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Creating the sacred from the profane: Collective effervescence and everyday activities

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ABSTRACT

The current research examines the hypothesis that collective effervescence – the sense of connection and meaning that comes from collective events – is not just useful for understanding rare, unusual, and intense collective events, but also as a framework for understanding how seemingly insignificant and/or common collective gatherings (i.e. 'everyday events') may give meaning, a sense of connection, and joy to life. We found evidence for our hypothesis across nine different studies utilizing eleven datasets and over 2500 participants. The first three studies found that collective effervescence is best understood as a combination of feeling connected to others and a sensation of sacredness. The next four studies found that collective effervescence is found in common, everyday kinds of events and that it is related to various aspects of enjoying group activities. The last two studies found that collective effervescent experiences are common; three quarters of people experience collective effervescence at least once a week and a third experience them every day. Moreover, commonly experiencing collective effervescence predicts wellbeing above and beyond the effects of other kinds of social connection. Results are discussed in terms of the human need for social connection and the importance of groups.

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Over one hundred years ago, Emil Durkheim proposed that collective activities separate the sacred from the profane by fostering a sense of collective effervescence. In other words, he argued that collective effervescence separates that which is special from that which is 'everyday' and mundane. Durkheim described collective effervescence as what happens when one is in a group and experiences 'emotional excitation felt by those who join with others they take to be fellow members of a moral or biological tribe' that brings about a 'sensation of sacredness' (Hochschild, 2016, p. 225). The past decade has found empirical evidence that suggests that collective effervescence occurs in fire-walking activities (Xygalatas, Konvalinka, Bulbulia, & Roepstorff, 2011), large-scale cultural gatherings (Páez, Rimé, Basabe, Wlodarczyk, & Zumeta, 2015), and giant dance parties (e.g. Berkers & Michael, 2017), all supporting the thesis that collective effervescence is a powerful psychological experience connected to strong emotions and wellbeing.

In the current work, we argue that collective effervesce should not just be seen as explanation for the power of rare, unusual, and intense collective events, but can also be used as a framework for understanding how any kind of small and/or common collective gathering may give meaning, a sense of connection, and joy to life. We argue that collective effervescence is not exclusively an extraordinary and rare occurrence. Instead, we propose that people feel small amounts of collective effervescence frequently: while watching a movie, sitting in a classroom, and even while at events without intrinsic interest. Furthermore, we propose that even those small amounts of collective effervescence may be psychologically important and contribute to well-being and happiness in life. Across nine different studies utilizing 10 datasets and over 2500 participants, we examine three hypotheses about collective effervescence. We propose that collective effervescence is best understood as a combination of feeling of connection to others and a sensation of sacredness; that collective effervescence is experienced in common, everyday kinds of events; and that experiences of collective effervescence experiences are related to positive outcomes such as life satisfactions, a feeling of awe, social connection, and perceived meaning in life. We argue that simply being with others in a group event can bring a sense of connection and sacredness that can improve the quality of life because human beings are fundamentally and inextricably social.

Human beings are fundamentally and inextricably social

For decades, psychologists have argued that human beings are inherently driven to the social connection

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(Baumeister & Leary, 1995; Bowlby, 1969, 1973; Maslow, 1968; McClelland, 1951; Stevens & Fiske, 1995). Humans require the experience of inclusion and connectedness with others much the same way they require food and drink, sleep, shelter, and safety (Baumeister & Leary, 1995; Williams, 2007). In addition, the same affective system that serves other basic needs also serves the need to belong. When we feel connected to others, we feel good. When our needs are thwarted, we feel bad (Frijda, 1988). Forming and maintaining social bonds is positively correlated with happiness in life and positive life outcomes (Myers, 1992). People who have connections with others are not only happier, but they also are mentally and physically healthier as compared to people who lack stable and meaningful social support (McAdam, 1986).

Despite the clear importance of social connections, research has all but ignored the effects of non-dyadic bonds on wellbeing (see Haidt & Kesebir, 2008 for a discussion). This neglect persists despite compelling research suggesting that social connection can occur on multiple levels, ranging from intimate dyadic bonds to connections to larger collectives (e.g. Brewer & Gardner, 1996; Cacioppo, Grippo, London, Goossens, & Cacioppo, 2015; Hawkley, Browne, & Cacioppo, 2005), and evidence that dyadic bonds are sometimes not enough to fill social needs (Knight, Chisholm, Nigel, & Godfrey, 1988).

Non-dyadic bonds

In their seminal endeavor to enumerate the differences between collectivist and relational bonds, Brewer and Chen (2007) argued that both the relational and collective selves involve bonds or connections to specific others; how they differ is in the degree of personalization of those bonds. Specifically, the relational self is thought to be composed of personalized representations of actual bonds and tactile relationships with dyadic partners. Conversely, the collective self is thought to be composed of depersonalized relationships with others that do not require actual interpersonal knowledge or interactions, but instead rely on shared group memberships.

Collective bonds are formed shockingly easily. Collective bonds can be with people whom one has not even met, but with whom one shares a group membership (Ashmore, Deaux, & McLaughlin-Volpe, 2004). People automatically, quickly, and easily assimilate collective identities, even on the basis of the most minimal criteria (Tajfel, 1970). People even assimilate collectives to which they do not belong, adopting their behaviors, attitudes, and traits (DeMarree, Wheeler, & Petty, 2005; Kawakami, Young, & Dovidio, 2002). People may assimilate to groups so easily because the survival value of collective life for our evolutionary ancestors (Caporael & Brewer, 1995; Wilson, 1978) led to the evolution of internal mechanisms that propel modern humans to collectives (Stevens & Fiske, 1995). These mechanisms predispose people to quickly assimilate to groups when in their presence (DeMarree et al., 2005; Kawakami et al., 2002) and to experience pleasure from collective affiliations, such as increased life satisfaction and positive affect (Baumeister & Leary, 1995; Myers, 1992).

Once formed, collective bonds increase well-being (Cohen & Willis, 1985; Ellemers, De Gilder, & Haslam, 2004; Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005). For example, social rituals increase life satisfaction, perceived social well-being, and positive mood (Páez, Bobowik, Bilbao, Campos, & Basabe, 2011; Páez, Bobowik, Carrera, & Bosco, 2011)). Feelings of social connectedness mediate the relationship between collective behaviors and the enjoyment participants experience in collective emotional gatherings, suggesting that social need fulfillment play a key role in explaining why collective gatherings are rewarding (Stieler & Germelmann, 2016).

Collective bonds can affect wellbeing even when no relational bonds exist between members. The number of group memberships an individual has is a unique negative predictor of loneliness above and beyond the effects of specific dyadic relationships (Hawkley et al., 2005). In addition, research on the psychological effects of ostracism has found that ostracism – being ignored or excluded by others – is painful even when no dyadic bonds exist (Williams, 2009; Williams & Nida, 2011). For example, ostracism leads to negative psychological outcomes even when the perpetrators are a group of strangers (Williams & Sommer, 1997). Thus, connections to collectives are important for wellbeing above and beyond the effects of friendships.

In summary, a feeling of social connection is essential for wellbeing and there is evidence that engaging with collectives can increase wellbeing due to the fulfillment of social needs. One psychological process by which engagement with collectives may increase wellbeing is through the experience of collective effervescence.

Collective effervescence

Durkheim (1912) argued that when people are engaged in collective activities, they sometimes experience a sense of collective effervescence. Although originally used to describe individuals engaged in religious rituals, Durkheim believed that all that was necessary for collective effervescence was 'that men are assembled, that sentiments are felt in common and expressed in

common acts; but the particular nature of these sentiments and acts is something relatively secondary and contingent' (1965, pp. 431–432). In other words, being together with others and engaging in some kind of common task – praying, watching a football game, listening to a band – can lead to collective effervescence even in the absence of a shared relational history. Durkheim argued that when engaged in social activities, the individual mind could be quieted and a sense of sacredness, ecstasy, and well-being developed. It is that sense of sacredness that makes submersion in the group so enjoyable. Pickering (1984) further expanded Durkheim's arguments and coined the term 'effervescent assembly' which describes a group activity in which collective effervescence is likely to occur. These moments of collective behavior are a part of both modern and ancient human life, and exist across culture and time (Ehrenreich, 2006; McNeill, 1995).

Building on Durkheim's theories, Haidt and colleagues (2008) proposed a 'Hive Hypothesis' for ritual action. They argue that people must occasionally lose themselves in a larger social organism to achieve the highest levels of individual well-being, protecting them against what Cacioppo et al. (2015) call collective loneliness. Based on sociological texts arguing that the collective rituals that lead to collective effervescence are an ubiquitous part of both older and more recent group activities in every part of the world (Ehrenreich, 2006; McNeill, 1995), they argue that the kinds of activities likely to cause collective effervescence should be more effective in increasing well-being and decreasing loneliness.

In support of the key role of collective effervescence, research suggests that components of collective effervescence mediate the effects of group participation on a plethora of positive outcomes (Páez et al., 2015). Individuals were studied after they engaged in group activities both in the laboratory (an experimentally induced collective protest demonstration) and in the field (participants in pseudo-military folkloric marches and protest demonstrations). Across four studies, participants who engaged in collective gatherings experienced increases in positive affect, happiness, positive social beliefs, identity fusion, and enhanced collective and personal self-esteem. Importantly, these effects were mediated by a sense of collective effervescence (which was operationalized as a perception of shared emotion).

Evidence for the key role of collective effervescence also comes from research suggesting that the more people engage in effervescent assembly, the higher they tend to score on a number of wellbeing variables. The Tendency for Effervescent Assembly Measure (TEAM) assesses the frequency of experiencing effervescence assembly. Scores on the TEAM predict decreased loneliness, increased positive feelings, a sense of meaning in one's life, self-awareness, and spiritual transcendence, above and beyond the effects of the big five factors of personality and collective and relational interdependence (Gabriel, Read, Young, Bachrach, & Troisi, 2017). Furthermore, results suggested that positive outcomes associated with the TEAM are due to social need fulfillment. In other words, above and beyond the effects of having solid relationships with others and the effects of personality differences, people who experience more collective effervescence tend to be happier with their lives, feel like their lives have more meaning, are less likely to suffer from anxiety and depression, and show more resilience to stress (Gabriel et al., 2017).

In summary, there is evidence that people can fill belongingness needs and gain a greater sense of meaning in life from engaging in group activities, even if they have no existing dyadic bonds with the other people present. The current research is interested in both how this happens (what actually *is* collective effervescence) and also how often this happens. We argue that collective effervescence is not a rare mystical event, but is instead an important a part of everyday life. In addition, we argue that collective effervesce contains two related, but distinct components: connections to others and a sensation of sacredness.

Collective effervescence: two components

In past research, people have conceptualized collective effervescence in two different ways. First, there is Durkheim's suggestion, later echoed by Haidt and his colleagues that collective effervescence involves a mental transformation of a situation from pedestrian to divine: what Durkheim called a 'sensation of sacredness' (Durkheim, 1912; Haidt, 2008). Second, Páez and colleagues discussed collective effervescence in terms of connection to others present. Specifically, they operationalized collective effervescence as perceptions that one shares an emotional experience with others present (Páez et al., 2015). We argue that collective effervescence has both components. Based on our preliminary work, past research, and existing theory, we predict that collective effervescence is best understood as a multifaceted experience that involves a sense of connection to others and a sensation of sacredness.

The current research

The current research examined three related hypotheses about collective effervescence. Hypothesis 1 is that

collective effervescence is best understood as a combination of the feeling of connection to others present and a sensation of sacredness. Hypothesis 2 is that collective effervescence should be experienced not just in extraordinary events but also in common, everyday kind of events. Hypothesis 3 argues that experiences of collective effervescence should be related to positive outcomes such as life satisfaction, a feeling of awe, and increased meaning in life. We examined our hypotheses across nine studies utilizing 10 datasets with over 2500 participants.

