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Running head: Collective resilience at an outdoor music event

Managing to avert disaster: Explaining collective resilience at an outdoor music event

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Abstract

There is considerable evidence that psychological membership of crowds can protect people in dangerous events, though the underlying social-psychological processes have not been fully investigated. There is also evidence that those responsible for managing crowd safety view crowds as a source of psychological danger, views which may themselves impact upon crowd safety; yet there has been little examination of how such 'disaster myths' operate in practice. In a study of an outdoor music event characterized as a near disaster, analysis of questionnaire survey data (N = 48) showed that social identification with the crowd predicted feeling safe directly as well as indirectly through expectations of help and trust in others in the crowd to deal with an emergency. In a second study of the same event, qualitative analysis of interviews (N = 20) and of contemporaneous archive materials showed that, in contrast to previous findings, crowd safety professionals' references to 'mass panic' were highly nuanced. Despite an emphasis by some safety professionals on crowd 'disorder', crowd participants and some of the professionals also claimed that self-organization in the crowd prevented disaster. **Key message:** Crowd safety in a 'dangerous' event can be enhanced by the social relational transformations, such as increased trust and expectations of support, that flow from shared social identity.

The observation that the public have the collective psychological resources to cope with emergencies and disasters has been made in a number of disciplines, including security studies (Furedi, 2007), sociology (Dynes, 2003; Fritz, 1961), historical research (Solnit, 2009), and war studies (Jones, Woolven, Durodié, & Wessely, 2006). In some formulations, it is explicitly the crowd that is a source of this informal resilience (e.g., Cole, Walters, & Lynch, 2011). In social psychology, such adaptive solidarity in the face of emergencies can be explained in terms of the principle of self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) that a shift from the personal to the collective level of self entails a number of 'social relational' transformations (Drury, Cocking, & Reicher, 2009a; Neville & Reicher, 2011; Reicher, 2011). These include increased trust of others, greater expectations of support from them, and greater willingness to give them support. In emergencies and other dangerous crowd events, these changes in relations with others can enhance feelings of safety as well as allowing adaptive behaviours such as coordination (Drury, 2012) and collective self-regulation (cf. Stott, Adang, Livingstone, & Schreiber, 2007).

This social identity explanation of collective resilience in crowds is in line with evidence from a broader body of work on the role of psychological groups in promoting (within-group) helping (Levine, Prosser, Evans, & Reicher, 2005; Simon, Sturmer, & Steffens, 2000) and in providing members with support in times of stress (Haslam, O'Brien, Jetten, Vormedal, & Penna, 2005; Jones et al., 2012). Direct empirical evidence for the adaptive potential of shared social identification in crowds during emergencies and disasters is limited, however. Experimental studies using a simulated evacuation have shown that social identification with a crowd increases help and reduces pushing (Drury, Cocking, Reicher, Burton et al., 2009); and interview and archive analyses of survivors' accounts have shown that identification with the crowd is associated with giving help, courtesy and

coordination (Drury et al., 2009a; Drury, Cocking, & Reicher, 2009b). But there has not yet been a test of the predicted (quantitative) relation between identification, changes in relations, and resilient outcomes in a dangerous crowd event. This, therefore, is the first aim of the research described here.

Crowd events take place in intergroup contexts and develop as a function of each group's representations of self and the other group (Reicher, 1984, 1996). While this point has principally been made in relation to crowd conflict, a parallel observation can be made for crowd disasters, as these involve not only the public but also the professional groups managing safety (Challenger & Clegg, 2011) or responding to the emergency (Tierney, 2007).

Those with professional responsibility for managing safety in crowd events – including emergency planners, event stewards, safety officers, and police officers – appear to have mixed views regarding the psychosocial capacities of crowds. On the one hand, analysis of guidance documentation used in emergency preparedness (e.g., Cabinet Office, 2011; see Drury, Novelli, & Stott, 2013b) and some survey findings (Drury, Novelli, & Stott, 2013a) suggest that these professional groups recognize the capacity of ad hoc crowds to respond adaptively to emergencies. On the other hand, there is much more survey evidence that these professional groups, like many members of the general public, also endorse disaster myths (Wenger, Dykes, Sebok, & Neff, 1975), such as 'mass panic' and the belief that 'civil disorder' inevitably follows a disaster (Alexander, 2007; Drury et al., 2013a; Fischer & Drain, 1993; Wester, 2011).

However, these previous studies do not tell us how such representations of crowd resilience and risk are actually used in practice by crowd safety professionals. Are such representations employed as simple descriptions of experiences and events, or are they (also) used for other purposes – such as planning for contingencies, rationalizing actions or deflecting blame and responsibility? Deployment of disaster myths could be highly consequential when a crowd event goes badly. Therefore the

second aim of the present research was to examine participants' talk about crowd danger or safety at the same dangerous event. By examining both participants' and professionals' accounts of crowd danger and of averting that danger, we adopt a novel intergroup perspective on crowd safety representations and will also be able to examine the extent of any link between representations of the crowd and safety practices.

Putting the two research aims together, overall we sought to show the extent to which any crowd-based resilience processes found at the event were also reflected in the talk (representations) of the crowd participants and safety professionals at the event.

The Present Study

We carried out two studies of participants' and safety professionals' accounts and behaviours at an outdoor music event. The event was the 'Big Beach Boutique II' party, headlined by the international dance music DJ Fatboy Slim, which was held on Brighton beach in 2002. The unexpectedly large size of the crowd overwhelmed the emergency services, and the event was seen by some as a near disaster.

Based on the research and theory outlined above, our study addressed two questions. First, to what extent did social identity processes explain resilient outcomes in the crowd? In line with the social identity model of collective resilience (Drury, 2012), we expected that shared social identity in the crowd would predict the social relational changes (expecting help, trusting others in an emergency, and interacting with strangers in the crowd) that would in turn predict both feelings of safety and collective self-regulation. Second, what were the representations of crowd risk in the event, and how did the professional groups and crowd participants perceive that disaster was averted? Based on the surveys of professionals' beliefs which suggest that disaster myths are widespread, we expected that there would be reference to 'mass panic', and that where the

professional groups saw lack of ‘control’ as a problem, then furthering their own ‘control’ would be their solution. On the other hand, where the crowd was represented as capable of self-organization, we expected that this would be offered as the explanation for how disaster was averted.

