

The virtues of collective gatherings: A study on the positive effects of a major scouting event

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Abstract

The present study addresses, in a highly ecological setting, the short- and long-term psychosocial consequences of participation in a major scouting event. Using a quasi-longitudinal design comprising three measures taken over two-and-a-half months (i.e., baseline level; within the 24 hr following the event; 10 weeks after the gathering), we show that participation in this collective gathering was followed by a series of positive effects at the psychosocial level. More precisely, we noticed an increase in the scout's levels of social integration, and individual and social well-being after their participation in the gathering. Further, in line with a central tenet of the neo-Durkheimian model of collective processes, the results stress the key role of perceived emotional synchrony in the prediction of the outcomes. Higher perceived emotional synchrony during the gathering was associated with stronger in-group identification, identity fusion, pride, openness to experience, self-esteem, positive affects, and adhesion to specific scouting values. Finally, we found that the effects of participation lasted more than a few days and were predicted by the level of perceived emotional synchrony. These findings are the first to show that positive effects of participation in a collective event last for at least ten weeks.

1 | INTRODUCTION

In social life, individuals recurrently converge on places where they gather. The spectrum of such collective gatherings is wide. It includes events as varied as religious rituals, funeral or wedding ceremonies, celebrations, commemorations, trials, festivals, rock or classical music concerts, theater performances, film screenings, fan gatherings at sports events or citizens' gatherings at political events.

1.1 | Collective gatherings and interpersonal synchronization: shared outcomes

In the last decade, psychosocial outcomes of collective gatherings began to be subjected to empirical investigation. Studies showed that participation in a collective event was linked to a cascade of positive effects, namely an increase in social integration (Kanyangara, Rimé, Philippot, & Yzerbyt, 2007; Páez, Basabe, Ubillos, & Gonzalez, 2007),

identity fusion with others (Swann, Jetten, Gómez, Whitehouse, & Bastian, 2012), positive affects (Neville & Reicher, 2011), self-esteem (Páez et al., 2007; Rimé, Kanyangara, Yzerbyt, & Páez, 2011), and prosociality (Fischer et al., 2014).

Surprisingly, over the same decade, very similar psychosocial effects have been identified in a field of research that is entirely independent of the previous one, namely the study of the consequences of interpersonal synchronization. In one of the first empirical studies of synchronization, Wiltermuth and Heath (2009) showed that participants who had acted in synchronization with others then behaved more cooperatively in financial games, compared to participants with control conditions. Wiltermuth and Heath (2009) also showed that muscle force is not a necessary condition to produce such an effect. Singing together was enough to produce it. A recent meta-analytical review of this literature revealed that inducing interpersonal synchronization (i.e., motor movements (active or passive) or synchronized sensory stimulation) among participants positively affects them with regard to cooperation, prosocial

orientation, positive affects, or to their feeling of fusion in the group (for a review, see Rennung & Göritz, 2016)¹. In addition, it was found that interpersonal synchronization also entails positive effects for participants, such as increased pain tolerance, (Cohen, Ejsmond-Frey, Knight, & Dunbar, 2009; Sullivan & Rickers, 2013; Sullivan, Rickers, & Gammage, 2014), enhanced self-esteem (Lumsden, Miles, & McCrae, 2014), or reduction in work stress (Rennung & Göritz, 2016). This therefore raised the question as to what could be shared between collective gatherings and interpersonal synchronization to produce the same outcomes. The views developed by Emile Durkheim (1912) in his classical analysis of religious rituals provided important elements to answer this question.

1.2 | A Durkheimian approach to collective gatherings

Durkheim was preoccupied with explaining what keeps individuals together in a society. He thought that religion played a central role in it. He drew on ethnographic descriptions of religious practices in ancient societies such as the Aborigines of Australia to identify what such practices have in common. In this way, he developed a theory of the effects of collective gatherings that was then extended to nonreligious collective practices. According to Durkheim (1912), when individuals gather, their consciences reflect each other and participants' emotions stimulate and are stimulated by those of other participants. These circular processes lead to the development of a feeling of exaltation in the assembly or, as Durkheim called it, a "collective effervescence." Participants then experience feelings of unity and similarity. In this state of emotional communion, the importance they attach to themselves is reduced. Conversely, their sense of belonging to the group and their faith in collective beliefs are strengthened. They then return to their individual lives with feelings of strength and trust. In short, according to Durkheim, conditions favoring collective emotional synchronization reduce participants' individual envelope and increase their openness to the social context.

While drawing on Durkheim's reasoning, current experimental designs have emphasized the dimensions of social synchronization that are at play in collective gatherings (Collins, 2004; Páez & Rimé, 2014). Participants converge on a specific place at a specific time, sharing the same concerns and goals. At this specific site, they share similar cognitive and emotional responses to group symbols on display (flags, emblems, leaders' figures), and they focus their attention on the same object (podium, stage, screen, altar, speaker, officiant). Participants implement synchronized behaviors (shared gestures, shared movements, moving or walking together), accompanied by coordinated expressive manifestations (singing together, shouting, saying words or sentences together, making music, dancing, etc.). The mental, vocal, and physical

activity of each participant is in harmony with that of the group. Last but not least, all these elements stimulate the emotional excitement of the participants so that they experience similar emotional states as Durkheim originally emphasized (Collins, 2004; Páez & Rimé, 2014).

These considerations led Páez, Rimé, Basabe, Włodarczyk, and Zumeta (2015) to undertake direct empirical testing of Durkheim's (1912) proposals on the effects of collective gatherings. Four studies, two of which were correlational, one semi-longitudinal and one experimental, were conducted on either positively (folk marches) or negatively valenced (protest demonstrations) gatherings. In all four studies, similar dependent variables derived from the effects described by Durkheim were measured: collective identity, self-esteem, and adherence to shared beliefs. The results of the four studies confirmed that collective gatherings reinforce collective identity, group identity fusion and social integration. They also showed that participation in such gatherings increased self-esteem, a sense of personal and collective effectiveness, and positive affects. Participation was also found to strengthen social beliefs shared by the group. Furthermore, in line with Durkheim's emphasis on the role played by shared emotions in the collective synchronization process, the results highlighted the key role of perceived emotional synchrony in the prediction of the outcomes. Thus, greater perceived emotional synchrony was associated with stronger identity fusion, more intense positive emotions, higher self-esteem, and greater adherence to shared beliefs.