Studies 1a, 1b, and 1c utilized five independent datasets to examine the first hypothesis by validating a state scale of collective effervescence. Based on previous research and Durkheim's theory, we hypothesized that collective effervesce would contain two components: a sense of connection to the other people present and a sensation of sacredness.

Studies 2a, 2b, 2c, and 2d examined Hypothesis 2; that collective effervescence should be experienced not just in extraordinary events but also in common, everyday kinds of events. Using the measure of state collective effervescence developed in Studies 1a-1c, Studies 2a – 2d examined levels of CE in common events: watching a TV show with a rowdy crowd, watching a TV show with a quiet crowd, sitting in a classroom, and being in a group event that is not personally interesting.

Finally, Studies 3a and 3b examined hypotheses 2 and 3; that collective effervescent experiences should occur regularly and should be related to wellbeing. Both studies measured the frequency of collective effervescence in people's day to day lives and assessed whether that frequency predicted meaning in life, a sense of social connection, and overall wellbeing. Study 3a utilized a student sample and Study 3b a community sample.

Studies 1a, 1b, and 1c: scale validation

Description of datasets for studies 1a-1c

In order to attain the large N needed for scale validation, Studies 1a-1c drew on five independent datasets. The first two datasets were correlational datasets collected from students at a large public university with the express purpose of utilization for exploratory factor analysis for scale development. The third study brought participants into a controlled lab setting during which they engaged in a group task and then completed the scale. The fourth dataset had participants list either a group event in which the crowd was engaged or a group event in which the crowd was silent and then the completed the state scale. Finally, the fifth dataset was collected for a confirmatory factor analysis for the scale. As with datasets 1 and 2, participants thought of a group event and then completed the state scale.

When generating items for the new state measure of collective effervescence, items were included that tap into connections to others (e.g. 'I felt connected to others who were present at the event'. 'I felt as if most everyone there felt the same emotions') and a sensation of sacredness (e.g. 'I felt as if there was something sacred about the event'; 'I felt as if the event changed me in some way'). We also included items reflecting positive and negative moods during the experience. Although most collective effervescent experiences tend to be positive, people can feel collective effervescence during negative experiences (such as a funeral). Thus, it was not clear whether positive affect (or a lack of negative affect) would be essential for collective effervescence (i.e. because it can occur when people share a traumatic or negative event). We also included items related to other group processes to explore if they are a part of collective effervescence or if these processes are different (but related) to collective effervescence. We assessed synchronization by asking participants to what degree they felt as if participants were all engaged in a synchronized activity. We assessed connection to all people by asking to what degree people felt connected to people who were not there and to what degree they felt connected to all of humanity. Finally, we included items tapping into wonder and amazement at the event and being lost in the moment. In total 18 items were examined for inclusion in the state collective effervescence scale (SCE). Some of them were directly related to connection to others or a sensation of sacredness whereas others were meant to explore whether other constructs were also a part of state collective effervescence (see Table 1).

Each of the datasets measured the 18 items that were being assessed for inclusion in the SCE as well as other variables that could be used for convergent and discriminant validation.

Dataset 1

Participants

We recruited 472 (190 female) undergraduate students from a large state university who were diverse in ethnicity (48 African/African American, 98 Asian/Asian American, 42 Hispanic/Hispanic American, 3 Native American/Alaska Native, 1 Pacific Islander, 303 European/European American, and 20 Other) with an average age of 19.17 ($SD = 2.35$). Students were recruited as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study, participants completed the survey on the external website Qualtrics.

Table 1. Original 18 Items.

1. I felt connected to others who were present at the event.
2. I felt connected to people who weren't at the event, but who I share a common identity with.
3. I felt connected to all of humanity.
4. I felt as if most everyone there felt the same emotions.
5. I felt as if most everyone there felt a connection to the other people who were present.
6. I felt wonder and/or amazement at the event.
7. I felt positive emotions at the event.
8. I felt negative emotions at the event.
9. I felt like I lost myself in the moment at the event.
10. I felt as if there was a greater purpose to the event.
11. I felt as if there was something sacred about the event.
12. I felt as if there was something special about the event.
13. I felt as if the event changed me in some way.
14. I felt like the people there shared a purpose during the event (i.e. everyone was there for the same thing).
15. The people in the event were involved in a synchronous activity at all (i.e. everyone doing the same thing at the same time, such as applauding, dancing, laughing, praying, cheering, or some other synchronous activity).
16. I felt a connection to the other people who were there because we shared beliefs and/or ideas.
17. The event made me feel closer to the people who were there.
18. I felt bored during the event.

Design

Participants were asked to think of a time they were in a big crowd of people. They then completed the 18 items designed to measures collective effervescence (CE) and answered questions related to that event. After that, collective effervescence was defined for the participants and they were asked how much collective effervescence they felt at their event. Next, participants were asked to specifically think of an event at which they felt collective effervescence and they answered the same questions about that event. Only the first prompt was used for scale construction.

Materials

Group event prompt. 'Please think of a time when you were in a big crowd of people at some kind of gathering. It could be a church, a concert, a sporting event, a festival, a memorial, a wedding, a political rally, or any other event. Please write about this experience briefly'.

Collective effervescence prompt. We utilized an established description of collective effervescence for this task (Gabriel et al., 2017). Specifically, participants were told: 'Collective effervescence is the feeling of connection that you might get when in a large group event, such as at a concert, church, sporting event, or convention. Some people describe it as a moment when you feel like you are part of something bigger than yourself. It may be a moment when everyone in a crowd comes together, perhaps when experiencing some great music, or after your team scores a goal, or after a speaker makes a profound point. It is a feeling that the crowd is all in on something together. You may not even know some of the other people there (or you might). The important thing is this feeling of being in on something together. It is usually described as a positive, pleasurable experience. Think about a time you felt collective effervescence. Specifically, a time when you engaged in a group activity or went to an event and felt connected to the other people that were there. Write about this experience briefly'.

State collective effervescence. To assess the collective effervescence that participants experienced during the events they described, the 18-item state collective effervescence scale, which is being developed in the current study, was used

Perception of collective effervescence. The extent to which participants believed that they had experienced collective effervescence at the event they described was measured using a single item question: 'To what extent would you agree with the statement that the experience you described earlier was a collective effervescence experience?' Before answering this question, participants were provided a description of collective effervescence to base their evaluation of each event on (Gabriel et al., 2017).

Dispositional awe. One's propensity to feel awe in everyday life was assessed using the Awe subscale of the Dispositional Positive Emotions Scale (Shiota, Keltner, & John, 2006). These five items measure the tendency to have experiences and emotions related to awe, such as 'I seek out experiences that challenge my understanding of the world' and 'I often feel awe'. The α reliability in this sample was .84.

Demographics. General demographics were collected at the end of the survey.[1]

Dataset 2

Participants

We recruited 195 (111 female) undergraduate students from a large state university who were diverse in ethnicity (11 African/African American, 99 Asian/Asian American, 9 Hispanic/Hispanic American, 1 Pacific Islander, 72 European/European American, and 5 Other) with an average age of 19.03 (SD = 1.37). Students were recruited as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study,

participants completed the survey on the external website Qualtrics.

Design and materials

The methods and materials used in this dataset were identical to those used for Dataset 1.

Dataset 3

Participants

We recruited 212 (105 female) undergraduate students from a large state university who were diverse in ethnicity (38 African/African American, 50 Asian/Asian American, 27 Hispanic/Hispanic American, 1 Native American, 1 Pacific Islander, 106 European/European American, and 14 Unspecified) with an average age of 19.15 (SD = 2.21). Students were recruited as partial fulfillment of a course requirement in a psychology course.

Design

Participants watched an episode of a television show in groups of between 51 and 57 participants. This experiment was conducted in a moderately sized classroom with elevated seating and a projector to simulate an intimate movie theater experience. In each session, participants were shown a 25-min episode of *The Addams Family*. This show was chosen because the discussion with other undergraduates led us to believe that participants were unlikely to have seen the episode before and were, therefore, were less likely to be impacted by previous knowledge of the show or prior experiences viewing the show, either alone or with others. Afterwards, they completed the 18 collective effervescence items, along with several additional measures described below.

Measures

State collective effervescence. To assess the collective effervescence that participants experienced during the group events described, participants completed 18 items considered for inclusion in the state collective effervescence scale, which is being developed in the current study.

Extraversion. To assess trait extraversion, the 10-item personality inventory was used (Gosling, Rentfrow, & Swann, 2003). Extraversion was calculated using the mean of the degree to which a participant agreed with 'I see myself as: Extraverted, enthusiastic' and disagreed with 'I see myself as: Reserved, quiet'.

Openness to experience. To assess trait openness to experience, the 10-item personality inventory was used (Gosling et al., 2003). Openness to experience was calculated using the mean of the degree to which a participant agreed with 'I see myself as: Open to new experiences, complex' and disagreed with 'I see myself as: Conventional, uncreative'.

Relational and collective interdependent self-construal. To assess relational collective interdependent self-construal, the 12-item Relational-Interdependent Self-Construal Scale (RISC; Cross, Bacon, & Morris, 2000) and the 12-item Collective-Interdependent Self-Construal Scale (Gabriel & Garnder, 1999) were used. These measures assess the tendency to think of oneself in terms of relationships with close others. An example item assessing relational self-construal includes, 'My close relationships are an important reflection of who I am.' An example item assessing collective self-construal includes, 'The groups I belong to are an important reflection of who I am'. The reliability for the collective self-construal scale in this sample was α = .91. The reliability for the relational self-construal scale in this sample was α = .87.

Religious faith. To assess the strength of religious faith, the five-item Santa Clara Strength of Religoius Faith Questionnaire- Short Form (Plante, Vallaeys, Sherman, & Wallston, 2002) was used. An example item from this measure includes 'I consider myself active in my faith or church'. The reliability for this scale in this sample was α = 94.

Demographics. General demographics were collected at the end of the survey.

Dataset 4

Participants

We recruited 253 (106 female) undergraduate students from a large state university that was diverse in ethnicity (22 African/African American, 62 Asian/Asian American, 21 Hispanic/Hispanic American, 2 Native American/Alaska Native, 1 Native Hawaiian, and 152 European/European American) with an average age of 19.02 (SD = 1.46). Students were recruited as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study, participants completed the survey on the external website Qualtrics.

Design

Participants were instructed to write a short description about two different events: an event in which the crowd was very engaged and active and an event at which the crowd was largely silent and much focused on what they

were hearing and/or seeing. Participants were assigned to describe and answer questions about each event in a random order to account for potential order effects.

Materials

Engaged crowd event prompt. 'Please think of a time when you were in a big crowd of people at some kind of gathering. It could be a religious event, a concert, a sporting event, a festival, a convention, a memorial, a wedding, a political rally, a movie, or any other event. Think of an event in which most of the individuals in the crowd were actively engaging in activity. It could be that people were dancing. It could be that they were singing or shouting or cheering or laughing or any other active thing. Think of any event you were at in which the crowd was really engaged and active. Very briefly describe the event (e.g. "My sister's wedding last summer")'.

Silent crowd event prompt. 'Please think of a time when you were in a big crowd of people at some kind of gathering. It could be a religious event, a concert, a sporting event, a festival, a convention, a memorial, a wedding, a political rally, a movie, or any other event. Think of an event in which most of the individuals in the crowd were not actively engaging inactivity. Instead, it should be an event at which the crowd were so focused on the event (for example, the music being played or the play or the speaker) that they were silent and focused. Think of an event at which the crowd was largely silent and very focused on what they were hearing and/or seeing. Very briefly describe the event (e.g. "a classical music concert I saw over break").'

Measures

Event enjoyment. Enjoyment of the event was measured with the single item, 'Did you enjoy the event?' and was answered on a 7-point scale from 'Strongly Disagree' to 'Strongly Agree'.