In Study 1, we present analysis of questionnaire survey data and test predictions based on the social identity model of collective resilience. In Study 2, we use interview responses and secondary data (archive, documentation, social media, news) to analyse professionals’ and crowd members’ representations of the nature of crowd risk at the event and their explanations for why there was not a disaster.

Big Beach Boutique II

Prior to the analysis proper, we used video and archive material (detailed below, under Methods) to construct a summary of the events. This summary does not attempt to be a fully consensual account, and we have indicated sources where there are areas of disagreement or where a claim is supported by only one source. However, on the principle of data triangulation (Denzin, 1978), it is sufficient at least to orient the reader to the issues discussed in the analysis.

Big Beach Boutique II, a free event headlined by international dance music DJ Fatboy Slim, took place on Brighton beach on Saturday 13th July 2002. Based on numbers at a similar event the year before, the organizers planned for a crowd of around 65,000. However, in a move which had not been agreed during the planning process, the event was advertised nationally beforehand, most notably on BBC Radio 1. Following a period of poor weather, the day of the event was warm and sunny, and the beach was already busy when party-goers began to arrive in the early afternoon. By the evening, the crowd grew to an estimated size of 250,000. As well as filling the beach, the crowd spilled into the road on the upper promenade, limiting access for vehicles.

The facilities, stewarding organizations and emergency services were overwhelmed. At around 6pm, the situation was judged so serious that approximately 200 additional police officers were deployed (though one police source disputes this number). The overcrowding meant that emergency exit routes were all blocked. There were also specific incidents that came close to disaster. First, some people climbed up the lighting rigs, putting themselves and others in danger. Second, part of the crowd was close to the waterline; as the tide came in and reduced space, there was a crowd surge as people tried to evacuate the beach; there was a risk of crushing, and some participants became distressed.

According to Brighton and Hove City Council's Policy and Resources Committee, there were 150 minor injuries, and 15 people were taken to hospital. There were also two deaths associated with the event, several hours after the music had ended. Many of the news reports focused on these deaths, which they claimed took place during the event. A typical news report also stated that 'Brighton descended into chaos' and that the event brought the town 'to the brink of disaster' (McVeigh & Townsend, 2002). The reference to a 'near disaster' was not simply a mass media claim. Thus for example a police source was later quoted as saying, 'Fortunately… it didn't end up as a catastrophe, but I think everybody involved realised how close we were to that happening' (quoted in Godfrey, 2007).

In summary, therefore, Big Beach Boutique II appears prima facie to be an event containing a large number of crowd-related risks to both crowd participants and the professional groups involved in managing safety: the crowd was too large to manage; there was an obvious strain on facilities and space; and some of the behaviour of the crowd appeared to be dangerous. Yet the event was not in the end the disaster that some had feared. Our question concerns the role of the crowd in this.

Study 1

Study 1 was a questionnaire survey which examined predictors of two outcome measures of collective resilience: feeling safe and collective self-regulation. Feeling safe is an experiential measure which should be relatively high where others in the crowd are providing support to overcome a potential threat. Collective self-regulation is found in evacuating and conflict crowds, where people feel they have the support to challenge behaviours in the group that threaten group safety or interests (Drury, 2012; Stott et al., 2007). Our predictions were, first, that these positive outcomes would be a function of social identification with the crowd, and, second, that the reason social identification with the crowd has these positive effects is because it entails certain social relational changes. The social relational factors we examined were expecting others to help if needed, trusting others in an emergency, and interaction with strangers. Specifically, we expected positive correlations between identification with the crowd and the five other measures; we expected the three social relational measures to correlate with each other; and we expected feeling safe to correlate with the three social relational measures, and collective self-regulation to correlate with expecting others to help if needed. (It made less sense to expect trusting others in an emergency and interaction with strangers to correlate with collective self-regulation, since the first refers specifically to an emergency situation and the second does not require social support.)

In terms of process, we predicted that each of the three social relational factors would mediate the relation between identification with the crowd and feeling safe. We also predicted that expecting others to help if needed would mediate the relation between identification with the crowd and collective self-regulation. In both cases, we also tested reverse versions of these hypotheses in order to check whether our predictions worked better statistically than possible alternatives.

Method

Sample: We recruited 48 people who had attended the event, through advertising on social media, word of mouth, and asking interviewees from Study 2 to suggest people.[1] Ages ranged from 25 to 59 years (M = 35.88, SD = 7.50). Thirty were female and 18 were male. Twenty-two of the participants lived in the Brighton area at the time of the event, whereas 26 were living in other parts of the UK. Most were paid a fee of £5. Participants indicated that, at the time of the event, they were fans of Fatboy Slim, familiar with the dance music scene, and regularly attended dance music parties. All data were collected in 2011, nine years after the event.

Measures: The questionnaire contained items on the following themes: identification with the crowd (three items, $\alpha = .84$); interaction with strangers; feeling safe (three items, $\alpha = .91$); collective self-regulation; expectations that others in the crowd would help me; and trust in crowd members to deal with an emergency (three items, $\alpha = .95$). All items listed are in the Appendix. All were measured on Likert scales anchored by 1 'disagree strongly' and 7 'agree strongly'. Other than the identification items, which were based on measures in Doosje, Branscome, Spears and Manstead (1998) and in Doosje, Ellemers and Spears (1995), all items were developed specifically for the study, and were based on concepts in the social identity model of collective resilience (Drury, 2012).

Results

Descriptive data, results of single-sample t-tests and inter-correlations for all measures are presented in Table 1.

-------Insert Table 1 about here------

As shown in Table 1, one-sample t-tests found that levels of identification with the crowd, expecting others to help if needed and feeling safe were all significantly above the scale mid-point of

[1] None of the sample in Study 1 took part in Study 2.