In summary, studies on synchronization, be it during collective gatherings or using interpersonal experimental settings, point to the positive effect of synchronization on social integration (i.e., feeling of fusion with the group, ease of social interaction, mutual attraction, liking, closeness, collective identity), empowerment (i.e., self-esteem, personal and collective effectiveness, openness to others and to experience), and adherence to shared beliefs (i.e., concerns evoked by the organization of a rally). Since the publication of Páez et al.'s research (2015), there have been numerous other studies that have further shown the relevance of the neo-Durkheimian model of collective processes in the study of collective gatherings (see e.g., Carnes & Lickel, 2018; Pelletier, 2018; Rennung & Göritz, 2016; Van Kleef & Fischer, 2016; Włodarczyk et al., 2016; Zumeta, Basabe, Włodarczyk, Bobowik, & Páez, 2016a; Zumeta, Oriol, Telletxea, Amutio, & Basabe, 2016b). The body of knowledge about the effects of collective gatherings is rapidly growing and Durkheim's seminal ideas are gaining increasing empirical support. Nevertheless, so far, no study has rigorously investigated the effects of collective gatherings both in a highly ecological context and over the long term, which is precisely the aim of the present study.

1.3 | Ecological setting, long-term effects, and impact upon values

As M.B. Brewer has argued, "the question of whether an effect holds up across a wide variety of people and settings is

¹Their meta-analysis was performed on 42 studies involving 60 experiments or quasi-experiments.

somewhat different than asking whether the effect is representative of what happens in everyday life" (Brewer, 2000, p. 12). The effects of participation in collective gatherings are now relatively well documented through experimental and laboratory studies. Nevertheless, collective gatherings are characterized by great diversity, both in terms of structure and valence (for a review, see Hobson, Schroeder, Risen, Xygalatas, & Inzlicht, 2018). Studying their effects in highly ecological contexts is therefore crucial. So far, studies have focused on contexts as diverse as the aftermath of terrorist attacks (Pelletier, 2018; Rimé, Páez, Basabe, & Martínez, 2010), natural disasters (Włodarczyk et al., 2016), festivals (Neville & Reicher, 2011; Zumeta, Basabe, et al., 2016a), and fire-walking rituals (Fischer et al., 2014). Nevertheless, this type of research, which focuses on real-life events, deserves particular attention given the multiplicity of types of collective gatherings. The present study is an expansion on this type of research and focuses on a gathering of young people, constituting a prototypical situation of emotional synchronization.

Furthermore, little is known about the sustainability of gatherings' effects. Indeed, Durkheim himself considered that the psychosocial effects of participation in social rituals were rather evanescent since he viewed it as the reason why the major religions require participation in the ritual at least once a week (Durkheim, 1912). To date, few empirical studies have investigated the long-term effects of collective gatherings. Moreover, most of them have suggested that effects of collective events last between 1 and 3 weeks (Páez et al., 2007, 2015; Rimé et al., 2010). A notable exception to this trend is a study by Garcia and Rimé (2019) on the digital traces left by Twitter users after the Paris attacks (2015). These authors have shown that participation in emotional exchanges on Twitter following the attacks led to prosocial effects similar to those of collective gatherings. They further pointed out that these positive psychosocial effects lasted for several months. This therefore raises the question as to whether participation in an actual collective gathering can also be followed by positive long-term effects.

Another objective specific to this study was to examine a collective gathering's impact on participants' endorsement of the values underlying the gathering. Durkheim considered that social rituals contribute to the coordination of values and beliefs held in common by members of a society (Durkheim, 1912). According to his views, this is how individuals create and confirm their cohesion as a community (Durkheim, 1983). Recent studies have confirmed that collective gatherings positively affect shared beliefs within a group (Páez et al., 2015). However, to our knowledge, the impact of the gatherings on values has not yet been assessed. In contemporary models of behavior regulation, values are viewed as the ultimate determinants of the goals that individuals pursue (Carver & Scheier, 2001). In a collective context, the coordination of values thus appears to be particularly crucial. Without this coordination, the pursuit of common goals would be unthinkable and common life would be excluded. The purpose of this study—focusing on a large gathering of a youth organization—was particularly well suited to examining the extent to

which a collective gathering has an impact on the crucial values held in common between members of the gathered community.

The present study was designed to meet these requirements of ecological validity and effects sustainability in a specific mass event with a prototypical situation of emotional synchronization. Its main goal is to appraise the impact of participation in a specific collective gathering on indicators of social integration (i.e., in-group identification, identity fusion, in-group pride), empowerment (i.e., self-esteem, openness to experience), and on adhesion to specific values.

1.4 | A major scouting event

1.4.1 | Scouting in the Belgian context

Belgium is a country with a strong and enduring scouting tradition. The first scout troop was founded in 1909 and the Guides followed in 1915 (Scaillet & Wittemans, 2011). Currently, five Scouting or Guides associations, which count 179,200 Scouts and Guides and 27,000 leaders as members, coexist in a country with a population of 11 million (Guiding & Scouting in Belgium, 2018). In proportion to its population, Belgium has one of the highest rates of scout and guide membership in the world. Most scouts and guides practice outdoor activities. One of their main characteristics is the use of uniforms with specific insignia and a neckerchief. The scouting movement relies also on specific values that are shared across the world. These values include the respect of the nature, social justice, friendship, and responsibility (Scouting Values, 2019). Many scouting activities consist of meetings during weekends and an annual camp. These activities are practiced in small groups (usually less than 40 participants). Nevertheless, scout federations occasionally organize mass gatherings involving several hundred to several thousand participants. The present study aimed at investigating the effects of participation in one of these mass collective gatherings on social integration, personal, and social well-being.