Dispositional collective effervescence. An individual's trait-level tendency to feel collective effervescence was measured with the Tendency for Effervescent Assembly Measure (Gabriel et al., 2017). This 11-item measure assesses the types of feelings associated with social connectedness to a present crowd, such as 'I feel very connected to others when in a large group activity I like, like going to a concert, church, or convention'. Items from this scale reflect each individual's tendency to seek out and enjoy collective effervescent events. The α reliability for this scale in this sample was .89.

Friends at the event. Interactions with friends at the event was measured by the item 'How many friends (and other relationship partners) were you hanging out with at the event?'

Demographics. General demographics were collected at the end of the survey.

Dataset 5

Participants

We recruited 418 (242 female) undergraduate students from a state university that was diverse in ethnicity (40 African/African American, 144 Asian/Asian American, 29 Hispanic/Hispanic American, 1 Native American/Alaska Native, 3 Pacific Islander, 200 European/European American, and 3 Other) with an average age of 19.01 (SD = 1.41). Students were recruited as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study, participants completed the survey on the external website Qualtrics.

Design

Participants were instructed to write a short description of an event in which they were in a big crowd of people at some kind of gathering. To ask participants to write about this group event, they were presented with the following writing prompt: 'Please think of a time when you were in a big crowd of people at some kind of gathering. It could be church, a concert, a sporting event, a festival, a memorial, a wedding, a political rally, or any other event. Please describe this experience briefly (for example "It was my sister's wedding")'. Following completion of the writing task, participants completed measures regarding the event they chose to describe.

Measures

Flow. Flow experienced during the event was assessed using the 35-item Flow State Scale (Jackson & Marsh, 1996). An example item from this scale included 'The way time passed seemed to be different from normal'. The reliability of this measure in this sample was α = .94.

Experience of awe. To assess experiences of awe during the event, the 30-item Awe Experience Scale (AWE-S) scale was used (Yaden, Kaufman, Hyde, Gaggioli, Zhang, Keltner, 2018). An example item from this scale includes 'I tried to understand the magnitude of what I was experiencing'. The reliability of this measure in this sample was α = .92.

Perception of collective effervescence. The extent to which participants believed that they had experienced

Table 2. Standardized factor loadings from exploratory factor analyses in datasets 1–3.

	Datasets 1-2		Dataset 3		Emot.
	Connection	Sacredness	Connection	Sacredness	Engage
State CE1	**.654***	.240*	**.821***	−.135	.018
State CE2	.172*	**.380***	.324*	.074	−.062
State CE3	.160*	**.530***	.322*	.277*	.063
State CE4	**.588***	.146	**.508***	.020	.204*
State CE5	**.580***	.265*	**.814***	−.006	−.041
State CE6	**.692***	.153*	.224	**.500***	.213*
State CE7	**.890***	−.064	.107	−.012	**.824***
State CE8	**−.662***	.118	.013	−.244*	**.745***
State CE9	.215*	.243*	−.075	.343*	.070
State CE10	−.008	**.745***	−.014	**.382***	.212*
State CE11	−.140*	**.693***	−.016	**.898***	−.007
State CE12	**.387***	**.474***	.060	**.696***	.202*
State CE13	.006	**.695***	.223	**.591***	−.025
State CE14	**.517***	.073	−.052	.023	.282*
State CE15	**.584***	−.003	**.395***	−.139	.020
State CE16	**.421***	**.492***	**.493***	.318*	−.076
State CE17	**.461***	**.457***	**.696***	.156	.010
State CE18	**−.647***	.037	−.073	.250*	**.610***

* $p < .05$. Correlations |.35| or greater are shown in boldface.

collective effervescence at the event they described was measured using a single item question: 'To what extent would you agree with the statement that the experience you described earlier was a collective effervescence experience?' Before answering this question, participants were provided a description of collective effervescence to base their evaluation of each event on (see Dataset 1 for details).

Study 1a: exploratory structural analyses and item reduction

The potential state collective effervescence items were first examined in Datasets 1 and 2 combined. In these studies, participants were asked to think of a time that they were in a crowd of people at some kind of gathering (N = 634, after removing individuals who did not follow directions when identifying a group event). All 18 items were submitted to an exploratory factor analysis with an oblique (i.e. geomin) rotation, using robust maximum likelihood estimation. Parallel analysis, in which randomly generated eigenvalues using the properties of the dataset are compared to the observed eigenvalues, indicated that up to two factors should be extracted, and the two-factor solution yielded an acceptable fit to the data: χ^2 (118) = 495.47, $p < .001$, CFI = .904, RMSEA = .071, SRMR = .042. An examination of the factor loadings (see Table 2) suggested that the first factor was interpretable as feeling connected to others and experiencing pleasant emotions during the CE event, whereas the second factor was indicative of sensation of sacredness. The factors were moderately correlated (r= .47). A one-factor solution was also examined, but the fit of this model was poor (χ^2 (135) = 953.53, $p < .001$, CFI = .791, RMSEA = .098, SRMR = .075) and was therefore not pursued further.

The structure of the items was then examined with exploratory factor analysis (geomin rotation) in an independent sample (Dataset 3) with a different source for the referent CE event (i.e. an experimental manipulation). Parallel analysis indicated that up to three factors should be extracted. Both the one- and two-factor solutions were a poor fit in this sample (one factor: χ^2 (135) = 574.80, $p < .001$, CFI = .618, RMSEA = .124, SRMR = .104; two-factor: χ^2 (118) = 323.58, $p < .001$, CFI = .822, RMSEA = .091, SRMR = .061). In contrast, the fit of the three-factor solution was acceptable (χ^2 (102) = 206.08, $p < .001$, CFI = .910, RMSEA = .069, SRMR = .047) and were examined further (see Table 2for factor loadings). Two of the factors were quite similar to the factors in the first exploratory analysis, consisting of Connection and Sacredness. The last factor was best interpreted as representing Emotional Engagement, as it had positive loadings for three emotion items that differed in valence (i.e. positive emotions, negative emotions, boredom). In contrast, these three items loaded on the Connection factor in Samples 1 and 2 combined. The Connection factor was moderately and positively associated with the other two factors in this sample (rs = .42 and .47), whereas Emotional Engagement and Sacredness were unrelated (r= −.03).

Results from both exploratory datasets were considered when selecting items to retain for the final scale. We retained items with primary standardized loadings greater than .35 and cross-loadings less than .30 in at least one sample, while also attempting to minimize item redundancy and maintain a breadth of content. Five items met this criteria for Connection (1, 4, 5, 15, 17), and 4 items for Sacredness (10, 11, 12, 13). Cronbach's alpha indicated acceptable internal consistency in both Datasets 1/2 and Dataset 3 for Connection (α = .84 and .79, respectively) and Sacredness (α = .79 and .77, respectively). However, eliminating item 15 from Connection improved internal consistency in both samples (α = .85 and .82, respectively), so this item was dropped.

Given that the Emotional Engagement factor emerged in Dataset 3, we also examined this three-item subscale (items 7, 8, 18). However, whereas all of the Emotional Engagement items were positively correlated in the second exploratory sample, the positive emotion item was *negatively* correlated with boredom and negative emotions in the first exploratory dataset. This suggests that this subscale functions differently across samples – reflecting a pro-hedonic experience in the first, but any emotional engagement (positive or

Based on the event you just attended, rate your agreement with each item using the following scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Slightly Disagree	Neither Agree Nor Disagree	Slightly Agree	Agree	Strongly Agree

1. I felt connected to others who were present at the event.
2. I felt as if most everyone there felt the same emotions.
3. I felt as if most everyone there felt a connection to the other people who were present.
4. I felt as if there was a greater purpose to the event.
5. I felt as if there was something sacred about the event.
6. I felt as if there was something special about the event.
7. I felt as if the event changed me in some way.
8. The event made me feel closer to the people who were there.

** items 1, 2, 3, and 8 are the connectedness subscale
** items 4, 5, 6, and 7 are the sacredness subscale

Figure 1. Final Version of the State Collective effervescence Measure

negative) in the second – perhaps due to difference in recalling naturalistic events vs. responding to a laboratory manipulation. Given that scales need to function uniformly across samples and contexts, and since emotional engagement is not considered a core component of CE, this subscale was dropped. Thus, the final measure consists of two subscales – Connection and Sacredness – with four items each (see Figure 1 for the final scale with items and instructions).

Study 1b: confirmatory structural analyses

Exploratory structural equation modeling (ESEM) was used to validate this two-factor structure for the eight retained items in two independent samples. In Dataset 4, participants (N = 256) were asked to identify an engaged CE event and a silent CE event, completing the state CE items once for each event; each set of responses was analyzed separately here. In Dataset 5, participants (N = 415) selected a CE event they had experienced, without any further guidance or restrictions, similar to Datasets 1 and 2. Unlike confirmatory factor analysis, ESEM allows for cross-loadings that are often present in measures of multidimensional psychological constructs (Marsh, Morin, Parker, & Kaur, 2014). Failing to model these cross-loadings can lead to inaccurate parameter estimates, so we followed the suggestions of Marsh et al. (2014) to use ESEM with a target rotation specifying primary loadings so that the analyses provide a confirmatory test of measure structure.

Table 3 shows the factor loadings from the ESEM analyses. The two-factor structure representing Connection and Sacredness provided a good to excellent fit to the data across samples and conditions (CFI = .952 to .969; RMSEA = .073 to .097; SRMR = .024 to .030). All primary loadings were significant and strong (.42–92, $p < .001$). Secondary loadings were generally weak (<|.26|), though item 17 had moderate secondary loadings (.32-.38). Cronbach's alphas suggested good internal consistency (Connection, α = .81-.82; Sacredness, α = .78-.85). Because the two subscales were moderately to strongly correlated (*rs* = .57 to .72), we also examined whether these eight items could yield a single total score, but a single-factor solution fit the data poorly in these samples (CFI = .768-.878, RMSEA = .131-.159, SRMR = .063-.083).

Study 1c: criterion, convergent, and discriminant validity

The goal of Study 1c was to examine the construct validity of the SCE (State Collective Effervescence Scale). We did so by examining variables which we

Table 3. Confirmatory ESEM standardized factor loadings and standard errors in datasets 4 and 5 (final items only).

	Dataset 4: Engaged Condition		Dataset 4: Silent Condition		Dataset 5	
	Sacredness	Connection	Sacredness	Connection	Sacredness	Connection
State CE1	**.623*** (.110)	.138 (.112)	**.778*** (.186)	.048 (.182)	**.707*** (.087)	.072 (.076)
State CE4	**.830*** (.066)	−.112 (.059)	**.702***** (.135)	−.235* (.115)	**.704*** (.061)	−.073 (.059)
State CE5	**.917*** (.062)	−.119* (.055)	**.846***** (.085)	−.012 (.070)	**.870*** (.072)	−.117* (.046)
State CE17	**.419*** (.098)	**.380*** (.097)	**.484***** (.136)	**.364*** (.143)	**.507*** (.077)	.315* (.076)
State CE10	.046 (.063)	**.732*** (.064)	.010 (.117)	**.818*** (.110)	−.035 (.056)	**.789*** (.056)
State CE11	−.047 (.078)	**.646*** (.085)	−.072 (.095)	**.823*** (.107)	−.132* (.052)	**.783*** (.056)
State CE12	.264* (.087)	**.528*** (.091)	.190 (.106)	**.600*** (.096)	.223* (.053)	**.588*** (.051)
State CE13	−.045 (.068)	**.758*** (.068)	.113 (.135)	**.649*** (.135)	.153* (.068)	**.506*** (.069)

* $p < .05$. Correlations |.35| or greater are shown in boldface.

predicted to be highly related to the scale and others that should be relatively independent of the scale. In addition, we examined the predictive value of the SCE above and beyond the predictive value of other related constructs. Finally, we examined the degree to which scores on the scale predicted self-reported experiences of collective effervescence. In other words, do high scores on the SCE scales predict feeling as if one experienced CE during an event?