4, suggesting that on average participants in our sample did identify with the crowd, expect help from each other and felt safe. Scores for the other measures – trusting the crowd to deal with an emergency, interaction with strangers, and collective self-regulation – were on or about the scale mid-point. For trusting the crowd, the mean was close to the mode suggesting no strong views either way. For each of interaction with strangers and collective self-regulation, there were large groups of respondents either side of the scale mid-point, suggesting split views within the sample.

As expected, there were positive correlations between identification with the crowd and the five other measures. While expecting others to help correlated with the other social-relational measures, against predictions trusting the crowd to deal with an emergency did not correlate with interaction with strangers. As expected, feeling safe correlated with the three social relational measures. As well as correlating with expecting others to help, collective self-regulation also unexpectedly correlated with trusting others in an emergency. Therefore most of our initial predictions were supported and give us confidence in carrying out mediation analyses.

In order to test our prediction that each of the three social relational factors would mediate the relation between identification with the crowd and feeling safe, we conducted mediation analyses based on 5,000 bootstrap samples using the Process tool (Hayes, 2013).

-------Insert Table 2 about here-----

Table 2 shows that the total indirect effect of crowd identification on feeling safe is significant; because zero is not in the 95% CI, we can thus conclude that the indirect effect is significantly different from zero at $p = .05$ (two-tailed). Separately, there were also significant indirect effects of crowd identification on feeling safe through each of trusting crowd members to deal with an emergency and expecting others to help if needed. However, against predictions, there was no significant indirect effect of crowd identification on feeling safe through interaction with strangers.

In order to check whether our predictions were better statistically than possible alternatives, we swapped X and Y to test a reverse hypothesis. This time, the direct effect (of feeling safe on crowd identification) was no longer significant, b = 0.023, 95% CI [-0.222, 0.267]. The total indirect effect was still significant, though the beta was reduced, b = 0.266, 95% CI [0.060, 0.536]. Further, in this reversed mediation, the indirect effect of feeling safe on crowd identification through expecting others to help if needed was not significant, b = 0.019, 95% CI [-0.172, 0.206]. Results for the other indirect effects were similar to those in the hypothesized model. Thus the indirect effect of feeling safe on crowd identification through trusting crowd members to deal with an emergency was significant, b = 0.179, 95% CI [0.057, 0.352]; and the indirect effect of feeling safe on crowd identification through interaction with strangers was not significant, b = 0.068, 95% CI [-0.002, 0.191]. Taken together, these results provide more support for our hypothesis than an alternative hypothesis (i.e., that feeling safe has indirect effects on crowd identification).

For the second outcome measure, collective self-regulation, we predicted an indirect effect of identification with the crowd through expecting others to help if needed. Since trusting crowd members to deal with an emergency correlated with both crowd identification and collective self-regulation (see Table 1), it made sense to test for the mediating role of this relational variable on collective self-regulation too, so we put both mediators in together.

------Insert Table 3 about here-----

Table 3 shows that the total indirect effect of crowd identification on collective self-regulation was not significant. Moreover, there was no significant indirect effect on collective regulation through either of the relational variables separately.

To test an alternative hypothesis, we swapped X and Y and ran the analysis again. There was again no direct effect, b = 0.097, 95% CI [-0.095, 0.289]. The total indirect effect of collective self-

regulation on crowd identification was significant, b = 0.127, 95% CI [0.013, 0.301]. The indirect effect of collective self-regulation on crowd identification through expecting others to help if needed was not significant, b = 0.041, 95% CI [-0.033, 0.175], but the indirect effect of collective self-regulation on crowd identification through trusting crowd members to deal with an emergency was significant, b = 0.086, 95% CI [0.007, 0.218]. Taken together, these results suggest that the alternative hypothesis – that collective self-regulation has indirect effects on crowd identification – works better than our hypothesis.

Discussion

The results of Study 1 suggest that the reason that identification with the crowd enhanced feelings of safety among participants at Big Beach Boutique II was because of its effects on two relational variables: trusting others to deal with an emergency and expecting them to help. While interaction with strangers correlated with both crowd identification and feeling safe, as well as with the other two relational factors, it was not found to operate as a mediating variable between crowd identification and feeling safe. Further, while collective self-regulation correlated with crowd identification, trusting others to deal with an emergency and expecting them to help, we did not find a significant indirect relation from crowd identification to collective self-regulation through these two relational factors.

Most hypotheses regarding feeling safe were therefore supported, and the tests on the direct and indirect predictors of feeling safe provided more support for our hypothesis than for a reverse hypothesis. However, the reverse tests for both feeling safe and collective self-regulation provide some evidence that crowd identification as well as being the basis for collective resilience processes can also be affected by these processes. In each case, it was trusting others to deal with an emergency that was the factor through which the indirect effect operated. It may be that feeling safe in a crowd

and being able to collectively self-regulate tell us something about the people we are with – that they can be relied upon in an emergency – and that this in turn enhances our sense that we and they are part of the same group. We return to this question of the status of crowd identification as cause or effect in the General Discussion.

Study 2

While Study 1 has told us something about psychological process in a dangerous crowd event, it has not put this in intergroup context or told us anything about crowd representations. The aims of Study 2 were therefore to examine the accounts by both event safety professionals and participants of the risks they faced during Big Beach Boutique II and the nature of solutions to these risks. We sought to examine any references to the crowd, any contrasts within and between groups of participants, and the functions of different representations of crowd risk and resilience for practice. Specific areas of interest therefore included any use by speakers of disaster myths and the extent to which there was recognition of the crowd-based resilience processes identified in Study 1.

Methods

Interviews: Through approaching the relevant organizations, we recruited ten people for semi-structured interviews who had professional roles in crowd safety at Big Beach Boutique II: two senior safety officials from the city council; two senior members of Sussex Ambulance Service; two mid-ranking police officers; the head of the security and stewarding company; and three stewards, one of whom had a senior role at the event. Six of the interviewees were on the Safety Advisory Group[2] for the event. Eight interviewees were male, two were female. Only four declared their age

[2] A Safety Advisory Group is appointed for major public events to advise on safety, and is comprised of representatives from the emergency services, licencing authority, venue or event organizers and stewarding/security organizations.