1.4.2 | The biggest Belgian scouting event in the last 10 years

The gathering we were interested in took place in April 2018 in Louvain-la-Neuve, a medium-sized city in Wallonia, the French-speaking region of Belgium. This event brought together more than 25,000 people, including 19,000 participants (from 6 to 18 years old) and more than 5,000 animators. The main activities took place over a single day, although 11,000 members of the most senior sections camped in the countryside surrounding the city the day before. On the day of the gathering, participants took part in a number of activities structured around predefined routes. The high point of the day culminated in a show that brought together several thousand participants in front of a stage. The groups then dispersed and returned to their original destinations by means of buses and trains.

1.4.3 | Specific goals

The event, which was organized by one of the five Belgian scouting associations, was the biggest in a decade. It had several clear goals: (1) To show that scouting has a positive impact on today's and tomorrow's society, (2) To stress and strengthen the core values of scouting among participants, and (3) To reinforce the pride of being a scout (Les Scouts, 2018). The entire event and its specific activities were therefore organized to convey these messages and achieve these objectives. For this purpose, it relied on a strong symbolic framework and on a large number of activities implying emotional synchronization.

1.4.4 | A prototypical situation of emotional synchronization

One of the main characteristics of this event was the number and frequency of activities that promoted emotional synchronization. Páez and Rimé listed six factors promoting emotional synchronization (2014): convergence in a special space at a particular time; shared concerns, shared intentions, and shared goals; similar cognitive and emotional responses; common attention and concentration; development of behavioral synchrony; and coordinated expressive manifestations. All listed factors were present in the scout gathering. Participants wore uniforms, walked together, and participated in similar activities. Most of these activities were performed collectively and involved physical and mental challenges. During these, participants were intended to collect specific colors. The use of these colors was one of the main guiding themes of the day. At the end of their journey, participants arrived in front of a large stage. There, they were involved in a show where the colors they had collected were displayed. Artists, including a well-known singer, started a hymn specially designed for the event. Then, after a speech by the head of the Federation, all the public was invited to dance on a new song. In our opinion, this configuration constituted one of the most prototypical situations of emotional synchronization (short video extracts of the performance are available at: <https://osf.io/2ef7a/>).

1.5 | Summary of aims and hypotheses

The present study aimed at appraising the effects of a prototypical collective emotional gathering on social integration, as well as on empowerment and adhesion to specific values in young adults. In line with the neo-Durkheimian model developed by Páez et al. (2015), we formulated the following hypotheses:

1. Participation in the collective gathering will be linked to an increase in the level of in-group identification, identity fusion, in-group pride, self-esteem, openness to experience and of adhesion to four specific values.

2. The level of perceived emotional synchrony during the event will predict positively in-group identification, identity fusion, in-group pride, self-esteem, openness to experience and of adhesion to four specific values just after the event.

Although previous studies demonstrated the positive effects of collective gatherings and the key role of perceived emotional synchrony in the increase of social integration, empowerment and adhesion to specific values, little is known about the sustainability of these effects. The second part of this study aimed at evaluating the long-lasting effects of participation to a collective emotional gathering. Specifically, we hypothesized that:

3. Effects of participation on in-group identification, identity fusion, in-group pride, self-esteem, openness to experience and adhesion to specific values are stable.
4. The level of perceived emotional synchrony during the event predicts positively the level of in-group identification, identity fusion, in-group pride, self-esteem, openness to experience and adhesion to specific values observed after 10 weeks.
5. Compared to non-participants, individuals who participate in the collective event, will demonstrate higher levels of in-group identification, identity fusion, in-group pride, self-esteem, openness to experience and adhesion to specific values as measured 10 weeks after the gathering.

2 | METHOD

2.1 | Overview

An online survey was designed in order to address these hypotheses. Questionnaires were sent to participants at 3 times: (1) a baseline measurement: from 1 to 9 days before the event in order to establish a baseline level for most measures; (2) within the 24 hr following the event (we collected responses up to 24 hr after the event in order to maximize the number of respondents. Indeed, given a set of logistical constraints, most of them could not access the internet until they had returned home); and (3) a follow-up measurement: 10 weeks after the mass gathering². Participants were recruited for the first measurement time via the official Facebook page of the Scout Federation and via mass e-mails sent directly by their Federation. They were informed that they could quit at any time and that the study was composed of three measurement times. For the second

²The choice of a third measurement time after 10 weeks was mainly driven by practical issues. Until this study, results of empirical studies have shown that the effects of collective events lasted between 1 and 3 weeks (Páez et al., 2007, 2015; Rimé, Páez, Basabe, & Martínez, 2010). We could have waited 4 weeks only but then the scouts' animators would have been in a busy period (most of them are also students and have an important exam session at this stage of the academic year). Ten weeks after corresponded to the end of the academic year, right after the period of the exams. This meant that most animators have more free time at this period than in the previous weeks/month.