Convergent and discriminant validity

Table 4 shows convergent and discriminant correlations with the SCE in Datasets 4 and 5. In terms of convergent validity, we expected the SCE to be moderately associated (i.e. *r*s = .40-.60) with multiple related, but not identical, constructs. These included awe during the event (Yaden et al., 2018), flow during the event (Jackson & Marsh, 1996), the Tendency to Engage in effervescent Assembly Measure (TEAM; Gabriel et al., 2017), being lost in the moment, enjoying the event, connections to others not there, synchronized behavior, and feeling wonder and amazement during the event[2]. The majority of correlations between the CE and these constructs ranged from .4 to .6. Thus, the SCE was moderately associated with these constructs as hypothesized. Feeling lost in the moment had correlations below .3 in 3 of the 8 analyses, suggesting that it is not always strongly related to SCE. None of the correlations were above .6 (i.e. so strong as to suggest conceptual redundancy), providing support for the hypothesis that state collective effervescence during an event is a distinct construct in the social psychology literature.

Discriminant validity was examined via correlations between the SCE and several constructs with which it should correlate fairly weakly or not at all. Specifically, we hypothesized that correlations with Extraversion, Openness to experience, Relational Self-Construal, Collective Self-Construal, and Religious Faith should show weaker associations with the SCE. This hypothesis was supported, as discriminant correlations were generally below .3. The only exception was correlations with Collective Self-Construal in one of the three samples (the engaged crowd condition) suggesting that SCE is more highly related to collective effervescence in situations in which the crowd is highly engaged. Overall, the pattern of convergent and discriminant correlations support the expected associations of the SCE with similar and distinct established constructs.

Incremental criterion validity

After completing the SCE and answering all other questions about their event, participants in Datasets 1 and 2 were given a description of collective effervescence and were asked to what degree the event they described was a collective effervescent experience. We utilized their responses to that question to examine whether SCE can uniquely predict the degree to which people feel a sense of collective effervescence during an event. Recall that the connection subscale of the SCE scale is correlated with feeling wonder and amazement, positive emotions, engaging in synchronized behaviors, and connection to people not present. Thus, entering those variables in as predictors in the step before the SCE subscales provided a stringent test as to whether the subscales really predict collective effervescence. We ran a hierarchical regression, where SCE subscales was added after positive and negative emotions associated with the event, feeling wonder and amazement at the event, feeling a connection to people who were not there, and engaging in

Table 4. Convergent and discriminant correlations with the CSE.

	Dataset3		Dataset 4 – Engaged		Dataset 4 – Silent		Study 5	
	SCE_C	SCE_S	SCE_C	SCE_S	SCE_C	SCE_S	SCE_C	SCE_S
Convergent Correlations								
Wonder and amazement	.53***	.57***	.57***	.49***	.50***	.46***	.58***	.38***
Lost in the moment	.19**	.35***	.51***	.46***	.34***	.33***	.18***	.19***
Positive Emotions	.44***	.23***	.54***	.33***	.53***	.41***	.59***	.35***
Connection to Those Not There	.46***	.39***	.37***	.53***	.45***	.45***	.37***	.45***
Synchronized Behavior	.33***	.19***	.58***	.40***	.50***	.38***		
TEAM			.46***	.41***	.35***	.30***		
Enjoy Event			.56***	.34***	.44***	.36***	.56***	.38***
Flow at Event							.55***	.51***
Awe at Event							.41***	.56***
Discriminant Correlations								
Extraversion†	.06	.17	.14*	.12	.11	.16*		
Openness to experience†	.22*	.28**	.02	.05	.08	.07		
Relational Self-Construal†	.18*	.13						
Collective Self-Construal	.20**	.22**	.41***	.36***	.16*	.09		
Religious Faith	.18*	.16*						
Friends at Event			.25***	.22***	.13*	.13*		

* $p < .05$; ** $p < .01$; *** $p < .001$. Missing correlations indicate measures not collected in a given sample. † Personality variables were not measured in Study 1b.

synchronized behaviors with others. Results are shown in Table 5. After accounting for the predictive power of other constructs that are highly related to SCE, both subscales of the SCE were significant predictors of the degree to which people identified the event as collective effervescence (change in R^2 = .06). Thus, the SCE uniquely measures real-life experiences of collective effervescence.

Another way to look at whether the scale measures CE or not is to compare how participants in Dataset 1 responded on the two subscales when they were told nothing about CE as compared to later in the study when they were specifically told to write about a CE event. If the SCE scales are measuring collective effervescence, scores on this scale should be higher in the CE condition (relative to the one where it was not mentioned). As predicted, participants reported lower SCE connection and lower SCE sacredness in the neutral condition as compared to the condition in which they listed a highly collective effervescent event ($t(676) = -10.64$; $p < .001$ and $t(676) = -8.42$; $p < .001$, respectively). Thus, both subscales reliably differentiated between events that participants describe as being high in CE versus other kinds of group events. We also examined whether these two conditions differed in perceptions of wonder and amazement, lost in the moment, good mood, or bad mood. In other words, do the connection and sacredness subscales play a special role in distinguishing events that are high versus neutral in collective effervescence or do those events differ in any number of important qualities? CE events did not differ from neutral events in good mood ($p = .54$), bad mood ($p = .33$), or wonder and amazement ($p = .75$). CE events were higher in lost in the moment than neutral events ($t(676) = 1.97$; $p = .05$). However, the effect size was much smaller (Cohen's d = .08) than the effect sizes for connection (Cohen's d = .41) or sacredness (Cohen's d = .32). Thus, the connection and sacredness subscales were able to differentiate between the high CE event and the neutral event in a way that no other avoidable measurement was able.

Discussion of studies 1a – 1c

We predicted and found that the two-factor solution fits the SCE items best, with one factor representing sacredness and the other connection. This is highly consistent with our hypothesis that collective effervescence has two components: connection with others and sacredness. The connection with others subscale contains items that tap into the shared emotion measures that other researchers have used (e.g. 'I felt as if most everyone there felt the same emotions') as well as items more directly tapping into social connection (e.g. 'I felt connected to others who were present at the event'). The sacredness subscale contained items that directly tapped into the idea of a sensation of sacredness as hypothesized by Durkheim (e.g. 'I felt as if there was something sacred about the event') as well as items tapping into other ways in which the event might feel transcend the ordinary (e.g. 'I felt as if the event changed me in some way').

Findings from one of the samples suggested that emotional engagement was also a component of collective effervescence. Interestingly, emotional engagement was not consistent across samples. Positive emotion was positively correlated with negative emotion in one sample but negatively correlated with it in another. This suggests that although collective effervescence may be related to positive emotions in some cases, in other cases it is just related to a strong emotional experience.

Although the SCE scales were related to enjoying the event, feeling lost in the moment during the event, and feeling wonder and amazement during the event, they were predictive of the degree to which people felt that an event was a collective effervescent experience above and beyond these other related phenomena. The SCE scales also differentiated between events that people listed as being high versus neutral in collective effervescence. Importantly, other constructs did not differentiate between them nearly as well. Thus, the scales had unique predictive validity. In summary, the first three studies validated a scale of state collective effervescence that taps into both the connections to others and the sensation of sacredness that are at the heart of the experience.

Studies 2a – 2d: CE in everyday activities

The next set of studies (Studies 2a, 2b, 2c, and 2d) examined the degree to which people feel collective

Table 5. Hierarchical regression analyses of the incremental validity of the CE subscales for feeling CE at event.

	Step 1: Other Variables					Step 2: SCE		Total R^2 ΔR^2 for	
Outcome	GC	SB	W	PE	NE	C	S		CE
Felt CE at event	.28*	.17*	.17*	.22*	−.05	.34*	.14*	.54	.06

Standardized betas from the final model are shown. GC = General Connection (i.e. connection to people who were not present at the event but were in the same collective), SB = Synchronized Behavior (i.e. the degree to which behavior of those present at event was synchronized), W = Wonder and amazement felt at event, PE = Positive Emotion Felt at Event, NE = Negative Emotion Felt at Event. * $p < .001$. The F statistic associated with the final regression model is significant ($p < .001$).

effervescence in everyday activities. As previously mentioned, most research examples of CE have come from events that are rare, special, and coveted: a wedding of a friend or loved one, a concert from a favorite band, a religious pilgrimage, or a political rally with an admired leader. Our central hypothesis was that people would feel collective effervescence in everyday experiences as well. To examine this, four studies were run specifically looking at situations that were *not* special, coveted, and rare. Instead, our goal was to tap into situations that would be typical for our population: watching TV with others, going to class, and being at a group event that is really not of much interest. Study 2a examined CE while watching a TV show with an enthusiastic crowd. Study 2b examined CE while watching a TV show with a quiet crowd. Study 2c examined CE while in a classroom. Finally, Study 2d examined CE while being at the kind of event people typically look at (large group events like wedding or concerts) but one that did not feel rare, special, or coveted. Instead, as often happens with these events, we specifically asked participants to think of a large event that they were not that into and even wanted to leave early. Would we find collective effervescence even in these less rarified situations? To examine this question, Studies 2a and 2b were done in a carefully controlled setting in which all participants experienced the same event, whereas Studies 2c and 2d were recall studies that tapped into naturally occurring situations.

To test whether the everyday situations in Studies 2a – 2d induced feelings of collective effervescence, we utilized a 'floating control' for all four studies. Utilizing a floating control allowed us to conserve experimental resources. Four hundred and two participants (200 female) were in the floating control. These participants were demographically similar to the participants from the experimental conditions: they were drawn from the same participant pool as those in Studies 2a – 2d; they were enrolled in the participant pool in either the same academic or calendar year as in all of Studies 2a – 2d; but they were not participants in Studies 2a – 2d[3]. Participants were given a description of collective effervescence (Gabriel et al., 2017) and were asked to think of an event which was *not* characteristic of a CE experience. We were then able to compare their scores on sacredness and Connection SCE to participants in all four studies. We expected that SCE scores during each of the 'everyday' events would be significantly higher than SCE scores during a non-CE event. We also predicted that SCE scores in each study would be related to positively experiencing the event (e.g. enjoying the event) and feeling connected to others[4].

In Studies 2a-2d, we planned to examine the mean of SCE in each sample, and perform two analyses, a one-way one-sample t-test comparing the SCE in each sample against the floating control, and bivariate correlations between SCE experienced and positive-related outcomes within each sample. A power analysis via G*Power software using a one-way one sample t-test with the aim of yielding a small effect size (f^2 = 0.02) with a power of 0.80 generated a recommended sample size of 156. An estimation including a medium effect size (f^2 = 0.15) yielded a sample size of 27. A power analysis via G*Power software using a bivariate correlation model with the aim of yielding a small effect size (f^2 = 0.02, r = 0.15) with a power of 0.80 generated a recommended sample size of 346. An estimation including a medium effect size (f^2 = 0.15, r = 0.30) yielded a sample size of 84. Considering past related work, we expected effect sizes to exist in the medium range (Gabriel et al., 2017). Therefore, in each of the following studies, we recruited sample sizes which would be adequate for detecting medium effect sizes (Study 2a: N = 113, Study 2b: N = 119, Study 2c: N = 107, Study 2d: N = 254).

Study 2a: CE while watching TV with an engaged crowd

Methods

Participants

We recruited 119 (60 female) undergraduate students from a large state university that was diverse in ethnicity (13 African/African American, 39 Asian/Asian American, 8 Hispanic/Hispanic American, 57 European/European American, and 9 Unspecified) with an average age of 19. Students were recruited as partial fulfillment of a course requirement in a psychology course.

Design

Participants watched an episode of a television show in groups of about 18–65 students and 8–10 research assistants posing as participants. The showings were conducted in a moderately sized classroom with elevated seating and a projector to simulate an intimate movie theater experience. In each session, participants were shown a 25-min episode of *The Twilight Zone*. Participants were told that it was acceptable to interact with the episode and laugh and sing along if they wanted to. Additionally, research assistant confederates who attended the sessions were trained to verbally engage with the episode and encourage a norm of crowd engagement for the participants during these sessions. Immediately after the end of the episode,

participants completed a number of questionnaires on their smartphones.