(M = 44.5). The interviews covered the following areas: factual (e.g., 'Who was involved in the planning of the event?'); expectations (e.g., 'Did you anticipate any crowd problems?'); an outline of the day's events (e.g., 'Did you feel that it was becoming dangerous at any stage?'); disaster myths (e.g., 'Did the crowd panic?'); and evaluation of the events (e.g., 'Would you say that the event was a success?').

Through advertising in the local press and word of mouth, we recruited ten crowd participants to be interviewed (six male, four female; M age: 41.13). The interviews covered the following areas: outline of events and feelings on the day (e.g., 'How did it feel to be at the party?'); identity (e.g., 'Was there a sense of connectedness to the crowd/did you feel part of the crowd?'); observed behaviour (e.g., 'Was the crowd acting selfishly?'); atmosphere (e.g., 'Describe the atmosphere at the event'); and overall evaluation (e.g. 'Would you say that the event was a success?').

Most interview were carried out in 2011, nine years after the event, and most interviewees were paid a fee of £10 each.

Video: We obtained the official video of the event, Live on Brighton beach: Big Beach Boutique II: The Movie, which contained two hours of crowd scenes.

Archive material: News reports: Twelve contemporaneous (national) newspaper and BBC news reports were collected from online sources; all were published shortly after the event. These contained 20 quotes from police officers, ambulance paramedics and council officials. Message-board material: One hundred and seventeen comments from an online discussion of the event on BBC online were gathered (BBC news, 2002). Official materials: Two versions of the event safety manual (with input from the city council, emergency services and stewarding organizations), the event security and steward logs, the city council Policy and Resources Committee minutes and report, and the police debrief minutes and report. Written accounts by participants: We obtained

three detailed written accounts of the event, two from police officers (one was a statement submitted as part of a police debrief), and one from the head of the stewarding and security organization, written as part of a business continuity course assessment.

Analytic Procedure In order to organize the interview and archive data, thematic analysis was conducted, based on guidelines proposed by Braun and Clarke (2006). Thus, first we familiarized ourselves with the material by reading and re-reading it. Second, we generated some initial codes – i.e., basic categories – by selecting features of the data that appeared interesting in terms of our research question (e.g., 'panic'). Third, we organized the coded excerpts into a smaller number of subordinate and superordinate themes (e.g., 'representations of crowd risk'). Fourth, we reviewed the themes to check their internal coherence and their distinctiveness from each other, revising where necessary.

While the analysis identified some unanticipated themes, specific theoretically-driven questions also guided the analytic procedure. For the professional groups, the questions were as follows: Whether and how 'panic' was referred to. In what other ways was the crowd described? How did they explain how disaster was averted? What features of their own practices or features of the crowd contributed to this? Questions guiding the analysis of the crowd participant data included: How did they describe their experiences? Did they think there was 'panic' or 'disorder'? Did they feel safe?

Having used thematic analysis to organise the material semantically, we then drew upon techniques from discursive psychology (Potter, 1996), which involved attention to lexical features of talk and texts, to examine how crowd representations were used and more generally how people did things with words. While the interview format entails treating the speakers' utterances as reflections of underlying feelings and perceptions (cf. Potter & Hepburn, 2005), given that the events were controversial and that 'mass panic' and other disaster myths have implications of blame and stake for

speakers (Cocking & Drury, 2014), it was also of interest to analyse the use of specific rhetorical techniques employed by speakers to warrant facts and justify claims. Two examples of such discursive devices analysed here are extreme case formulations (Pomerantz, 1986) – which are forms of maximization, often employing exaggeration, which are used to justify an account – and vivid description (Edwards & Potter, 1992) – which is a description rich in lively detail and apparently careful observation, which serves to invoke a potent category: the witness (Hepburn, 2003).

Analysis

The themes for crowd risk and averting disaster and their endorsement by the different groups are summarized in Table 4.

--------Insert Table 4 about here-------

Representations of crowd risk There were three main types of representation of crowd risk in the qualitative material: 'panic', 'disorder', and 'loss of control'.

Crowd 'panic': The notion of crowd 'panic' was present in some of the event planning material, and most of the professionals that we interviewed also used the term spontaneously as well as in response to our questions. But there was no consistent claim that crowd panic actually took place. Among crowd participants, only one interviewee said there was crowd panic; and the term 'panic' was not found in the message-board material.

What did the professional groups mean by 'panic'? In the Safety Manual, 'panic' is listed alongside 'over-excitement [ ] disorientation and effects of drug intake' (p. 15), to imply that it is a kind of psychological disorder. In the interviews, 'panic' was also cited as a potential problem, and was sometimes explicitly linked to the crowd. A recurrent concern was that an emergency evacuation would lead to 'panic' in the crowd which could then itself cause a fatal crush. This sequence was presented by some interviewees as a feature of crowds in general, which behave like 'herds of

animals' (PG1).[3] In these accounts, panic was presented as something in the stock of crowd contingencies, however, rather than a report on what actually took place.

When some interviewees did state that there was 'panic', they qualified this in various ways. These qualifications included presenting panic as a matter of opinion ('I think') rather than a fact, and distinguishing between 'full' and partial panic ('a degree', 'a bit of', 'almost'). Another formulation was to suggest that the designation 'panic' applied not to the crowd but to a minority of individuals within the crowd. The following extract illustrates all these features:

1. I think I think it was a degree of panic in certain areas, and if you didn't like large crowds you were in the wrong place

(PG1 – city council events manager)

In summary, therefore, despite the relative prevalence of the term in accounts of the crowd, and despite the clear dangers posed by the size of the crowd and risks of evacuation, there was no consistent claim that there was crowd 'panic'.

Crowd 'disorder': The most prevalent theme in the safety professionals' accounts of Big Beach Boutique II was crowd 'disorder' – including drunkenness, damage, open drug-taking, 'indiscriminate' urinating and aggressive or violent behaviour.