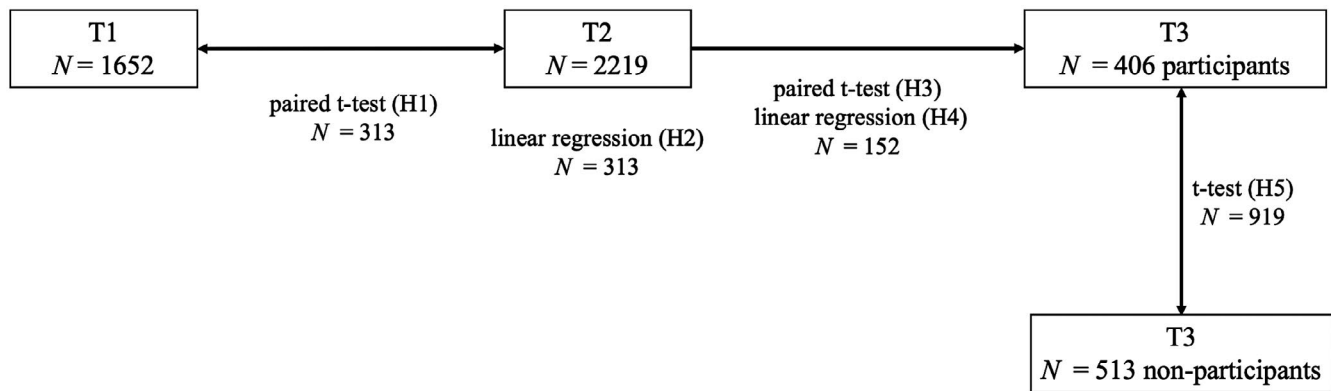


FIGURE 1 Samples mobilized and analyses used at each measurement time

measurement time, Qualtrics questionnaires were distributed through social networks, QR codes, and a mobile phone application specifically designed for the event. At the third measurement time, participants were contacted through the same channels as for time 1. In order to ensure anonymity of the answers, we did not ask participants for their e-mail address or phone number. This prevented us from re-contacting them individually and might explain the drop in the number of participants between the three measurement times (see below).

2.2 | Participants

While the whole event was attended by 25,000 scouts, we were specifically interested in the scouts' animators³ (we focused our study on animators mostly because they could answer our questionnaire without parental authorization). Among the animators, 1,652 participants answered at the first measurement time, 2,219 answered the questionnaire at time 2 and 919 individuals completed the questionnaire at time 3. Of these participants, we ran a first round of analyses on the 313 participants who completed questionnaires at time 1 and 2 ($M_{age} = 22.95$, $SD = 7.51$; 53.7% females). The next part of the analyses focused on the third measurement time and aimed at appraising the long-lasting effects of participation in a collective gathering. We tested a sample of 152 participants ($M_{age} = 21.40$, $SD = 5.06$; 55.3% females) to see whether perceived emotional synchrony during the event (time 2) predicted the level of the main dependent variables at time 3. Then, we compared individuals who participated in the event and individuals who did not. This sample was composed of 406 scouts' animators who participated in the event and 513 who did not. The small proportion of participants who answered at more than one time illustrates the difficulty of "retaining" a young audience over several measurement times. Finally, it is worth mentioning that no outlier was excluded

from analyses. Characteristics of each subsample are provided in Figure 1.

2.3 | Questionnaires

Completing the questionnaires took on average 4 min for questionnaire 1, 5 min for questionnaire 2, and 7 min for questionnaire 3. Besides demographics questions, the survey was composed of the following set of items (see below; the three questionnaires can be found at: <https://osf.io/67fbz/>).

The indicators chosen corresponded to the variables previously studied in the context of collective gatherings (i.e., in-group identification; identity fusion; self-esteem; positive affects) and to variables specifically related to the objectives of the organizers of the gathering (i.e., pride and specific values; see introduction).

Most indicators consisted in short, adapted versions of existing scales in order to maximize the number of answers. All items were rated at the three measurement times with the exception of the positive affects, which were measured at times 2 and 3, and perceived emotional synchrony, which was measured at time 2⁴ (see Table 1 for a summary of the measures). Unless specified, all items were rated on 5-point scales ranging from 1 (= "not at all") to 5 (= "very strongly").

2.3.1 | In-group identification

Identification with scouts was appraised using four items of in-group identification highlighted by Leach and colleagues (2008): for example, "I feel a bond with the scouts," "It is enjoyable to be a scout," "I often think about the fact that I am scout." These items corresponded to the "self-investment" dimension of in-group identification. Given the good internal consistency at the three measure times ($\alpha = .74$ to $.75$), we aggregated the four items.

³In the Belgian scouting context an "animator" is the leader (i.e., member of the managing team) of a section of children or teenagers called "animated." There are four main types of sections depending of the age of the children: (a) "Baladins" from 6 to 8 years old; (b) "Louveteaux" from 8 to 12; (c) "Eclaireurs" from 12 to 16; and (d) "Pionniers" from 16 to 18.

⁴We voluntarily departed from establishing a baseline measure of perceived emotional synchrony before the event. While it might make sense per se, our goal was to appraise the perceived emotional synchrony during and only during the mass gathering. Measuring general perceived emotional synchrony (not related to specific event) might constitute an interesting prospect for future studies.

	T1 (9–1 days before the event)	T2 (Up to 24 hr after the event)	T3 (10 weeks after)
Measures	N = 313	N = 313	N = 152
In-group identification	4.57 (0.44)	4.57 (0.51)	4.64 (0.43)
Identity fusion	3.62 (0.93)	3.82 (0.91)	3.90 (0.94)
Pride	4.30 (0.66)	4.42 (0.61)	4.49 (0.56)
Openness to experience	4.47 (0.60)	4.56 (0.61)	4.56 (0.53)
Self-esteem	3.78 (0.72)	4.01 (0.71)	3.96 (0.71)
Value—Social justice & peace	4.37 (0.76)	4.41 (0.78)	4.39 (0.77)
Value—Respect nature	4.43 (0.70)	4.44 (0.74)	4.46 (0.77)
Value—Loyalty & responsibility	4.53 (0.72)	4.54 (0.66)	4.53 (0.76)
Value—Honesty & friendship	4.67 (0.55)	4.69 (0.58)	4.68 (0.56)
Positive affects	–	3.81 (0.72)	3.87 (0.83)
Perceived emotional synchrony	–	3.80 (0.81)	–

Note: Bracketed values correspond to standard deviations.

TABLE 1 Mean levels of the main indicators at the 3 times

2.3.2 | Identity fusion

A pictographic measure was used in order to appraise the identity fusion of the participants with the scouts of their section. This indicator is composed of five figures showing different configurations of overlap between two circles representing respectively “the self” and “the ingroup” (Swann, Gómez, Seyle, Morales, & Huici, 2009). The figures ranged from a total separation to a total overlap between both circles. Participants were asked to choose the pattern that best described their relation with the scouts of their section (an overview of this instrument is available at: <https://osf.io/67fbz/>).

