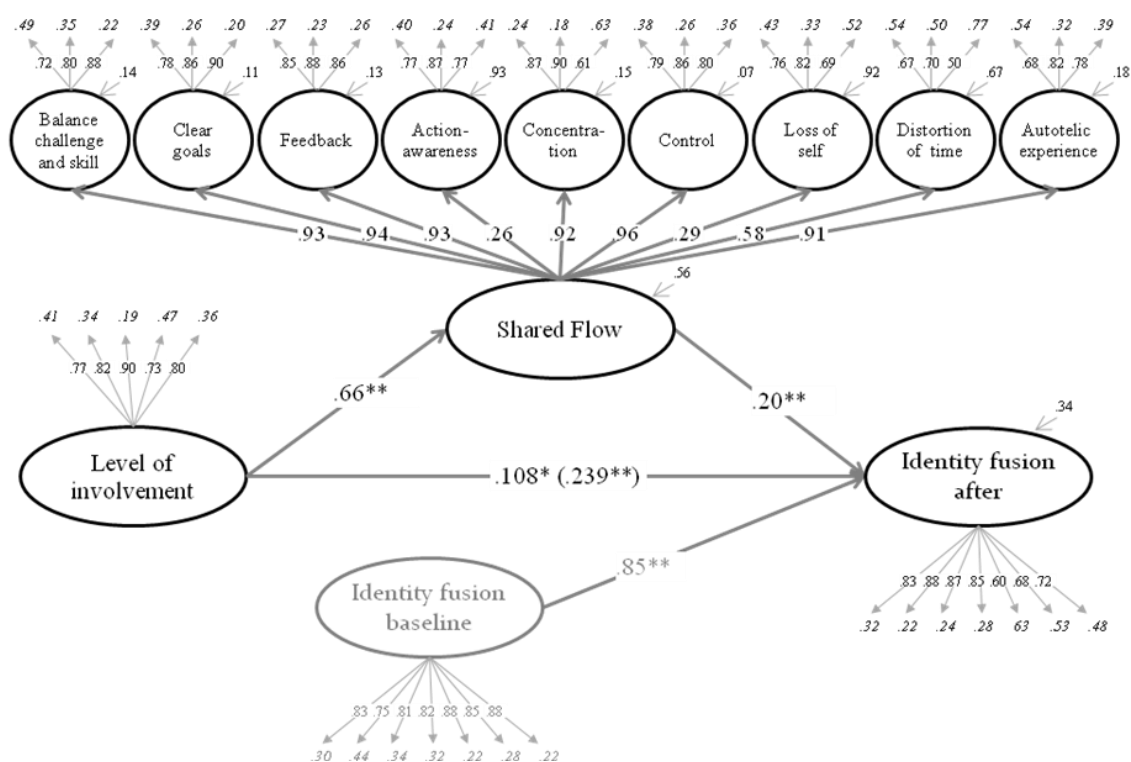


Figure 3. Results of SEM analysis: relationship between level of involvement and identity fusion mediated by shared flow for pretest scores.