Interviewees from all the professional groups mentioned various forms of 'disorder', but the police provided the most consistent, detailed and vivid descriptions. In the following example, the speaker uses detail in the form of personal witness and juxtaposition to create a compelling story of anti-normative behaviour as ordinary and accepted in the crowd:

[3] PG = professional groups; CP = crowd participant.

2. I spoke to one male guest who was inviting those pressed against the outside of the fence around this area to break it down and come in. I also spoke to a couple who were simulating sex in the sand whilst their young daughter sat crying nearby, whilst others stood around clapping

(PG2 - Police officer)

While these examples refer to behaviours by individuals, it is clear that they were being used to convey an impression of the crowd as a whole. Thus the police officer also employs an extreme case formulation – *'everywhere'* – alongside a personal account of being treated with contempt, which together have the effect of suggesting that disregard of law and order was widespread rather than isolated:

3. Everywhere people were committing offences. I was asked to hold a male's joint, whilst he made a phone call, sitting on top of plastic-roofed toilet … I could have had 20 people arrested within the first 15 minutes!

(PG2 - Police officer)

'Many' officers reported injuries, according to the following interviewee; and the fact that officers were said to be trying to help members of the public at the time of this 'abuse' makes it doubly unjust:

4. Many officers have been traumatised. Some of them have been verbally and physically abused by members of the public while they are trying to help people in distress

(PG3 – Police Chief Inspector, quoted in McVeigh & Townsend, 2002)

Consistent with the notion that 'disorder' was a feature of the crowd rather than just selective individuals, this ambulance officer presents a contrast in the form of a list of examples to show that the 'whole atmosphere' changed. Indeed, to emphasise that this change was representative of the

crowd as a whole, it is presented in terms of the prototype of the crowd participant ('sort of person', 'type') rather than particular individuals:

> 5. Later on into the evening when when the things started happening, the youth were climbing lampposts, the youths were following an ambulance through jumping on the back, they were then becoming disruptive, and suddenly became a different sort of person. They'd gone from party-going happy-go-lucky type of person to throwing, you know, glass bottles being thrown, people being pushed, fights starting, the whole atmosphere had sort of changed...
>
> (PG4 – ambulance service)

Two interviewees from the professional groups explicitly denied that crowd behaviour was disorderly. But, in spontaneously volunteering the defence, they were clearly orienting to this kind of accusation, which suggests that it was widely shared as a version of events, at least in some circles.

'Disorder' was far less prominent in crowd participants' accounts than in those of the professional groups – both in terms of the number of references and in terms of how strongly the speakers emphasized them. While some referred to specific 'disorderly' behaviours in the crowd, such as rowdy drunkenness and jeering at the police, most of our interviewees explicitly stated that there was little or no aggression. Moreover, in contrast to the police accounts of hostility and disinhibition across the crowd as a whole, crowd participants particularized the issue, stating that only 'a minority' misbehaved and that there was 'generally good behaviour'.

Yet where disorder was seen as a problem, those that witnessed it said that it was successfully managed from within the crowd, and, according to the following, in a good-humoured manner:

> 6. I remember some people getting a bit like a couple of guys on occasions getting a bit what you say you might say lairy and a bit like, you know, but everybody just laughing it would just be getting defused, you know, going 'come on, don't be silly, have a drink', you know

(CP1)

'Loss of control': Interviewees from the professional groups stated that they 'lost control' of the event. Some referred to being emotionally scarred by this experience:

7. During the event, there were arrests, crushing and fall injuries, and assaults. These and the noise, lack of control, crowd numbers, lack of support, and the overall inability to assist people whom I felt duty-bound to help, made the event traumatic.

(PG2 – police officer)

A number of crowd participants agreed that the professional groups were unable to cope and 'lost control' of the event:

8. I think they were totally unprepared for the sheer amount of people that were there, I think if there had been a sort of as you say mass evacuation there would have been problems

(CP2)

However, whereas for the professional groups this loss of control was a source of distress, in some crowd participant accounts it was directly linked to their positive experience of the event:

9. I think the kind of spontaneity of it and the fact that it was so almost disorganised and, you know, snowballed into something much bigger than it was meant to be really added to the experience made it feel like it was a real one-off experience

(CP2)

The implication of this 'loss of control', however, was that the professional groups did not have the capacity to protect people from danger. Yet crowd participants said they felt safe. Indeed safety was another factor which they linked to their positive experience of the event:

10. It was a great atmosphere and the music was great. It is such a privilege to be able to go to such a large event and feel completely safe.

(CP3. BBC news, 2002)

How disaster was averted The professional groups offered three kinds of explanation for how disaster was averted: organizational resilience; use of force; and crowd self-organization. Among crowd participants, the last of these was the only kind of explanation found in our material.

Organizational resilience: In different ways, speakers from all the professional groups emphasized their own organizational resilience as an explanation for how disaster was averted. Thus their own flexibility and improvisation were highlighted by some interviewees as important in preventing disaster:

11. I went to sort of 'all hands on deck' and found myself taking the role which I didn't feel was a conflict of interest because it literally was a situation that someone had to take the role.

(PG8 – city council environmental health officer)

In police accounts, given the threat they faced, it was their own bravery in the difficult circumstances that was crucial. In the following, which significantly is for internal consumption only, this bravery is likened to the heroic rescue of British troops during the second world war:

12. 'Dunkirk Spirit' [ ] Individual Acts of near-heroism on the street/beach (esp. where crushing occurred)

(Minutes from police debrief)

Use of force: According to police officers, forceful measures were necessary to maintain control and prevent disaster:

13. People refused to stay back [from the fence at the waterline] and we were forced to manhandle them to get them to comply.

(PG2 – police officer)

In line with this, police also stated that officers in 'riot gear' were deployed. This police action was also referred to by a senior steward, using the same terminology, who suggested that police were attempting to deal with a section of the crowd whose behaviour was a result of problems elsewhere, rather than being a cause of the problems itself:

14. it was the people that were fifty a hundred two hundred metres behind them pushing that were the problem, not the people at the front. So that kind of regulated a bit, but then the police came in and put on riot gear and they were standing on the groyne [to prevent people moving forward].