2.3.3 | Identity pride⁵

The pride of being a scout was measured using three items: “I am proud to be scout,” “Being a scout reflects who I am,” “Being a scout is an important part of how I see myself.” The items were then aggregated to form a single indicator (α ranging from .75 to .77).

2.3.4 | Openness to experience

The level of openness to experience of the participants was measured using three items created by the authors. Our aim was to cover three main aspects of openness to experience: openness

to new encounters, to new experiences, and to new knowledge: (“I feel ready to meet new people,” “I feel ready to make new experiences,” “I feel ready to learn new things”). The items were aggregated ($\alpha = .61$ to .86).

2.3.5 | Self-esteem

The indicator of self-esteem was measured using four items of the Rosenberg's Self-Esteem Scale (e.g., “I think I am worthy person,” “Sometimes I feel really useless” (reversed), “Overall, I am satisfied with myself”) (Robins, Hendin, & Trzesniewski, 2001). Cronbach's α ranged from .63 to .66.

2.3.6 | Values

Adhesion to specific values was assessed using four pairs of values selected from Schwartz's value scale (2006): “Social justice and World peace,” “Environmental protection and respect for nature,” “Loyalty and responsibility,” and “Honesty and true friendship.” These pairs of values were extracted from the universalism and benevolence dimensions of Schwartz' model of values (Schwartz, 2012). They correspond to the main values of the scout movement and were specifically highlighted during the mass event.

2.3.7 | Positive affects

Participants were asked to rate the extent to which they felt three sets of positive emotions: (1) “Optimism,” “Hope,” “Confidence”; (2)

⁵We measured in-group pride in addition to the more classical measure of identification because one of the main aims of the gathering was to increase the level of pride of being a scout (see subsection “Specific goals”). In part of the literature, in-group pride is considered a dimension of in-group identification. However, our measure of identification aimed at capturing dimensions of identification other than pride as well (i.e., satisfaction and centrality; see Leach et al., 2008).

"Self-confidence," "Fascination," "Pride"; (3) "Enthusiasm," "Happiness," "Admiration" (Fredrickson, 2009). The scores of these items were aggregated to calculate an indicator of positive emotions ($\alpha = .82$).

2.3.8 | Perceived emotional synchrony

A short 5-item version of Páez et al.'s (2015) 18-item scale was designed to measure participants' perceived emotional synchrony (e.g., "We felt a strong shared emotion," "We shared a moment of unity")⁶. We used this 5-item version in order to keep the questionnaire short and maximize the rate of completion⁷. The reliability coefficient was satisfactory: $\alpha = .87$.

3 | RESULTS

3.1 | Data analysis procedure

Analyses were performed in two steps, corresponding to our major hypotheses. First, using paired *t* tests, we investigated the effects of the participation to collective gathering in its immediate aftermath (H1). Then, we ran linear regressions to test if perceived emotional synchrony during the event (time 2) significantly predicted the main dependent variables measured at the same time (H2). Each regression was controlled for the value of the dependent variables at time 1.

The second step aimed at evaluating the long-lasting effects of participation in a collective gathering. Using paired *t* tests, we appraised the stability of the dependent variables between time 2 and 3 (H3). Next, using linear regressions, we tested whether perceived emotional synchrony during the event (time 2) predicted the level of the main dependent variables at time 3 (H4). Finally, we compared the level of the dependent variables at time 3 of individuals who participated in the collective event versus individuals who did not (H5). It is important to mention that despite the fact that the study was conducted at 3 points in time, the nature of the data of this study is cross-sectional rather than longitudinal. Figure 1 summarizes subsamples and analyses used at each measurement time.

3.2 | Immediate effects of collective gatherings

Before testing our hypotheses, we assessed whether all variables measured in the present study really corresponded to the different constructs we wanted to evaluate. It might indeed be argued that all variables are mutually inclusive and too correlated to run proper analyses. We thus ran an exploratory factor analysis (EFA)

on the data collected at time 2. Results of the EFA show that all items lie on the corresponding factors (see Table 2)⁸. These preliminary findings provide a solid basis from which we will test our main hypotheses.

First, we tested whether participating in the collective gathering was linked to an increase of the main dependent variables (Hypothesis 1). In order to test this hypothesis, we ran paired *t* tests on the main dependent variables. Results showed a significant increase in the level of identity fusion, pride of being a scout, openness to experience, and self-esteem after participation in the collective gathering (see Table 3). Effect sizes (Cohen's *d*) ranged from small—in the case of openness to experience—to high—in the case of self-esteem. The level of in-group identification and of the four values did not significantly change between time 1 and 2⁹. Hypothesis 1 was thus partially supported.

We then tested whether perceived emotional synchrony during the gathering would predict the level of the dependent variables in its immediate aftermath (Hypothesis 2). We ran regressions, controlling each relation for the baseline level of the dependent variable at time 1. Results showed that perceived emotional synchrony significantly predicted the levels of in-group identification, identity fusion (marginally), pride, openness to experience, self-esteem, positive affects, and of two of the four values just after the participation in the event (see Table 4). These results supported Hypothesis 2.

3.3 | Long-lasting effects

3.3.1 | Stability of the effects

We expected to have enough people responding to all three measurement times. However, this was not the case, and we had to carry out analyses on participants who only answered at times 2 and 3. The number of participants who answered the three questionnaires did not allow running statistical analyses with a minimal level of power. To detect an effect of similar size to those observed with the *t* tests, the number of participants responding to all three measures should be three times higher. This limits the scope of the results but is already an interesting indicator of the long-term effects of collective gatherings¹⁰. In order to verify the stability of the effects (Hypothesis 3), we ran paired *t* tests on a sample of 152 participants who answered to

⁶The original French version of the five items of the perceived emotional synchrony scale are provided in Appendix 1.

⁷These five items seem to be the ones that best capture the core of the emotional synchronization experience. However, this approach should be empirically substantiated in future psychometric studies.

⁸We also tested a pure measurement model on JASP, using the lavaan package (Rosseel, 2012). Results show a satisfactory fit: CFI = 0.97; TLI = 0.96; RMSEA = 0.059; SRMR = 0.054.