Measures

State collective effervescence. Participants completed the eight-item state collective effervescence measure validated in Studies 1a – 1c.

Narrative collective assimilation. Narrative collective assimilation refers to the psychological experience of feeling a part of a collective described within a narrative (Gabriel & Young, 2011). It reflects a form of social connection (Gabriel, Valenti, & Young, 2016). Narrative collective assimilation was computed with the mean of the nine items designed to measure assimilating the group presented on the TV show. For the Addams family show, this included items like 'I feel like I belong to an unusual/quirky family' and 'I would feel at home in a haunted house' (α = .79). For the Twilight Zone show, it involved items like 'Supernatural occurrences happen around me with no explanation' and 'I would feel at home in a 1950s era nightclub or comedy club' (the setting of this episode; α = .63). Because two different shows were used, the items were standardized before the mean was created.

Wonder & amazement. A one item question was used to measure wonder and amazement. Participants were simply asked to what degree they agreed with the statement: 'I felt wonder and amazement during the show.'[5] Although not a measure of awe, wonder and amazement are closely related to awe (Shiota et al., 2006).

Lost in the moment. A one-item question was used to measure feeling lost in the moment. Participants were asked how much they agreed with the statement 'I felt like I lost myself in the moment at the event'. Although not a measure of flow, being lost in the moment is a key component of the absorption component of flow (Rheinberg, Vollmeyer, & Engeser, 2003).

General social connection. Connecting to others not at the event was measured by the mean of the items 'I felt connected to people who weren't at the event, but I share an identity with' and 'I felt connected to all of humanity'.

Positive and negative mood. Positive and negative mood during the event were each assessed by single items measuring the degree to which participants felt negative or positive mood at the event.

Liking of the TV show. Liking of the TV show was assessed with the mean of the items 'I liked watching the show' 'I enjoyed watching the show' and 'I disliked the show' (reverse scored).

Own involvement in the show. Personal involvement during the show was assessed with the item 'I got very involved in the show.'

Synchronized behavior. Synchronized behavior during the event was measured by a single item, 'The people in the event were involved in a synchronous activity at all (i.e. everyone doing the same thing at the same time, such as applauding, dancing, laughing, praying, cheering, or some other synchronous activity)', and was answered on a 7-point scale from 'Strongly Disagree' to 'Strongly Agree'.

Results and discussion

We hypothesized that when in an everyday situation such as watching an episode of a television show in a group, participants would feel collective effervescence. As predicted, the mean of the sacredness subscale of the collective effervescence scale (α = .84; M = 3.39; SD = 1.23) was higher than the mean of the sacredness subscale from the floating control (M= 2.59, SD= 1.13) $t(519) = -6.59$, $p < .001$. Similarly, the mean of the connection subscale (α = .87; M = 3.90; SD = 1.24) was higher than in the floating control (connection: M = 2.87, SD = 0.99), $t(519) = -9.40$, $p < .001$. Thus, participants experienced at least small levels of collective effervescence, on average, even when watching a TV show with strangers.

Second, we wished to explore whether SCE was related to positively experiencing the event. We predicted that experiencing SCE would be related to the enjoyment of the event. Hierarchical Regression analyses were run to assess the relationship between the SCE measures and being lost in the moment, feeling wonder and amazement, feeling in synch with other people, narrative collective assimilation, connection to people not at the event, liking of the TV show, feeling involved, negative mood, and positive mood. Statistical details are presented in Table 6. With the exception of feeling negative emotions, at least one of the CE measures predicted each outcome. In some cases, both measures predicted the outcome. Higher CE in the form of both sacredness and of connection was related to greater wonder and amazement, getting lost in the moment, and feeling involved with the show. Only connection was linked to liking the show, feeling

Table 6. Hierarchical regression analyses of the CE subscales in study 2a – engaged TV show.

	SCE		
Outcome	Connection	Sacredness	Total R^2
Wonder and Amazement	.35***	.30**	.34
Lost in the Moment	.21*	.35***	.27
Felt Negative Emotions at event	.08	−.22	.03
Felt Positive Emotions at event	.42***	−.22	.11
Got involved with the show	.27*	.29**	.26
Liked the Show	.30*	.00	.09
Connect to People Not There	.30**	.20	.21
Narrative Collective Assimilation	.12	.23*	.10
People Felt In Synch	.48***	−.06	.20

Standardized betas are shown. The F statistic associated with all final regression models other than negative emotions (n.s.) was significant. * $p < .05$; ** $p < .01$; *** $p < .001$.

positive emotions, feeling connected to people not there, and feeling in synch with other participants. Only sacredness was related to narrative collective assimilation.

In summary, participants felt collective effervescence when watching a TV show with an engaged crowd of strangers, and the level of collective effervescence was related to enjoyment of the activity (e.g. liking the show, getting involved with the show, feeling wonder and amazement) and the fulfillment of social needs (narrative collective assimilation, feeling connected to others who were not there, feeling in synch with the people who were there). Study 2b explored whether collective effervescence was limited to occurring in verbally engaged crowds, or if sacredness and connection could also occur in other kinds of situations, such as during a group event with a silent crowd.

Study 2b: CE while watching TV with a silent crowd

Methods

We recruited 113 (60 female) undergraduate students from a large state university that was diverse in ethnicity (19 African/African American, 29 Asian/Asian American, 12 Hispanic/Hispanic American, 1 Native American, 54 European/European American, and 10 Unspecified) with an average age of 19. Students were recruited for partial fulfillment of a course requirement in a psychology course.

The procedures and measures exactly mirrored Study 2a with two exceptions. Specifically, participants were told that it was important for them to remain quiet during the movie so that they would not disturb other students. Additionally, research assistant confederates attended the sessions and remained quiet to encourage a norm of silence during these sessions.

Results and discussion

We hypothesized that when watching a TV show with a silent group of strangers, participants would experience collective effervescence. As predicted, the mean of the sacredness subscale of the collective effervescence scale (α = .78; $M = 3.42$; $SD = 1.23$) was higher than the mean of the sacredness subscale from the floating control, $t(512) = -6.73$, $p < .001$. Similarly, the mean of the connection subscale (α = .73; $M = 3.77$; $SD = 1.0$) was higher than in the floating control, $t(512) = -8.53$, $p < .001$. Thus, participants experienced at least small levels of collective effervescence, on average, even when watching a TV show with strangers.

Again, we wished to demonstrate that participants experienced CE, even during an event in which the crowd is not verbally engaged in the activity, by examining how the SCE scales were related to enjoying the event and feeling connected with others during the event. Hierarchical Regression analyses were run to assess the relationship between both CE measures and feeling lost in the moment, feeling wonder and amazement, feeling in synch with the other people present, narrative collective assimilation, connection to people not at the event, liking of the TV show, feeling involved, negative mood during the show, and positive mood during the show. Statistical details are presented in Table 7. Although not as strongly related to the outcomes as in Study 2a, SCE was still related to the majority of the outcomes. SCE was not significantly related to feeling lost in the moment, both negative and positive emotions, and feeling involved with the show. Both forms of SCE were related to wonder and amazement and feeling connected to other people here. Although they were also both related to feeling in synch with other people there, sacredness in this study was a negatively related, whereas in Study 2a it was positively related. It could be that during an engaged

Table 7. Hierarchical regression analyses of the CE subscales in a silent TV show (Study 2b).

	SCE		
Outcome	Connection	Sacredness	Total R^2
Wonder and Amazement	.34***	.26**	.26
Lost in the Moment	.20	.06	.05
Felt Negative Emotions at event	−.10	.18	.03
Felt Positive Emotions at event	.17	−.01	.03
Got involved with the show	.16	.16	.07
Liked the Show	.25*	−.05	.06
Connect to People Not There	.24*	.28**	.20
Narrative Collective Assimilation	−.10	.34***	.10
People Felt In Synch	.31**	−.12*	.08

Standardized betas are shown. The F statistic associated with all final regression models other than the ones for liking the show (n.s.) negative mood (n.s.) positive mood (N.S.) and feeling lost in the moment ($p = .05$) were significant. * $p < .05$; ** $p < .01$; *** $p < .001$.

activity, feeling in synch with others pulls one into the activity itself and thus leads to a feeling of sacredness. However, in a quiet activity, the synching with others may involve not paying attention and/or being on one's phone, and this behavior then lead to less sacredness. Only Sacredness SCE was related to narrative collective assimilation and being lost in the moment. Only Connection SCE was related to feeling connected to people who were not there.

Study 2c: CE in the classroom

Methods

We recruited 107 (58 female) undergraduate students from a large state university that was diverse in ethnicity (6 African/African American, 28 Asian/Asian American, 12 Hispanic/Hispanic American, 66 European/European American, and 7 Unspecified) with an average age of 19. Students were recruited as partial fulfillment of a course requirement in a psychology course.

Participants completed a survey on the external website Qualtrics. First, participants were asked to think about the last time they were in a classroom of about 50 people, and were asked to briefly describe the event. Then, they were asked questions assessing the collective effervescence they felt during that event. Participants were specifically asked to describe the last time they had been in class of around 50 people because we did not want them to specifically pick out a time that was special to them; rather, we wanted them to access a relatively normal classroom experience to test if CE was could be experienced even during a relatively mundane event, such as attending class. Finally, participants completed the same measures as in Studies 4a and 4b.

Results

We expected that even during a mundane large group event, such as an average day attending class, participants would, on average, experience some collective effervescence. As predicted, the mean of the sacredness subscale of the collective effervescence scale (α = .78; M = 3.30; SD = 1.25) was higher than the mean of the sacredness subscale from the floating control, $t(507) = -5.66$, $p < .001$. Similarly, the mean of the connection subscale (α = .73; M = 3.90; SD = 1.0) was higher than in the floating control, $t(507) = -9.80$, $p < .001$. Thus, participants experienced at least small levels of collective effervescence, on average, even when in a mundane classroom setting.

To test whether feelings of collective effervescence were related to other positive group-related outcomes, we conducted several regression analyses. Hierarchical Regression analyses were run to assess the relationship between both CE measures and being lost in the moment, feeling wonder and amazement, connection to people not in the class, negative mood during the class, positive mood during the class, and a feeling that everyone there was in synch. Statistical details are presented in Table 8. Even in a classroom setting, CE was a strong predictor of other positive group-related experiences. Sacredness predicted feeling lost in the moment. Connection CE predicted feeling connected to people who were not there and feeling like the students in the class were all in synch. Both types of CE predicted feeling wonder and amazement and positive emotions. Neither kind of CE was related to negative emotions. In summary, even in an average classroom situation, participants reported collective effervescence and CE was related to other positive outcomes such as positive mood, feeling connected to people not present, and a feeling of being in synch with the other students.

Table 8. Hierarchical regression analyses of the CE subscales in Classroom study (Study 2c).

	SCE		
Outcome	Connection	Sacredness	Total R^2
Wonder and Amazement	.44***	.30***	.44
Lost in the Moment	.18	.32**	.20
Felt Negative Emotions at event	.07	.11	.02
Felt Positive Emotions at event	.28**	.26*	.23
Connect to People Not There	.62***	.06	.42
People Were In Synch	.25*	.19	.15

Standardized betas are shown. The F statistic associated with all final regression models other than the one for feeling negative emotions (n.s.) were significant. * $p < .05$; ** $p < .01$; *** $p < .001$.

Study 2d: uninteresting events and CE

Methods

Participants and design

We recruited 253 (105 female) undergraduate students from a large state university that was diverse in ethnicity (22 African/African American, 62 Asian/Asian American, 21 Hispanic/Hispanic American, 2 Native American/Alaska Native, and 152 European/European American, 14 unidentified) with an average age of 19. Students were recruited as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study, participants completed the survey on the external website Qualtrics[6].