(PG4 – senior steward)

In extract 14, there is a contrast being developed between the stewards' action and that of the police ('but'). For some of the stewards, police attempts to control the crowd were futile, inflexible, and contributed nothing to ensuring safety:

15. [the police] asked for help on one of the groynes to go and stand on one of the groynes and stop people… jumping off it it, you know, you're faced with twenty thousand people wanting to [laughs] go one way and I had me and six other people and four riot police and a twenty foot drop they [police] weren't they they weren't geared up to dealing with thinking on the spot [ ] and instead of making the environment safe for these people to go the way they wanted to go, they were more interested in stopping them, which was, you know, was was not going to happen

(PG5 - steward)

None of the crowd participant interviewees or comments on the message boards mentioned these attempts at coercion by police, however.

Crowd self-organization: In line with their view of generalized crowd 'disorder', none of the police accounts referred to adaptive self-organization within the crowd as a basis for averting the

potential disaster. While the ambulance official from the Safety Advisory Group acknowledged the principle of the crowd as 'part of the solution', he also dismissed the idea as impossible in practice, due to the crowd's emotional state:

> 16: Would they [the crowd] be part of the solution? Yes we were hoping they were going to be because that was an option, but in actual fact they were probably part of hindrance because they were frightened, they were fearful
>
> (PG4 – ambulance service)

Yet some of the stewards and others felt that the crowd was capable of self-organizing in the face of adversity. In the following, mutual cooperation is presented as a defining characteristic of the crowd, using the example of improvising in the absence of facilities:

> 17. People seemed to be conscious that there were children there for instance, and giving those children space within that crowd, understanding, you know, that other things that on a normal night would be absolutely disgusting just people wanting to go to the loo [laugh] and having a wee on the beach [laugh] and realizing they couldn't get out anywhere all those people giving them a bit of privacy, although they were only three or four inches away from them.
>
> (PG5 – steward)

Some interviewees from the stewarding organization explained this 'reasonable' and adaptive cooperative behaviour observed in the crowd in terms of the culture of unity or 'brotherhood' (PG7 – steward manager) among the crowd participants, which they linked to the fact that sections of the crowd were on the drug Ecstasy.

One particular example of how disaster was prevented was the incident in which a party-goer had climbed up a lighting rig. Organizers asked the headline DJ to intervene, knowing that he would be able to influence the crowd. In combination with pressure from the crowd, this intervention

ensured that the climber came down safely and indeed it served to define a 'safety' norm for the evening:

18. How are we going to get him down? So I said, you ask the voice of God [DJ Fatboy Slim], turn the music down, ask the voice of God very nicely to say [ ] 'please get down, because the party can't carry on until you're back on the ground, but do it safely please.' Peer pressure will bring him down, and he won't get his head kicked in, and that will stop anybody else climbing up. Music came down, voice of God came over, he waved a bit, everyone cheered, and they're all going 'down, down, down', so he comes sliding all the way down, everyone cheers and that's it. No one else climbed a lamp post all night.

(PG8 – city council environmental health officer)

A number of crowd participants argued that it was the 'natural' good sense of the crowd itself, not the actions of the professional groups, that prevented disaster:

19. I'm absolutely of the opinion that it was the crowd that stopped the disaster… none of the barriers, none of the coppers, none of the stew- stewards, none of the alleged things that were put into place… to protect the crowd I don't think any of that mattered, I think it was the crowd that kept everything together

(CP4)

Unity within the crowd was a theme in a number of participant accounts, and in some comments this unity is linked to the perceived success of the crowd in preventing disaster:

20. The fact that so few people were seriously hurt is a tribute to the co-operation and friendly atmosphere of everyone present.

(CP5: BBC online message board)

Specifically, cooperation was evidenced in examples such as the crowd's apparent spontaneous orderliness in the evacuation:

21. people were being really calm, nobody was kind of pushing people out the way to get to get up the stairs, they were just taking their line in the queue, it was so British taking the line in this very very tightly packed queue and just shuffling with it, but there was nobody kind of pushing people out the way

(CP4)

Some participants also provided evidence of what they saw as the prevailing unity and cooperation in the crowd by describing examples of help given to strangers, which they either saw or participated in themselves, as in the following extract:

19. CP6: I do remember as we were leaving we were being shepherded out or people were moving out, the person in front of me fainted and me and a friend carried her. And again it was more luck than, you know judgement by anyone that it just happened to be near the wall there was a sort of safety zone, security zone that we managed to carry her to and put her there.

Int: Was she a stranger did you say?

CP6: Complete stranger, yeah.

The fact that the person helped is a 'complete' stranger serves to emphasize the inclusive nature of helping.

Discussion

This qualitative analysis of interviews with participants and contemporaneous materials from Big Beach Boutique II established that 'panic' was present as a reference point, albeit in a minor way, in the professional groups' preparations for the event and in the interviews (cf. Alexander, 2007; Drury et al., 2013a, 2013b; Fischer & Drain, 1993; Wester, 2011). Usage was usually qualified, however,

and there was no consistent claim that crowd 'panic' actually took place (cf. Cocking & Drury, 2014). A theme of crowd 'disorder' was prevalent in the interviews with those from the professional groups. Some of the personalized vivid description (Potter, 1996) of disinhibited, aggressive, and unrestrained behaviour was reminiscent of Zimbardo's (1970) apocalyptic vision of crowd 'de-individuation' in the 'summer of love'. Interviewees from the professional groups, particularly the police, felt distressed by what they saw as widespread threat in the crowd. Their 'loss of control' of the event was also distressing for some safety professionals. Crowd participants, by contrast, suggested that 'disorder' was not widespread or representative and hence was not a serious problem. They also reported managing conflict themselves rather than passively ignoring it (cf. Levine, Taylor, & Best, 2011). They agreed that the professional groups had 'lost control', but this did not seem to affect their feelings of safety, and in fact was explicitly linked by some interviewees to the positive atmosphere at the event.