⁹The absence of positive effect on in-group identification and the values is very likely due to a ceiling effect. Indeed, the values of these indicators are already very high (4.57 for in-group identification and 4.37–4.67 for the four values on a scale ranging from 1 to 5) at time 1.

¹⁰Given the fact that the participants present similar sociodemographic characteristics at three points in time, and the aim of the present study is to compare mean values of the dependent variables for 3 points in time, we performed contrast analyses in addition to the paired *t* tests. Results of the contrast analyses are highly similar to the one of the *t* tests with a single exception: the level of openness to experience is not significantly higher after participation in the gathering than before. Results of these analyses are available at: <https://osf.io/u9j5r/>.

Rotated component matrix	1	2	3	4	5	6
PES Item 1	0.878	-0.005	-0.015	-0.038	-0.018	-0.006
PES Item 2	0.850	-0.007	0.033	-0.043	-0.017	0.015
PES Item 3	0.804	-0.017	0.006	0.029	-0.044	0.055
PES Item 4	0.780	-0.054	0.008	-0.025	0.147	0.010
PES Item 5	0.734	0.019	-0.027	0.035	0.053	0.004
Integration Item 1	0.052	0.861	-0.020	-0.067	0.030	0.021
Integration Item 2	0.058	0.802	-0.024	0.000	0.028	0.020
Integration Item 3	-0.072	0.737	0.015	-0.053	0.065	0.239
Integration Item 4	-0.042	0.672	-0.002	-0.012	0.029	0.243
Openness Item 1	0.009	-0.048	0.912	-0.024	0.013	0.016
Openness Item 2	-0.038	-0.044	0.903	-0.059	0.044	0.030
Openness Item 3	0.032	-0.027	0.866	0.021	-0.030	0.043
Self-esteem Item 1 (R)	-0.020	-0.114	-0.046	0.841	0.017	0.076
Self-esteem Item 2 (R)	-0.028	-0.168	-0.054	0.780	0.067	0.210
Self-esteem Item 3	0.086	0.242	0.069	0.636	-0.027	-0.224
Self-esteem Item 4	0.064	0.379	0.174	0.450	-0.024	-0.208
Positive Affect Item 1	0.006	-0.033	-0.010	-0.009	0.898	0.008
Positive Affect Item 2	0.022	0.028	0.006	-0.028	0.836	-0.077
Positive Affect Item 3	0.038	0.059	0.035	0.078	0.815	0.023
Pride Item 1	0.059	0.138	0.079	0.052	0.016	0.774
Pride Item 2	0.148	0.125	0.034	0.078	-0.061	0.713
Pride Item 3	-0.003	0.217	0.130	0.021	0.047	0.697

Note: Exploratory factor analysis was performed with oblimin rotation, asking for six factors. We did not include the four items about values as they each represented a proper construct.

TABLE 2 Exploratory factor analysis on main items

Measures	T1-T2	T2-T3	Participants T3 – nonparticipants T3
	N = 313	N = 152	N = 919
In-group identification	0.29	1.85	-3.15** (0.21)
Identity fusion	-4.36*** (0.25)	1.65	-4.97*** (0.33)
Pride	-4.83*** (0.27)	0.29	-4.35*** (0.29)
Openness to experience	-2.86** (0.16)	0.61	-0.85
Self-esteem	-7.65*** (0.43)	-1.55	-1.14
Value—Social justice & peace	-1.10	0.89	-0.38
Value—Respect nature	-0.44	1.05	0.04
Value—Loyalty & responsibility	-0.43	-0.39	-0.81
Value—Honesty & friendship	-0.91	0.27	-1.97* (0.13)

Note: Bracketed values correspond to Cohen's *d* and are provided when the statistic value is significant.

p* < .05; *p* < .01; ****p* < .001.

TABLE 3 Results of paired *t*-tests between T1 and T2, T2 and T3 and of *t* tests between participants vs. nonparticipants at T3

questionnaires at time 2 and 3. Analyses showed no significant difference in the level of any variable between time 2 and 3 (see Table 3). These results suggested that there was no drop in the level of most dependent variables 10 weeks after the gathering.

3.3.2 | Perceived emotional synchrony

Next, we tested whether the levels of the dependent variables 10 weeks after the event might be predicted by the level of

TABLE 4 Linear regressions between perceived emotional synchrony and dependent variables at T2

Measures	<i>F</i> (2,310)	<i>R</i> ²	β_{PES}
In-group identification	159.38***	.51	.147***
Identity fusion	81.99***	.35	.097***
Pride	222.35***	.38	.149***
Openness to experience	107.07***	.41	.200***
Self-esteem	189.7***	.55	.135***
Positive affects	168.96***	.35	.728***
Value—Social justice & peace	132.06***	.46	.078***
Value—Respect nature	184.51***	.55	.089*
Value—Loyalty & responsibility	66.69***	.30	.017
Value—Honesty & friendship	89.80***	.37	.046

Note: This table summarizes the results of linear regressions between perceived emotional synchrony and the variables of interest in the very aftermath of the collective gathering. Except for "Positive Affects," each regression was controlled for the value of the Dependent Variable at T1.

* $p < .05$; ** $p < .01$; *** $p < .001$; **** $p = .06$.

TABLE 5 Linear regressions between perceived emotional synchrony at T2 and dependent variables at T3

Measures	<i>F</i> (1,150)	<i>R</i> ²	β_{PES}
In-group identification	1.83	.01	.065
Identity fusion	3.90*	.03	.206*
Pride	8.87**	.06	.182**
Openness to experience	12.38***	.08	.202***
Self-esteem	20.12***	.12	.338***
Positive affects	18.84***	.11	.383***
Value—Social justice & peace	2.25	.02	.130
Value—Respect nature	6.38*	.04	.215*
Value—Loyalty & responsibility	1.51	.01	.104
Value—Honesty & friendship	0.034	.00	.046

Note: Regressions were performed between Perceived Emotional Synchrony at T2 and the Dependent Variables at T3 on the specific subsample that participated to the event ($N = 152$).