Participants were instructed to write a short description about an event in which they felt uninterested and uninvolved. Then, they were asked the same questions from Study 2c assessing the collective effervescence

they felt during that event. We also included some additional measures to assess group-related phenomena in new ways.

Materials and measures

Uninterested group event writing prompt. 'Please think of a time when you were in a big crowd of people at some kind of gathering. It could be a religious event, a concert, a sporting event, a festival, a convention, a memorial, a wedding, a political rally, a movie, or any other event. Think of an event in which you were not interested in what was going on and you were ready for it to end well before it did. Think of an event at which you were uninterested and felt uninvolved. Very briefly describe the event (e.g. "A concert I went to because my roommate asked me to go with her")'.

Event enjoyment. Enjoyment of the event was measured with the single item, 'How much did you enjoy the event?' and was answered on a 7-point scale from 'Strongly Disagree' to 'Strongly Agree'.

Others' event enjoyment. Others' enjoyment of the event was measured with the single item, 'How much would you guess other people enjoyed the event?' and was answered on a 7-point scale from 'Strongly Disagree' to 'Strongly Agree'.

People present. The number of people estimated to be present at the event was measured by a single item: 'Approximately how many people would you guess were at the event? (please enter a numerical digit).'

Friends present. The number of friends estimated to be present at the event was measured by a single item: 'How many friends (and other relationship partners) were you hanging out with at the event?' Participants entered a numerical digit in response to this question.

Flow. The flow was assessed using three items from the absorption component of the flow scale (Rheinberg, Vollmeyer, & Engeser, 2003). The three items included, 'I did not notice time passing', 'I was totally absorbed in what I was doing', and 'I was completely lost in thought'. The reliability of these three items was α = .92.

Crowd engagement. The degree to which the crowd was engaged in the activity was assessed using three face valid items. The items included, 'The crowd seemed to be very involved in the event', 'The crowd seemed to be very responsive to the event', and 'the crowd seemed to be uninterested in the event'. The reliability of these three items was α = .76.

Results

Within this sample, 18% of participants wrote about a concert, 15% about spending time with a group of friends, 13% about a sporting event, 13% about a religious event, 10% about being at school or work, 6% about a movie, 6% about a family event, 4% about festival, 2% a wedding, 2% the theater, 2% graduation, and 2% a dance. The remaining events had less than 1% of participants or were unidentifiable.

We expected that even during a large group event at which participants felt uninterested they still may have experienced some collective effervescence. As predicted, the mean of the sacredness subscale of the collective effervescence scale (α = .81; M = 3.11; SD = 1.41) was higher than the mean of the sacredness subscale from the floating control, $t(654) = -5.15$, $p < .001$. Similarly, the mean of the connection subscale (α = .77; M = 3.74; SD = 1.28) was higher than in the floating control, $t(654) = -9.75$, $p < .001$. Thus, participants experienced at least small levels of collective effervescence, on average, even when watching a TV show with strangers.

Hierarchical Regression analyses were run to assess the relationship between both CE measures and feeling lost in the moment, wonder and amazement, connection to people not at the event, negative mood at the event, positive mood at the event, and enjoyment of the event, perception that others enjoyed the event, number of people present at the event, friends present at the event, and flow at the event. Statistical details are presented in Table 9. Both kinds of CE were related to enjoying the event, positive mood at the event, the negative mood at the event, wonder and amazement, being lost in the moment and connecting to people who

Table 9. Hierarchical regression analyses of the CE subscales at uninterested event (Study).

	SCE		
Outcome	Connection	Sacredness	Total R^2
How much did you enjoy the event?	.42***	.25***	.35
How much did others enjoy the event?	.08	.05	.01
How many people were present at the event?	.16*	−.10	.02
How many friends were you with at the event?	−.01	.06	.00
Flow at event	.23***	.44***	.35
Positive Mood at Event	.49***	.20***	.37
Negative Mood at Event	−.38	−.26	.31
Crowd engaged	.07	−.02	.00
Wonder and Amazement	.36***	.35***	.38
Lost in the Moment	.19**	.33***	.21
Connect to People Not There	.32***	.37***	.36
People Were In Synch	.44***	.06	.22

Standardized betas are shown. The F statistic associated with all final regression models other than the one for feeling negative emotions (n. s.) were significant. * $p < .05$; ** $p < .01$; *** $p < .001$.

were not there. Connection SCE was related to how many people were there and how in synch the people were.

None of the variables relevant to other people were related to either kind of SCE. Specifically, SCE was unrelated to how many friends were at the event, how much others enjoyed the event, or how engaged the crowd was. This is likely due to the nature of the event; many participants listed events that they were dragged along to by a family member of friend. Therefore, the enthusiasm of the crowd may have been less related to their own experience.

In summary, even in an event that people were not enjoying, CE was related to enjoyment of the event. The connection was related to both positive and negative emotions. Connection was also related to liking the event above and beyond the effects of lost in the moment and wonder and amazement. In addition, both variables were related to feeling connected to others who were not there and feeling as if the people there were in synch with one another. SCE was unrelated to being personally involved in the event.

Discussion of studies 2a, 2b, 2c, and 2d

Studies 2a – 2d found evidence that people can find small amounts of collective effervescence in everyday activities. Participants in these studies either watched an old TV show in an energetic or quiet crowd, remembered the last time they were in a classroom with about 50 people, or remembered the last time they were in a crowd and were ready to go home or were not very interested. By comparing each studies' participants to a floating control, we found support for our hypothesis that, in all of these cases, participants experienced, on average, some level of both transcendent and connective collective effervescence.

In addition, collective effervescence was also related to other, mostly positive, group phenomena. Feeling wonder and amazement was associated with both sacredness and Connection SCE in all of the studies. Connecting to people not there, feeling in synch with others, and positive mood tended to be more strongly related to Connection SCE. Conversely, feeling lost in the moment, feeling the flow, and experiencing narrative collective assimilation were more consistently associated with Sacredness SCE. In summary, a plethora of mostly positive group phenomena were related to levels of SCE experienced by participants across four different common events. Thus, not only did participants feel some level of SCE in our studies, but that level of SCE was meaningful and related to other group phenomena.

In summary, by exposing participants to a common situation or asking them to remember one, Studies 2a – 2d suggests that people experience collective effervescence during common, everyday experiences. Studies 3a and 3b examine this same question slightly differently by providing people with a definition of everyday collective effervescence and asking them how often they experience it. We predicted that they would experience SCE regularly and that regular experiences of SCE would be associated with higher wellbeing.

Studies 3a and 3b – everyday collective effervescence

In the final two studies, we sought to add further support to Hypothesis 2, that CE experiences are commonly experienced during regular unspectacular events. We also sought to examine Hypothesis 3 by testing whether the frequency and intensity of CE experienced during everyday events is related to positive wellbeing outcomes including feeling a sense of social connection, feeling that there is a meaning to life, feeling awe, and satisfaction with life, over and above other means of fulfilling belongingness needs such as social acceptance, sociocultural orientation, and self-construal. In Study 3a, we examined these hypotheses in a student population, and in Study 3b, we examined these hypotheses in a national sample more representative of adult populations.

A power analysis via G*Power software using a bivariate correlation model with the aim of yielding a small effect size ($f^2 = 0.02$, $r = 0.15$) with a power of 0.80 generated a recommended sample size of 346. An estimation including a medium effect size ($f^2 = 0.15$, $r = 0.30$) yielded a sample size of 84. Considering past related work, we expected effect sizes to exist in the medium range. Therefore, in each of the following studies, we recruited sample sizes which would be adequate for detecting medium effect sizes (Study 3a: N = 273, Study 3b: N = 239).

Study 3a: students' belonging and everyday CE

Methods

Participants

We recruited 273 (91 female) undergraduate students from a large state university that was diverse in ethnicity (31 African/African American, 56 Asian/Asian American, 27 Hispanic/Hispanic American, 2 Native American/Alaska Native, 172 European/European American, and 12 Other) with an average age of 19.04 (*SD* = 1.17).

Students were recruited to participate as partial fulfillment of a course requirement in a psychology course. After indicating their willingness to participate in the study, participants completed the survey on the external website Qualtrics.

Design

Participants were randomly assigned to answer a series of questions in one of two orders. One group of participants first described and answered questions about an event in which they were in a large crowd of people, and then answered a series of questionnaires about their social connections and belongingness needs. To account for order effects, a second group of participants first answered questions about social connections and belongingness needs and then completed the group event-related questions and writing prompt. After completing both sections, participants completed demographic questions and were then thanked, debriefed, and dismissed.

Materials

Group Event Frequency Prompt. 'We all spend some time alone every day and some time with other people. We are wondering how often you find yourself in a crowd of people where you feel at least a slight connection to the other people (even if you do not know them) and at least a slight sense that the event is special in some way (even if it is not a big way). This could be something big like going to a concert or something small like being in an elevator with other people, being in a classroom with others, taking an exercise class with others, playing video games with other people, or even walking down a crowded sidewalk. It just has to be an event where you feel some kind of connection to the other people involved (even if it is a small one) and you feel like the event is special in some way (even if it is a really small way). How often do you experience that kind of event?' After reading this prompt, participants selected an answer on a seven-point scale from 'I typically experience this multiple times a day' (1) to 'I rarely or never experience this' (7).

Group Event Example Prompt. 'For the last question, we asked you to estimate how many times you are in groups and feel at least some small level of connection to others and that the event is at least a little bit special. For the next few questions, we'd like to hear about an event that you think is the most typical for you of this kind of event. When you think of an event like that, what pops to mind? Please describe it in just a few words:'

Measures

State collective effervescence. To assess the collective effervescence that participants experienced during the event they described, the eight-item state collective effervescence scale, which is being developed in Study 1, was used. The α reliability for this scale in this sample was .86.

Dispositional collective effervescence. An individual's trait-level tendency to feel collective effervescence was measured with the Tendency for Effervescent Assembly Measure (Gabriel et al, 2017). This 11-item measure assesses the types of feelings associated with social connectedness to a present crowd, such as 'I feel very connected to others when in a large group activity I like, like going to a concert, church, or convention'. Items from this scale reflect each individual's tendency to seek out and enjoy collective effervescent (CE) events. The α reliability for this scale in this sample was .87.

Dispositional awe. One's propensity to feel awe in everyday life was assessed using the Awe subscale of the Dispositional Positive Emotions Scale (Shiota et al., 2006). These five items measure the tendency to have experiences and emotions related to awe, such as 'I seek out experiences that challenge my understanding of the world', and 'I often feel awe'. The α reliability in this sample was .84.

Relational and collective interdependent self-construal. To assess relational and collective interdependent self-construal, the 12-item Relational-Interdependent Self-Construal Scale (RISC; Cross et al., 2000) and 12-item Collective-Interdependent Self-Construal Scale (Gabriel & Garnder, 1999) were used. These measures assess the tendency to think of oneself in terms of relationships with close others and groups of others. An example item assessing relational self-construal includes, 'My close relationships are an important reflection of who I am'. An example item assessing collective self-construal includes, 'The groups I belong to are an important reflection of who I am'. Cronbach's alpha for the 12-item collective self-construal scale in this sample was .90. Crohnach's alpha for the 12-item relational self-construal scale in this sample was .88.

Preference for solitude. Participants' preference for spending time alone was assessed using the 12-item Preference for Solitude Scale (Burger, 1995). Participants are asked to choose one of two statements which best describes them. An example choice includes, 'a. I enjoy being around people; b. I enjoy being by

myself'. Cronbach's alpha for this scale in this sample was .75.

Loneliness. To assess an individual's perception of social isolation, the three-item Short Scale for Measuring Loneliness (Hughes, Waite, Hawkley, & Cacioppo, 2004) was used. This scale was developed by selecting the three highest loading items on the first factor of Revised UCLA loneliness scale (R-UCLA; Russel, 1996). Participants select how often they feel each experience on a scale of 1–3: 1 (Hardly Ever); 2 (Some of the time); 3 (Often). An example item includes, 'How often do you feel that you lack companionship?' Cronbach's alpha for this scale in this sample was .84.