In explaining how disaster was averted, the professional groups referred to their own organization; as expected, there was evidence that some (in particular the police) saw coercion and further control as the solution to crowd risk. As we also expected, however, some of the other professionals involved in crowd safety, by contrast, referred to the capacity of the crowd to self-organize, gave examples where their own actions built upon this capacity, and said that crowd mutual aid helped prevent disaster.

General Discussion

In both Study 1 and Study 2, (a) crowd participants reported feeling safe despite the perception (by others) that there was danger; (b) there was recognition of the crowd's capacity to enhance crowd safety and reduce risk; and (c) this adaptive capacity was linked to psychological unity (i.e., identification with the crowd).

In Study 1, we examined the basis of this adaptive capacity and showed as expected that an outcome measure of collective resilience – feeling safe – was predicted by identification with the crowd. Mediation analysis provided evidence that the reason that identification with the crowd had this positive effect was because it enhanced both expectations of help and the perception that fellow crowd members can be trusted in an emergency. However, interaction with strangers had little role to play; and collective self-regulation was found to be better explained as a cause than an effect of identification with the crowd.

While the failure to show that collective self-regulation could be predicted by crowd identification and social-relational factors went against our predictions, the implication of the mediation analysis that crowd identification might be understood as a result as well as a cause in fact fits with other work on social identity processes in crowds and groups and with the overarching self-categorization framework employed here. First, research on crowd conflict has shown that, as well as social identity determining crowd behaviour (Reicher, 1984), participation in some forms of crowd behaviour can also determine social identities (Drury & Reicher, 2000). Second, 'social cure' research on water drinking clubs among the elderly has found that, just as identification is the basis for perceived social support, so perceived social support enhances identification (Gleibs, Haslam, Haslam, & Jones, 2011). In the present case, while shared social identification was 'cognitive' (in the sense of being an understanding of 'who we are') it was perhaps also developed and enhanced through specific forms of behavioural relatedness which confirmed or clarified the sense of 'we-ness'. If this is the case, there could be a virtuous circle of the type described by Gleibs et al. (2011) whereby shared identification increases feelings of safety and engagement which in turn bring people more close together psychologically.

In Study 2, as expected, we found reference to the disaster myth of 'mass panic'. However, the usage was nuanced rather than a simple description of events. While previous research has analysed the multiple moral (and other) uses of the term 'panic' in 'ordinary' or lay talk about emergencies (Cocking & Drury, 2014; Fahy, Proulx, & Aiman, 2012), this study has also shown complexity in the talk of crowd safety professionals, where arguably it is far more consequential (used not just in blaming and excusing, but potentially also in planning). Also as expected, we found some evidence that where professional groups saw lack of 'control' as a problem, furthering their own 'control' was their solution. Importantly, however, there was also evidence that crowd participants and some of the professional groups attributed the safe outcome of Big Beach Boutique II to informal social processes among crowd members. Thus, alongside the presence of representations of the crowd (such as 'mass panic') that could serve to justify or rationalize the exclusive role of the professionals in crowd safety, there was a recognition and acknowledgement of adaptive capacity in the crowd.

Possibly crowd participants' perceptions of safety may have been less accurate than the professional groups' view that there was a significant risk of disaster. As Chebib (2010) points out, crowd members may have been unaware of the problems that were evident to those with access to information from across the site (through police helicopter views and incident reports, for example). While this may be true, it is also the case that at least some members of the professional groups seem to have been unaware of the extent of mutual social support and adaptive potential within the crowd, so perhaps their view was also somewhat 'inaccurate'. In terms of actual danger, moreover, it is unclear whether the reported number of minor injuries and hospital admissions for this event were out of line with the expected patient presentation rate for a mass gathering of this size and audience profile.

Taken together, the findings from these two studies provide some support for the view that informal collective resilience in crowds is both experientially important and is partly explicable in terms of social identity processes. While the analysis provided here is certainly not unarguable, we suggest that it is plausible. It is also novel. Specifically, we suggest that the present research makes three original contributions.

The first contribution is the fact that this is the first quantitative field test of the social identity model of collective resilience (in Study 1). Moreover, while previous (mostly qualitative) studies have shown that shared identification enhances helping behaviours and reduces personally selfish behaviours (Drury et al., 2009a, 2009b; Drury, Cocking, Reicher, Burton et al., 2009), unlike the present research these previous studies did not demonstrate that identification with the crowd has other social relational consequences (Reicher, 2011) – including trusting others around you and expecting others to help if needed – that can enhance collective coping and hence safety.

A second novel contribution of this research is that it provides the first intergroup analysis of crowd representations in a (near) emergency context (in Study 2). The analysis also showed some connections between crowd representations and the safety practices rationalized by those representations that have not previously been demonstrated. Thus there was evidence of a connection between the representations of 'disorder' and 'loss of control' and crowd safety practices (such as coercion) based on the need for increased 'control'; there were also connections between the professional groups' representations of crowd self-organization and the safety strategies they employed that worked with, rather than against, the crowd's norms and values, and which were said to have enhanced safety as a consequence.

Foregrounding management's interaction with the crowd is not only necessary theoretically, it is also a positive development practically. This takes us to the third novel contribution of the present

research. In the emerging field of mass gatherings medicine, there is a recognized need for an adequate theory of crowd behaviour (Zeitz, Tan, Grief, Couns, & Zeitz, 2009). When psychosocial aspects of mass gatherings are analysed, the crowd itself often appears passive (e.g., Hutton, Zeitz, Brown, & Arbon, 2012) or is presented as little more than a source of disease and 'stampedes' (e.g., Memish, Stephens, Steff, & Ahmed, 2012). The present findings suggest that adaptive psychosocial responses arising from shared identity in a crowd - such as social support and the willingness to help - should be included alongside other factors at mass gatherings to help explain why such events may sometimes enhance wellbeing (Tewari, Khan, Hopkins, Srinivasan, & Reicher, 2012). Given these important consequences, the present study also suggests that crowd safety managers should consider the ways that their own practices might enhance (or undermine) shared identity with and among crowd participants; for example are the forms of language they use to address the crowd inclusive or divisive? Perhaps these kinds of issues, informed by social psychology, should be included in the standard crowd safety plan.