* $p < .05$; ** $p < .01$; *** $p < .001$.

perceived emotional synchrony during the gathering (Hypothesis 4). Since we did not notice any change in the level of the main variables between T2 and T3, we did not control for the level of dependent variables at T2. Ideally, the level of dependent variables at T1 should have been controlled, but this was not possible due to the small number of participants who responded to the three measurement times. Results of linear regressions supported this hypothesis. Indeed, perceived emotional synchrony at time 2 significantly predicted the level of identity fusion, pride, openness to experience, self-esteem, positive affects, and adhesion to the value of respect for nature (see Table 5).

3.3.3 | Participation versus nonparticipation

Finally, we examined whether individuals who participated in the event would show higher levels of social integration, of empowerment and adhesion to specific values than nonparticipants 10 weeks after the gathering (Hypothesis 5). We tested this hypothesis on a sample of 919 individuals who answered the questionnaire at time 3 (see Figure 1 and Table 3). Results of *t* tests revealed that individuals who participated in the collective gathering, showed higher mean levels of in-group identification, identity fusion, pride, and a higher adhesion to the value of honesty and friendship than individuals who did not participate (see Table 3). These results partially support Hypothesis 5.

4 | DISCUSSION

Building on a specific sample of scouts animators, the present study replicated, in a highly ecological environment, the findings derived from the neo-Durkheimian model of collective processes proposed by Páez et al. (2015). In addition, we showed for the first time, that actual participation in a collective gathering was followed by positive psychosocial effects lasting for at least ten weeks.

Durkheim (1912) stressed that social rituals and worship celebrations in which individuals gather together periodically fulfil the function of recreating the social group and reviving shared beliefs. His classic model predicted participants in such collective gatherings experience both a sense of union with others and a feeling of empowerment and leave the collective situation with a renewed sense of confidence in life. The scouting event that was the object of the present investigation was put together by its organizers precisely for the sake of enhancing participants' feeling of union with the Scout movement. Our results largely confirmed that this goal was reached, as participants in the event indeed enhanced their identity fusion with scouting as well as their pride of being a scout. Moreover, in line with the feeling of empowerment and confidence in life predicted by Durkheim, they reported an enhancement in self-esteem and openness to experience. These results, which support those obtained in other contexts and cultures (e.g., rituals, festivals, postattacks), highlight the extent to which the organization of mass events is positive at the individual and group levels.

For Durkheim, the core aspect in such collective situations lies in the shared emotions that are felt and expressed among participants and in the collective effervescence that follows. In a related vein, Páez et al. (2015) viewed collective gatherings as eliciting a perceived emotional synchrony the role of which is central in inducing the psychosocial effects described by Durkheim. Our results clearly confirm that participants' perceived emotional synchrony indeed predicted the level of virtually all the dependent variables as assessed in the short and longer term. Thus, our results, obtained in a prototypical situation of synchronization,¹¹

¹¹See introduction.

support Páez et al.'s (2015) view that affective synchrony is a good candidate as a low-level process underlying the effects of collective gatherings.

In addition to its ecological design and applied dimension, the important contribution of the present study lies in highlighting the potentially lasting effects of participation in collective gatherings. In his seminal work, Durkheim (1912) had especially focused on recurrent religious rituals and suggested that regular rituals were necessary to guarantee these effects. This observation was supported by the fact that most major religions expected their affiliates to attend their collective ritual on a weekly basis, thus suggesting that the effects resulting from participation were rather short lived. To date, only few empirical studies have investigated the lasting effects of participation in collective gatherings. And their results suggest that the effects of collective events last between 1 and 3 weeks (Páez et al., 2007, 2015; Rimé et al., 2010). Still, a recent study on the Twitter exchanges following the Paris attacks, suggested that effects of emotional synchronization might last for several months (Garcia & Rimé, 2019). The present study showed that the long-lasting results obtained through online interactions are also observed when people actually participate in a collective gathering. For very practical reasons, there was not enough data available allowing for pre-post-event comparisons. Furthermore, a focused investigation on the same group of participants before, during, and after event could have been a better approach. However, our results show that the effects of participation in a collective event on social integration and empowerment last for at least ten weeks. These results reflect findings in the literature on collective action. Indeed, while it does not explicitly address the effects of participation in collective gatherings, research into participation in collective action has shown that such action is followed by long-lasting positive effects on psychological well-being (Klar & Kasser, 2009), self-esteem (Macgillivray, 2005; Meier & Stutzer, 2008), fostering of collective identity (Klandermans, Sabucedo, Rodriguez, & de Weerd, 2002), and concern for social justice (Shriver, Miller, & Cable, 2003). For a review, see Vestergren, Drury, and Chiriac (2018).

Finally, we have demonstrated that perceived emotional synchrony during the celebration still acted as the main predictor of identity fusion, pride, openness to experience, self-esteem, positive affects, and adhesion to the value of respect for nature after two-and-a-half months. The question of the stability of the effects of collective gatherings is clearer now. Nevertheless, it is still possible that such long-lasting effects were linked to the specificities of the event and/or of the sample mobilized in the present study. Indeed, the specific event on which we focused was an almost experimental situation of emotional synchronization: It involved a high frequency of activities promoting emotional fusion, the use of colors, uniforms, specific songs, discourse, and choreography. Moreover, the public consisted of children, teenagers, and young adults, gathered together in a whole city. Further investigations on other kinds of events and publics, with a more solid design, are necessary in order to verify the reliability of these findings.

5 | LIMITATIONS

While the present research has offered new insights into the effects of participation in a collective gathering on social integration and on empowerment and adhesion to specific values, it was not devoid of limitations. The first and main one was the absence of control group at times 1 and 2. The inclusion of a group of individuals that would not have participated in the gathering would have allowed for a more confident reappraisal of the effects of participation in the gathering. Further studies using a more controlled design may address this issue. The second and main limitation concerned the absence of a large enough sample of individuals who answered across the three measurement times. The absence of such a group prevented us from running repeated measures. Nevertheless, this limitation was somewhat overcome due to the strong similarities between samples paired for the first two measurement times ($N = 313$) and those paired for the second and third times ($N = 152$)¹².