Personality. To assess personality, the 10 Item Personality Inventory (Gosling et al., 2003) was used. This questionnaire assesses the Big-Five dimensions of personality in a brief measure. Two items assess each of the Big Five. An example item from the extraversion subscale of this scale includes, 'I see myself as: Extraverted, enthusiastic.'

Satisfaction with life. To assess subjective life satisfaction, the five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) was used. An example item from this scale includes 'In most ways my life is close to my ideal'. The Cronbach's alpha for this scale in this sample was .88.

Collective self-esteem. To assess individual differences in self-esteem related to one's social groups, the 16-item Collective Self-Esteem Scale (Luhtanen & Crocker, 1992) was used. An example item from this scale includes, 'In general, I'm glad to be a member of the social groups I belong to'. Cronbach's alpha for this scale in this sample was .88.

Meaning in life. To assess the search for and presence of participants' meaning in life, the 10-item Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler, 2009) was used. An example item from this scale includes, 'I understand my life's meaning'. Cronbach's alpha for this scale in this sample was .73.

Collectivism and individualism. To assess the endorsement of collectivistic and individualistic values, the 18-item Concise Scale of Individualism-Collectivism (Chen et al., 2015) was used. An example of an item assessing individualism includes, 'All individuals in society are absolutely independent from each other'. An example of an item assessing collectivism includes, 'Individuals may not be able to survive if there is no group or country'. Cronbach's alpha for the individualism subscale was .68. Cronbach's alpha for the collectivism subscale was .70.

Social surrogacy use. To assess how often participants may use a favorite television show as a social surrogate, two items were presented. The two questions were the following: '1. Watch one of my favorite TV shows- an episode I've never seen' and '2. Watch one of my favorite TV shows- a rerun'. Participants were asked to select how often they do each activity on a seven-point scale from 1 ('I never do that') to 7 ('multiple times a day').

Social connectedness. To assess participants' sense of social belongingness and the general need for social reassurance, the eight-item two-factor Social Connectedness and Social Assurance Scale (Lee & Robbins, 1995) were used. An example item from the Social Connectedness factor includes, 'I feel disconnected from the world around me'. An example item from the Social Assurance factor includes, 'I feel more comfortable when someone is constantly with me'. Cronbach's alpha for this scale in this sample was .94.

Happiness with friends. To assess general positive attitudes towards friends, participants answered 12 questions about their friend group that were written by the experimenters. An example item includes, 'I can't imagine a better group of friends'. Cronbach's alpha for this scale in this sample was .88.

Perceived social inclusion. To assess participants' feelings of being accepted by others, participants completed the nine-item inclusion scale, which was developed to reflect how much an individual is liked or accepted by others (Mahadevan, Gregg, & Sedikides, 2018). An example item from this scale includes, 'Most of the time I feel that people like me as a person'. Cronbach's alpha for this scale in this sample was .83.

Desire for social inclusion. To assess participants' feeling that being accepted by others is important to them, participants indicated the degree to which 10 items describe them (Mahadevan, Gregg, & Sedikides, 2018). An example item from this scale is 'Above all, I want to be accepted'. Cronbach's alpha for this scale in this sample was .90.

General belongingness. To assess participants' general experience of belongingness, participants were asked to select one of five images depicting a green dot surrounded by other colored dots. Participants are provided the following instructions: 'There are many ways to feel

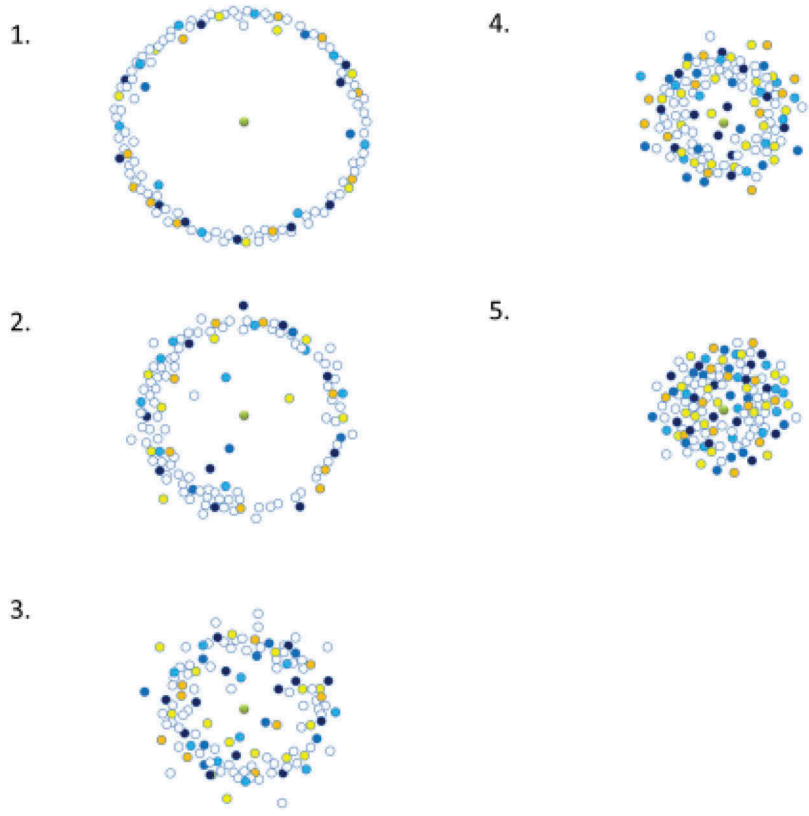

Figure 2.

State Belonging Measure.Instructions: There are many ways to feel connected to others (i.e through friends, romantic partners, groups, pets, online connections, etc.). In each of the following pictures, imagine you are the green dot. Which picture best represents how you feel about your social connections?

connected to others (i.e. through friends, romantic partners, groups, pets, online connections, etc.). In each of the following pictures, imagine you are the green dot. Which picture best represents how you feel about your social connections?' In each image, the green dot is at the center of the image, while other dots move increasingly closer to the green dot. (see Figure 2).

Results

The data support our hypothesis that people experience collective effervescence frequently. Over three quarters (78.3%) of participants reported experiencing collective effervescence at least once a week. Almost a third of participants (30.6%) describe experiencing collective effervescence at least once a day. The median and modal response were both option 4 – 'I typically experience this a few times a week' (the mean was 3.83 on a seven-point scale). In other words, the average person experiences collective effervescence multiple times per week.

We examined the means for Connection SCE and Sacredness SCE to examine whether the events people described really were CE events. The mean for connection was 5.12 (SD = 1.01) and the mean for sacredness was 4.25 (SD = 1.22). Both means were well above the midpoint of the 7-point scale and were higher than the means in the previous studies. Thus, the events people thought about while answering this question did seem to be CE events and were being experienced quite regularly.

We computed a mean of the frequency of experiencing CE events, the sacredness felt at those events and the connection felt at those events (3 items; α = .60) to form a measure of the overall degree to which people feel CE in their day to day lives (accounting for both the frequency and the severity). We also combined the four measures of satisfaction with belonging – happiness with friends, collective self-esteem, social connection, and loneliness (reverse scored) into one reliable measure of overall social satisfaction (4 items; α = .83). We then examined the correlations between the overall degree to which people feel CE in their lives (as well as the individual components of that measure). As we expected, the amount that people felt CE in their day-to-day lives was correlated with the general tendency for effervescence assembly, collective self construals, relational self construal, and collectivism as well as well-being related measures such as feeling awe in life, meaning in life, feeling accepted in life, and being satisfied with life (see Table 10).

Table 10. Correlations of the frequency of CE, CE Connection, and CE sacredness (Study 3a).

	Frequency			
	Everyday_CE	CE	CE C	CE S
Overall Social Acceptance Composite	.24***	.17**	.36***	.11*
Preference for Solitude	−.18**	−.14**	−.14**	−.15**
Satisfaction with life	.13*	.15**	.22***	.10
TV as Social Surrogate	.16**	.05	.07	.23***
Need for Social Acceptance	.19**	.11*	.20***	.13**
TEAM	.46***	.24***	.45***	.27***
Collective Self Construal	.36***	.20***	.40***	.28***
Relational Self Construal	.37***	.18***	.49***	.21***
Extraversion	.19**	.13**	.17**	.11**
Agreeableness	.12*	.11*	.17**	.02
Conscientiousness	.12*	.07	.23***	.08
Neuroticism	.00	−.01	.02	−.03
Openness to Experience	.10	.10*	.17**	.05
Dispositional Awe	.21***	.15**	.25***	.14**
Meaning in Life	.27***	.14**	.32***	.24***
Individualism	.00	−.08	.00	.08

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

We also predicted that everyday CE would be related to positive outcomes such as meaning in life, satisfaction with life, feeling connected to others, and feeling awe above and beyond the effects of other social variables. In order to examine this hypothesis, we ran a series of hierarchical regressions in which need for social acceptance, individualism, collectivism, collective self-construal, and relational self-construal were all entered into the model in the first step and everyday CE was entered into the second step. In three out of the four models, everyday CE was a significant predictor even when all of the other social variables were entered first (See Table 11). Thus, above and beyond the effects of many other kinds of social connections, experiencing CE in one's day to day life predicts feeling awe regularly, being connected to others, and feeling as if life has meaning.

Finally, we were interested in seeing what kind of events people were thinking of as typical for an experience of collective effervescence. The most common were spending time with friends (20.8%) and concerts (18.0%). People also frequently listed being in class (12.1%), and being with strangers in public (10.4%), exercising with others (4.9%), watching to a sporting event (4.2%), playing video games with others (2.9%), studying in a public place like a library (2.8%), going to a club meeting (2.8%), attending a religious event (2.5%), and being at work (2.1%). Being with strangers in public (the fourth most popular response) included activities like walking to class through a crowd, holding a door open for strangers, being in an elevator with strangers, and waiting in a long line with strangers.

Study 3b attempted to replicate the main findings of Study 3a with a non-college student sample.

Study 3b: everyday CE in a national sample

Methods

Participants

We collected data using an online sample from ResearchMatch, a website that allows individuals throughout the United States to volunteer to participate in research studies. Participants who volunteered for this study were sent a unique anonymous link and completed the survey on the external website Qualtrics. At the end of the survey collection, a total of 284 individuals participated in this study. With online national research-based samples, we utilize an attention check that plainly asked participants to respond with a specific answer on the presented scale. From this test, 45 participants did not pass; therefore, 239 participants were included in final analyses. These participants included 177 women (54 men, 8 other), were mostly European/European American (9 African/African American, 9 Asian/Asian American, 4 Hispanic/Hispanic American, 3 Native American/Alaska Native, 210 European/European American, 4 Other), and had an average age of 51.23 years (SD = 17.61).

Design

Participants were instructed to write a short description about an event in which they were in a big crowd of people at some kind of gathering and answered questions about this event. Then, participants answered a series of questionnaires about their social connections and belongingness needs. After completing all

Table 11. Hierarchical regression analyses of the incremental validity of everyday CE (Study 3a).

	Step 1: Other Variables					Step 2: Total R^2 ΔR^2 for		
Outcome	NSAS	Ind	Col	CSC	RSC	Everyday CE		
Composite Acceptance	−.33***	−.11*	−.04	.15	.40***	.13*	.30	.02
Meaning in Life	−.05	.10	.05	.27**	.00	.20**	.11	.03
Dispositional Awe	−.06	−.08	−.06	−.04	.15	.22**	.07	.04
Satisfaction with Life	−.28***	.02	.09	.02	.33***	.06	.15	.01

Standardized betas from the final model are shown. NSAS = Need for social acceptance, Ind = Individualism, Col = Collectivism, CSC = collective self-construal, and RSC = Relational Self Construal. The F statistic associated with all final regression models was significant ($p < .001$). * $p < .05$; ** $p < .01$; *** $p < .001$.

measures, participants completed demographic questions and were thanked, debriefed, and dismissed.