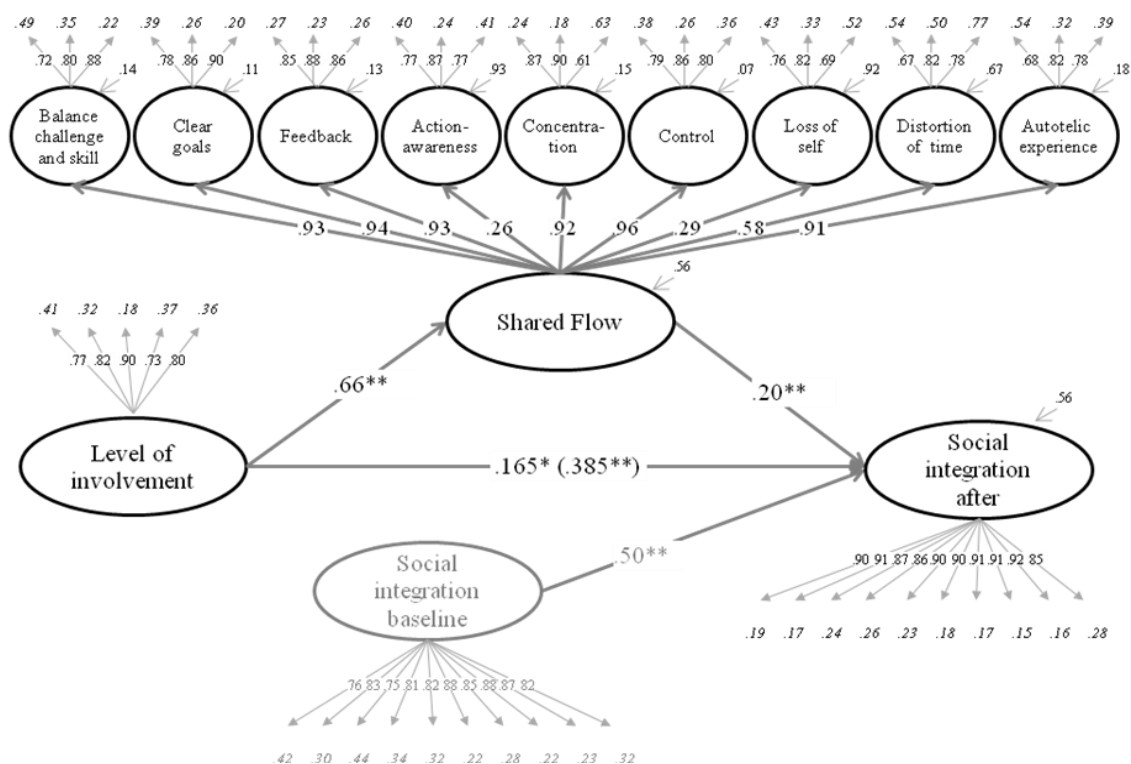


Figure 4. Results of SEM analysis: relationship between level of involvement and social integration mediated by shared flow for pretest scores.

Subsequently, we tested a similar meditational model for identity fusion (Figure 3). Examination of this model showed adequate fit to the data [$\chi^2(551, 968) = 2729.437, p < .001$, CFI = .913, RMSEA = .057]. The results indicated that there was a direct significant and positive effect between the studied variables, and that the relationship between the level of involvement and the increase in identity fusion was mediated by the shared flow experience ($B = .13, SE = .03, Est./S.E. = 4.57, p < .001, 99\% CI [0.057, 0.205]$).

The fourth model, tested the effects of the level of involvement on social integration via shared flow, also showing a satisfactory fit to the data [$\chi^2(551, 1256) = 3455.579, p < .001$, CFI = .914, RMSEA = .056]. Again, the relationship between the level of involvement and the increase of social integration was mediated by the experience of shared flow ($B = .13, SE = .03, Est./S.E. = 4.18, p < .001, 99\% CI [0.064, 0.280]$).

In sum, our results confirmed that the relationship between the level of involvement and well-being, collective efficacy, identity fusion, and social integration were mediated by the experience of shared flow.

Discussion

Given that flow experiences was usually studied from the individual perspective (Jackson & Csíkszentmihályi, 2002), this research address highlights the importance of analyzing flow as a collective phenomena, which may occur during collective gatherings under socially desirable forms (Csíkszentmihályi, 1990). A number of recent studies have proposed that collective optimal experiences favor social cohesion, well-being (Páez et al., 2015; Rimé et al., 2010; Tewari, Khan, Hopkins, Srinivasan, & Reicher, 2012), and identity fusion (Whitehouse & Lanman, 2014). Still, scarce research has systematically and empirically examined the experience of flow shared by a group in collective situations. To our knowledge, this is the first study that analyzes shared flow resulting from the exposure to an intense social interaction experienced during a collective emotional gathering. In this regard, Durkheim's concept of collective effervescence and the notion of flow are convergent (Csíkszentmihályi, 1990).

The first aim of the present study was to investigate the factorial structure of the *Shared Flow Scale* developed on the basis of the Spanish version of the *Dispositional Flow Scale* (García Calvo et al., 2008). CFA showed that the best and most parsimonious model was represented by a single second-order factor and nine first-order factors. The result confirmed that shared flow is a multifaceted experience, with a common variance that unifies the construct of flow, in line with previous empirical evidence concerning individual flow (Jackson & Eklund, 2002).

At the same time, the findings of the study have revealed the differential importance of the nine flow facets in this folk ritual. During the participation in *Tamborrada* antecedents or conditions of flow experience were very high: that is, participants of *Tamborrada* had a clear goal, perceived a balance be-

tween challenge and skill, and received a direct feedback on their performance. Participants were members of *Tamborrada* teams that have been training all year round, in order to be prepared for the big festival full of synchronized and coordinated activities as marching, singing, and drumming together. Accordingly, participants declared high levels of concentration the team task and a strong sense of control over the activities which were taking place during the event. As a whole, the participation was perceived as an autotelic experience, as participants enjoyed what they were doing. Nevertheless, it is important to bear in mind that not all the facets of shared flow were equally emphasized as relevant aspects of the experience of shared flow during participation in folk festival. First, the dimension of distortion of time was only moderately associated with the total shared flow. Moreover, the dimensions of merging of action and awareness and loss of self-consciousness were also less pronounced. These results contribute to clarification of the relevant importance of different domains of shared flow components in different social settings (Engeser & Schiepe-Tiska, 2012).