Limitations and Directions for Future Research

The analysis presented here has a number of limitations which could be addressed by future research. One possible criticism is that the interviews and survey were mostly carried out nine years after the events, and that therefore participants might have been unable to remember them correctly. While it is generally true that time diminishes recall, there is also evidence that extreme events are remembered better when there is personal involvement (Neisser, 1996; Prati, Catufi, & Pietrantoni, 2012), as in the present case. A second objection is that, even if people remembered correctly, they may be motivated to reconstruct the events in a particular (self-serving) way. Against this, we can point out that there was a strong match between data from the interviews and that obtained from the online messages boards and in the press around the time of the events.

Second, the case study design for an event which took place some years before most of the data collection meant that sample size was small. If the interest is in the psychological factors that explain adaptive or dysfunctional outcomes in a dangerous crowd event, however, then use of a case study design and some reliance on post hoc data is inevitable; other methods are a complement not an alternative. Therefore, one future direction for research is another case study, but at a different kind of event. Though most of the predictions based on the social identity model of collective resilience were supported in the present study, it could be argued that this was not a strong test of the model. Expectations of help might have been relatively high because there was relatively little cost incurred in helping strangers since there was less danger than in a genuine emergency. A study of an emergency crowd with little self-organization could help show how the application of social identity principles (e.g., the role of lack of crowd identification or the role of an individualistic group norm) can help make sense of collective disaster as well as collective resilience.

Such future research could also develop some of the measures employed here. The key explanatory variable was shared social identity with the crowd. Yet the measure used was based on standard items of strength of social identification (Doosje, et al., 1995, 1998), and sharedness was simply inferred (see Neville & Reicher, 2011). In future research, shared social identification might need to be measured in the form of two separate scales – my identification and my perception of others' identification (cf. Kahn, 2012) – in order to properly capture this concept.

Conclusions

This paper builds upon and complements previous research employing principles from self-categorization theory (Turner et al., 1987) to understand collective resilience in crowds in emergencies. It also extends work on disaster myths by examining the nuanced use of these representations by professionals working in crowd safety at a 'near disaster'. Despite some

differences between the safety professionals and the crowd and within the professional groups, and despite the professional groups' predominant representation of the event as 'disorderly', there was recognition of the role of crowd self-organization in averting disaster. These results therefore point to new ways to think about the practice of crowd safety in mass gatherings.

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Appendix: Questionnaire measures

Identification with the crowd ($\alpha = .84$):

I identified with the other crowd members at the 2002 Fatboy Slim beach party.

I am like the other people who were at the 2002 Fatboy Slim beach party.

I felt strong ties with the other people who were at the 2002 Fatboy Slim beach party.

Interaction with strangers:

I spoke to a lot of strangers at the 2002 Fatboy Slim beach party

Feeling safe ($\alpha = .91$):

I felt safe at the 2002 Fatboy Slim beach party.

I was concerned for my safety at the 2002 Fatboy Slim beach party (reversed)

I felt in danger at the 2002 Fatboy Slim beach party (reversed)

Collective self-regulation:

We were able to intervene when a minority in the crowd behaved inappropriately - e.g., clumsy, selfishly, over-exuberant.

Expectations that others in the crowd would help me:

I felt that others would have come to my aid if I needed help at the 2002 Fatboy Slim beach party

Trust in crowd members to deal with an emergency ($\alpha = .95$):

I had faith in my fellow crowd members' ability to deal with an emergency situation at the 2002 Fatboy Slim beach party.

I felt that I could trust my fellow crowd members to deal with an emergency situation at the 2002 Fatboy Slim beach party.

I had confidence in my fellow crowd members' ability to take charge of an emergency situation 2002 Fatboy Slim beach party.

Table 1. Descriptives and correlations.

	M	**SD**	**1**	**2**	**3**	**4**	**5**	**6**
1. Identification with crowd	4.84**	1.19	-	-				
2. Expect others to help if needed	5.38**	1.55	.415**	-				
3. Trust crowd members to deal with an emergency	4.13	1.61	.527**	.511**	-			
4. Interaction with strangers	4.33	1.81	.424**	.446**	.206	-		
5. Feeling safe	5.60**	1.66	.401**	.631**	.588**	.306*	-	
6. Collective self-regulation	4.22	1.69	.317*	.372**	.299*	.245	.187	-

One-sample t-tests and correlations: ** $p < 0.01$, * $p < 0.05$.

Table 2. Direct and indirect effects of crowd identification on feeling safe through interaction with strangers, trusting crowd members to deal with an emergency, and expecting others to help if needed.

	b	SE B	95% CI
Direct effect	0.558	0.188	0.180, 0.937
Total indirect effect	0.523	0.219	0.152, 1.019
Interaction with strangers	0.020	0.089	-0.143, 0.212
Trust crowd members to deal with an emergency	0.256	0.139	0.041, 0.593
Expect others to help if needed	0.247	0.140	0.039, 0.598

Confidence intervals are a BCa bootstrapped CI based on 5,000 samples.

Table 3. Direct and indirect effects of crowd identification on collective self-regulation through trusting crowd members to deal with an emergency and expecting others to help if needed.

	b	SE B	95% CI
Direct effect	0.237	0.233	-0.233, 0.706
Total indirect effect	0.212	0.168	-0.066, 0.597
Trust crowd members to deal with an emergency	0.057	0.156	-0.237, 0.380
Expect others to help if needed	0.155	0.131	-0.009, 0.519

Confidence intervals are a BCa bootstrapped CI based on 5,000 samples.

Theme	Professional groups	Crowd participants
Representing risk		
Crowd 'panic'	Majority referred to it	Minority referred to it
Crowd 'disorder'	Majority referred to it	Majority denied it
'Loss of control'	Majority agreed	Majority agreed
How disaster was averted		
Organizational resilience	Majority endorsed	No mention
Use of force	Police endorsed	No mention
	Stewards disagreed	
Crowd self-organization	Stewards and others endorsed	Majority endorsed
	Police and others denied	

Table 4. Themes in the qualitative analysis and their endorsement across the different groups