Materials and measures. Participants were first asked how often they experience an event in which they are in a crowd, experienced connectedness to others involved, and experienced a feeling that the event is special in some way. The directions and questions were identical to Study 3a. Unlike Study 3a, participants were also asked what percentage of these kinds of events are 'small events' or 'big events'.

Big/small group event percentage prompt. 'What percentage of the events you experience are small (like being in an elevator with other people, being in a coffee shop with others, taking an exercise class with others, playing video games with other people, or even walking down a crowded sidewalk) instead of big (like going to a concert). Use the slide below to answer the question. For example, if all the events you were thinking of were small you would slide to 100%. If half were small you would slide to 50%, etc … ' Participants were then presented with two sliders from 0 to 100 to describe the percentage of experiencing small events and the percentage of experience big events.

The *Group Event Frequency Prompt* and the *Group Event Example Prompt* were identical to those used in Study 3a.

The measures for *State Collective Effervescence* (α = .88), *Dispositional awe* (α = .85), *Satisfaction in Life* (α = .90), *Meaning in Life* (α = .76), and *General Belongingness* were all the same as the measures used to assess these constructs in Study 3a. The other measures from Study 3a were not administered due to time constraints.

Results

The data support our hypothesis that people experience events during which they feel at least some collective effervescence frequently. Almost exactly mirroring Study 3a, approximately three quarters (75.3%) of participants reported experiencing collective effervescence at least once a week. Over a third of participants (33.9%) described experiencing collective effervescence at least once a day. The median and modal response were both option 4 – 'I typically experience this a few times a week' (the mean was 4.13). In other words, the average person, even in a diverse national sample of older participants, experiences collective effervescence multiple times per week.

We examined the means for Connection SCE and Sacredness SCE to examine whether the events people described really were CE events. The mean for connection was 5.02 (SD = 1.13) and then mean for sacredness was 4.06 (SD = 1.57). Both means were above the midpoint on the seven point scale and were higher than the means in the previous studies. Thus, the events people were thinking of did seem to be CE events, even though they were experienced quite regularly.

We then examined whether everyday CE was related to positive outcomes. We computed a mean of the frequency of experiencing CE events, the sacredness felt at those events and the connection felt at those events (3 items; α = .58) to form a measure of the overall degree to which people feel CE in their day-to-day lives (accounting for both the frequency and the severity). We then examined the correlations between the overall degree to which people feel CE in their lives (as well as the individual components of that measure) and several wellbeing related outcomes. As we expected, and mirroring the findings from Study 3a, the amount that people feel CE in their day-to-day lives was correlated with a general sense of social connection ($r = .302$; $p < .001$), feeling awe in life ($r = .271$; $p < .001$), meaning in life ($r = .275$; $p < .001$), and being satisfied with life ($r = .353$; $p < .001$).

Finally, we were interested in seeing what kind of events people were thinking of as typical for collective effervescence. Within this sample, the most common were working out (17.8%), interactions with strangers in public (11.5%), being at work (11.5%), and spending time in a coffee shop (9.2%). People also frequently listed going to concerts (5.5%), being with family (3.2%), clubs or other organizations (5.1%), watching sports (5.1%), being with friends (3.2%), being in a classroom (2.8%), going to parties (2.8%), watching to a sporting event (4.2%), playing video games with others (2.9%), and walking in the park (2.3%). This population sometimes wrote much longer and more interesting descriptions of their events than the student population; therefore, we include some of their descriptions in Table 12 to provide a flavor of the kinds of events people described.

Discussion for studies 3a and 3b

Studies 3a and 3b were highly consistent with the hypotheses that people experience collective effervescence regularly and that it is associated with positive outcomes. Across both studies, about three-quarters of participants experienced a collective effervescent event at least once a week and about a third experienced it every day. Thus, collective effervescence is not a rare event; instead it is a part of people's regular lives. In addition, both Studies 3a and 3b demonstrated that experiencing collective effervescence was associated with positive life outcomes such as feeling a sense of

Table 12. Sample descriptions of typical collective effervescence events from participants in Study 3b.

- Being in a hospital with other health-care workers that I do not know
- Working the front desk at work once a week.
- A sense of comradery during/after a shared experience (something unusual, funny, startling, etc.).
- A typical example of this for me would be a shared observation or experience, like witnessing something peculiar while waiting in line.
- Attending something where I am waiting in line and have a conversation with someone else in line.
- Being able to relate through a spontaneous small talk waiting for something (e.g. inline, elevator, etc.)
- Seeing a bad driver and another driver sees it too.
- Was in doctor's office chatting about how the doctor is always running late and how annoying it is
- There is something weird about being on the bus in the morning with everyone going to work. There is a peculiar collective aura of people just doing their duty … including the bus driver.
- Walking down the street downtown in the city, surrounded by other people
- selecting produce in a grocery store
- I went to get flowers & vegetable plants today – I talked to a couple of people (other customers) about gardening & what varieties of vegetables they had experience with & any hints they could share. There were quite a few people at the garden center and I connected with a few due to the subject matter we all had in common. I also know that people like to talk about themselves and their interests and that I could get the info. I needed without having to reveal much about myself. This was a special event because I rarely go out and interact with people.
- Probably would be in a store aisle or cash register line.
- Walking down the street saying hello to acquaintances as well as strangers.
- I ride the bus a lot. Sometimes if the weather outside the bus is extremely weird it feels like we're all safely cocooned in there together. Also, sometimes the bus is just friendly and warm in a special way.
- Having coffee in the coffee shop. I feel we are all there for some reason, many just to get coffee, others who are a little lonely and feel connected to people somewhat at that coffee shop.
- I perform with a senior chorus and love to interact with our audiences and other chorus members.
- When running a race, such as a marathon with other runners.
- I feel a connection to others in my yoga class even though I do not know them personally

social connection, finding meaning in life, feeling awe, and being satisfied with life. Study 3a further suggested that collective effervescence predicts positive outcomes above and beyond other social variables. When social acceptance, individualism, collectivism, collective self-construal, and relational self-construal were all entered into the model in the first step, everyday CE was still a significant predictor feeling happy with one's social connections, feeling awe regularly, and feeling as if life has meaning. Thus, Studies 5a and 5b found support for the hypothesis that collective effervescence is common and that it is important for wellbeing above and beyond the effect of other kinds of social connections.

General discussion

It's easy to imagine collective effervescence when we think about a crowd worked into a frenzy by their favorite music artist, political figure, sports team, or religious leader. However, in the current work, we argue that collective effervescence is more than an extreme reaction to an unusual collective event. Instead, collective effervescence is something that we frequently experience, to some degree or another, when we are with groups of people. It contains both a feeling of connection to the other people present and a feeling of sacredness. It happens regularly and it is psychologically important.

In the first three studies, we predicted and found that collective effervesce is best measured with two subscales, one for sacredness and the other connection. The connection subscale contains items that tap into the shared emotion measures that other researchers have used to assess collective effervescence, as well as items which more directly reflect social connection. The sacredness subscale contained items that directly tapped into the idea of a sensation of sacredness, as hypothesized by Durkheim, as well as items tapping into other ways in which the event might feel transcend the ordinary. In some cases, collective effervescence was related to just a positive mood, whereas in others, it was related to strong emotionality generally. This is consistent with a conception that although collective effervescence generally occurs in positive situations (e.g. concerts) it can also occur in negative situations (e.g. funerals). The two SCE scales predicted important outcomes above and beyond the effects of other group phenomena. To our knowledge, this is the first scale to assess a specific instance of collective effervesce.

The next four studies found evidence that collective effervescence occurs during unexceptional activities. Studies 2a – 2d found evidence that people can find small amounts of collective effervescence in everyday activities. Although the mean collective effervescence experienced in these studies was low, it was well above the bottom of the scale and it was higher than in the No CE control. Not only did participants feel some level of collective effervescence in those unlikely circumstances, but the amount of SCE experienced was also related to the enjoyment of the event. Positive mood was related to collective effervescence in all four of the studies. It was also related to different kinds of social connections such as feeling in synch with other people, feeling connected to people not present, and feeling connected to the social worlds within the TV shows (narrative collective assimilation).

The final two studies presented evidence that people experience collective effervescence with regularity. Studies utilizing a student sample and an older national sample found highly consistent patterns. In both cases,

about three quarters of participants experienced collective effervescence at least once a week and about a third experienced it every day. In addition, experiencing collective effervescence was associated with positive life outcomes such as feeling a sense of social connection, finding meaning in life, feeling awe, and being satisfied with life above and beyond the effects of other variables. Even after the effects of social acceptance, individualism, collectivism, collective self-construal, and relational self-construal were all accounted for, collective effervescence was still a significant predictor of feeling happy with one's social connections, feeling awe regularly, and feeling as if life has meaning. Therefore, even common, unspectacular instances of experiencing collective effervescence are psychologically meaningful.

One limitation of the current studies is that although we showed links between collective effervescence and positive outcomes, we did not demonstrate that collective effervescence leads to positive outcomes. However, previous research has been able to show causal pathways between components of collective effervescence and positive outcomes (Paez et al., 2015). Our goal was to show what collective effervescence is, that it occurs for common events, that it occurs a lot, and that it is related to various wellbeing measures. When combined with previous work, this research suggests that collective effervescence is an important part of the human experience that has been, thus far, understudied. People are finding ways to feel connected and feel as if life is meaningful with small, but important events like sitting in coffee shops, going to class, enjoying music, and even waiting in line with others. This research is only the beginning of understanding this important part of the human experience.

The current work is highly consistent with a conceptualization of human beings as driven by strong, automatic social motivations (Gabriel et al., 2016). People do not generally think about being in a lecture hall or watching TV with others as fulfilling social needs and as psychologically important, but this work is consistent with a conceptualization of these experiences as being important and pervasive pathways to fulfilling the need to belong and making life feel more meaningful. Therefore, the current research is consistent with a view of humans as fundamentally social creatures that find rewards just from being near other people even when we are unaware of the nature of the reward or the reason behind it.

Conclusion

Paradoxically, this paper makes arguments that collective effervescence is both very commonplace and seemingly banal and yet also very important psychologically. Durkheim may have spoken of collective effervescence as being important due to its power to separate the sacred from the profane, but the current research suggests that collective effervescence may do more than that. It may take that which is most common and seemingly least special and elevate it to a level that brings meaning and connection to life. In other words, collective effervescence doesn't separate the sacred from the profane, it turns the everyday profane into the meaningful and sacred.

Notes

1. Some of the datasets were collected alongside other studies with goals not relevant to the current paper. Measures that are unrelated are not reported here but are listed in full in the supplementary materials.
2. The following five measures are single items which were originally included in each dataset as one of the 18 items assessed for inclusion in the SCE scale. However, these items did not consistently load with either factor and therefore are here used as measures of independent but related constructs. These measures include: being lost in the moment, enjoying the event, connections to others not there, synchronized behavior, and feeling wonder and amazement during the event.
3. Most participants in the floating control were also participants in datasets 1 or dataset 2 (utilized in Studies 1a and 1c). They participated in the floating control after completing measures relevant to scale construction.
4. The predictions for Studies 2a – 2d developed as the data were collected. When we began this research, we assumed that collective effervescence would only occur in the kind of rarified circumstances in which it is normally discussed. However, after two of the studies were collected, we refined our predictions based on collected data and ran the last two studies to examine the new hypotheses. In addition, Studies 3a and 3b were collected to specifically examine the new hypotheses.
5. Several of these measures were included among the original 18 items examined for possible inclusion in the SCE scale. None of them were included in the final scale.
6. In order to strategically utilize experimental resources, participants in Study 2d were also in dataset 4 (that was used for scale validation). Participants completed all of the measures relevant to scale validation first and then the measures relevant used for Study 4. No variables or analyses were used for both studies; the same participants were simply in both studies.

Disclosure statement

No potential conflict of interest was reported by the authors.

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