Secondly, this study examined positive effects of participation in folk festival and personal and collective changes through the experience of shared flow. The results confirmed indirect effects of the involvement in the activity on the increase in well-being, collective efficacy, fusion of identity with the group, and social integration via shared flow. Interestingly, these effects were stronger for collective efficacy than for well-being, fusion with the *Tamborrada* team or social integration. In these sense, our results are in line with the findings of previous studies that have shown that the experience of shared flow experiences was associated with efficacy beliefs (Salanova et al., 2014) and increased collective efficacy beliefs (Páez et al., 2015).

Furthermore, as already detailed above, participants shared clear collective goals, perceived a balance between challenge and skill, received a direct feedback about the team behavior, and were highly concentrated on the group task and performance, with a strong sense of control over the activity. These were shown to be conditions to perceive high collective efficacy in other group tasks (Csíkszentmihályi, 1990; Jackson & Csíkszentmihályi, 2002; Moradi et al., 2014; Nicholls et al., 2005). In relation to other positive effects, participation in folk festivals, through the experience of shared flow, predicts an increment in well-being. As Delle Fave & Bassi (2009) argues, individuals engage in different optimal activities that influence their individual development and improve their quality of life. At the same time, shared flow experiences imply that individuals enjoy doing a specific activity which results in positive affects and happiness (Landhäuber & Keller, 2012).

On the one hand, intense participation and shared flow reinforced fusion with the *Tamborrada* group. When experiencing a state of flow, members of a group concurrently experienced a stronger emotional bond with their coparticipants. Beyond the immediate effects on the group-team, intense participation in folk festival and the shared flow trig-

ger social integration like perceiving social support outside the specific group of *Tamborrada*. In this regard, optimal experience in social contexts contributes to building a sense of community and social solidarity (McGinnis, Gentry, & Gao, 2008; Sato, 1998).

However, it is fair to acknowledge that this study presents some limitations that should be addressed in future research. The first limitation is a short period of time between longitudinal measures. In the case of our study, and considering the specificity of the evaluated ritual (*Tamborrada*), we necessarily limited the longitudinal assessment of the outcome variables to four days after the celebration took place. Thus future research should intend to determine how long similar effects may last after the collective gathering has dissolved. Previous studies suggested that such effects are limited in time, with one week for common collective events (Páez et al., 2015; Rimé et al., 2010). The experimental mortality of longitudinal studies is another important limitation of the present investigation, although the loss of participants was low for a study of this nature.

Regarding practical implications, our study suggests that the experience of flow and collective emotions generated during an interactive social situations might be seen as even more important than individual experience of flow. When people are involved in collective participation they become intimately involved with co-present participants. Therefore, their emotional states are being constantly affected and reciprocally enhanced producing communal synergy which might then translated into enhanced feelings of belonging and cohesion, with substantial positive effects for both individuals and communities. Regarding the specific conditions that facilitate the experience of shared flow, clear goals, feedback and balance between skills and challenge could be considered as central facets that produce an autotelic experience. Therefore, we argue that in order to induce specific positive outcomes, it is important to generate conditions which could facilitate a high level of involvement and stimulate a strong shared flow. According to our findings, this synchronized and coordinated state of flow helps specifically to increase well-being and collective efficacy. Additionally, although to a lower extent, it enhances identity fusion, and

social integration. In other terms, interactive social optimal experiences appear to have important impact on wellbeing and collective efficacy.

Conclusion

According to Csikszentmihályi (1990), the optimal experience in social circumstances expands the flow. This study brings to light the structure and facets of shared flow as a result of the participation in a collective gathering. Distinctive aspects of the present study are the longitudinal character of the data (with measurement at three time points), and the participation of real-life folk groups or *Tamborradas*. The results confirm that shared flow is a multifaceted experience represented by the second order factorial model with nine primary facets with differential contributions. Shared flow is specifically constructed by a clear goal, perceived balance between challenge and skill, direct feedback, high concentration/focus on the team task, a strong sense of control over the activity, and autotelic experience. In addition, the current study shows that participation in collective emotional gatherings strengthens shared emotions that foster positive effects at both individual and collective levels, especially in terms of collective efficacy.

Together, our results support Durkheim's theory (1912) and highlight that social rituals, festivals, and worship celebrations that periodically gather individuals together fulfill the function of recreating the social group and reviving shared beliefs through the experience of shared flow.

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