Another limitation lies in the use of self-reported measures. In the context of collective gatherings, the deindividuation of the participants might lead to more normative answers to this type of measures due to social desirability effects (see Postmes & Spears, 1998). The combined use of qualitative and quantitative methods might reduce this bias. Fourth, the results regarding openness to experience and self-esteem should be interpreted with care. Indeed, these two variables might be confounding variables: Openness to experience is one of the basic personality traits (McCrae & Costa, 1987) and self-esteem implies interindividual and gender differences (Bleidorn et al., 2016). A design controlling for "trait" variables would allow for a better assessment of the relationship between perceived emotional synchrony and these two variables. Finally, despite an in-depth exploration of the various activities composing the gathering, the present design did not provide clear knowledge on the specific episode(s) of synchronization that were linked to the increase in levels of social integration and of empowerment. It is very likely that the performance was the main and strongest moment of emotional synchronization. However, this cannot be established with certainty and future studies—using either a more controlled design or with greater focus on qualitative experience—will be required in order to assess the impact of each kind of specific activity on our variables of interest.

6 | PERSPECTIVES

Although this was outside our scope of investigation, it is important to note the existence of a research stream that also investigates the occurrence of such effects, under the perspective of social identity

¹²The 313 individuals who answered at both two first times of measurement identified slightly more with the scouts and were slightly prouder of being a scout than the 1652 other individuals who answered to time 1 and not to time 2. There is no significant difference on all other indicators. The 919 individuals who answered at time 3 (if they participated in the event or not) differ only on one indicator: they identified slightly more with the scouts than other participants at time 1.

theory (e.g., Drury & Reicher, 1999, 2005, 2009; Hopkins et al., 2016; Reicher, 2017; Templeton, Drury, & Philippides, 2018). This stream is well established and has provided major contributions to the study of collective gatherings. Building the bridge between our scope of investigation and the work from Drury, Reicher, and others, offers promising perspectives. Indeed, even if perceived emotional synchrony and shared social identity have not been studied together so far, direct and indirect links between the quality and intensity of emotions in collective gatherings and perceived shared identity have already been shown (e.g., Neville & Reicher, 2011; Novelli, Drury, Reicher, & Scott, 2013). The next step will therefore make it possible to compare as well as build bridges between these different approaches to collective gatherings.

Another major perspective lies in the investigation of the macro-social effects of collective gatherings. While psychological research has tended to focus on the individual and group level changes, collective gatherings such as protests and wide social movements also the potential to lead to political and social transformations (see Drury & Reicher, 2005). These macro-social transformations are still significantly understudied (for notable exceptions, see Pelletier, 2018; Uluğ & Acar, 2018). We believe that investigating the links between psychosocial processes and macro-level changes allows for the deployment of a truly psychosocial perspective, a perspective that returns to the origins of applied research, and reconnects social psychology with a modern vision of science, considered to be at the service of the emancipation of individuals. Finally, an interesting perspective lies in the study of the effects of gatherings at the cognitive level. Indeed, important theories have shown that experiencing positive emotions is linked to increased creativity, increased attentional span, and enhanced problem-solving skills (Fredrickson, 1998; Isen, 2000).

7 | IMPLICATIONS

The results of this study raise a series of political implications for Western societies facing a rise in collective gatherings and commemorations (François, 2014; Gensburger, 2014). The fact that these gatherings might constitute a fundamental human need is not the subject of this paper. Nevertheless, this study, like other ones (e.g., Carnes & Lickel, 2018; Rennung & Görtiz, 2016; Van Kleef & Fischer, 2016; Zumeta, Oriol, et al., 2016b) suggests that such gatherings have a significant set of positive effects at both the individual and social levels. Knowledge of the potential of these gatherings and of the process underlying their virtuous effects therefore seems to constitute a significant lever for policy makers wishing to influence the sense of social integration and well-being of their citizens. This also constitutes a strong argument in favor of the promotion and support of Youth Movements. Given their organization of regular gatherings, their use of uniforms, and their transmission of prosocial values, they represent potential major vectors in the shaping of social identity and well-being of young people.

Nevertheless, it seems important to keep in mind that mass gatherings, while followed by a set of virtuous effects, can also lead

to potentially dramatic consequences. Or as Moscovici wrote: "At the beginning of this century, we were certain of the victory of the masses; at the end, we find ourselves entirely captive of the leaders" (Moscovici, 1981/2005). Indeed, participation in gatherings also leads to a greater receptiveness to persuasive messages (e.g., Petty, Harkins, & Williams, 1980) and to a decreased sense of responsibility (e.g., Festinger, Pepitone, & Newcombe, 1952). And some of the most infamous leaders of the twentieth century were well aware of these effects (Bendersky, 2007). Given their complexity, collective gatherings deserve, in our opinion, more attention from the human sciences in the years to come.

ACKNOWLEDGMENTS

We are grateful to *Les Scouts Baden-Powell de Belgique* and especially to their Head: Christelle Alexandre. Without her full and complete support, this study could not have been conducted.

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How to cite this article: Bouchat P, Rimé B, Van Eycken R, Nils F. The virtues of collective gatherings: A study on the positive effects of a major scouting event. *J Appl Soc Psychol*. 2020;50:189–201. <https://doi.org/10.1111/jasp.12649>

APPENDIX 1. ORIGINAL FRENCH VERSION OF THE SHORT SCALE OF PERCEIVED EMOTIONAL SYNCHRONY

Items

J'ai été baigné dans une émotion partagée par tout le groupe

Nous étions tous à l'unisson

J'ai eu l'impression de vibrer avec les autres scouts

J'ai ressenti une union avec les autres

Nous avons partagé un moment de fusion

Note: Items were rated on a scale ranging from 1 (= "not at all") to 5 (= "very strongly").