

**Endurance or decline of emergent groups following a flood disaster: Implications for community resilience**

Evangelos Ntontis<sup>1</sup>, John Drury<sup>2</sup>, Richard Amlôt<sup>3</sup>, G. James Rubin<sup>4</sup>, Richard Williams<sup>5</sup>

1. School of Psychology, Politics, and Sociology, Canterbury Christ Church University
2. School of Psychology, University of Sussex
3. Emergency Response Department Science and Technology, Public Health England
4. King's College London, Department of Psychological Medicine
5. Welsh Institute for Health and Social Care, University of South Wales

**Correspondence to:**

Dr Evangelos Ntontis

Lecturer in Social Psychology

School of Psychology, Politics, and Sociology

Canterbury Christ Church University, North Holmes Road, Canterbury, Kent

CT1 1QU.

**E-mail:** [evangelos.ntontis@canterbury.ac.uk](mailto:evangelos.ntontis@canterbury.ac.uk)

**Office no.:** +44 (0) 1227 921580

The authors declare that there are no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

**Disclaimers:**

This project was funded by a Public Health England PhD studentship. Dr Rubin and Prof Amlôt are funded by the National Institute for Health Research Health Protection Research Unit (NIHR HPRU) in Emergency Preparedness and Response at King's College London in partnership with Public Health England (PHE). The views expressed are those of the author(s) and not necessarily those of the NHS, the NIHR, the Department of Health or Public Health England.

### **Highlights**

- Groups can emerge due to the shared experience of common fate between residents
- The dynamics of such groups' post-disaster endurance or decline are underexplored
- Ongoing common fate, social support and commemorations can sustain emergent groups
- Individuality, inequality and identity changes can cause groups to decline
- Resilience policies should aim to support groups and reduce inequality of treatment

### **Abstract**

Previous social psychological research has shown that new group relationships can emerge among disaster survivors due to a shared sense of common fate, facilitating the provision of social support and collective coordination. Emergent groups and the support they mobilize over time can be crucial for the recovery period and overall community resilience, but such communities decline over time. What is not known are the psychological group processes that might contribute to or mitigate this decline. In this interview study with 19 flood-affected residents from the city of York, UK, conducted 15 months after the 2015 floods, we explored the factors that affected the decline or persistence of emergent groups in a post-flood community. Through a theoretical thematic analysis, we show how emergent groups can decline due to a lack of common fate, post-flood identity shifts, or perceived inequality. However, we also show that a sense of togetherness can be maintained through past shared adversity, due to the persistence of secondary stressors, intentional collective acts such as commemorations, and through the ongoing provision of social support. Implications for policy and practice are discussed.

**Keywords:** community resilience; social capital; social identity; flooding; disaster recovery; collective resilience

## 1. Introduction

The likelihood and impact of extreme events such as droughts, flooding, heatwaves and hurricanes is likely to increase due to climate change [1–3], which can take its toll on physical [1,4] and mental [5–8] health. To counteract such negative outcomes, there have been calls to explore how the resilience of communities can be enhanced [9]. Most community resilience programmes traditionally employ the concept of social capital, which emphasises the importance of strong pre-existing networks in facilitating and enhancing disaster response and recovery [10–14]. Indeed, community cohesion can protect against the psychological damage of flooding [15]. However, despite the indisputable importance of strong pre-existing networks for community resilience, such approaches have been criticized for not considering how pre-existing groups come to mobilize [16], how new forms of social capital are created [17], or how novel groups can emerge in absence of pre-existing networks [18]. Considering the criticisms outlined above, Ntontis et al. [18] advocate for a social psychological approach based on the concept of social identity and group membership to account for the contextual micro-processes of group mobilization in disasters. Such an approach is in line with what Berry et al. [5] term as a ‘systems thinking approach’, which focuses on testing behavioural theories, provide empirical evidence, and consider the interactions between the collective level of human behaviour and socio-structural factors embedded within particular social contexts.

Taking the above points on board, in this paper we focus on ‘communities of circumstance’ [19]; that is, groups that arise spontaneously in absence of pre-existing bonds. Spontaneous convergence and altruistic behaviours between strangers are commonly observed during disasters [20–23]. However, despite the fact that the processes of emergence of such groups [24–29] as well as the decline in post-disaster social support and community embeddedness [30] are relatively well-established, *why* and *how* emergent groups endure or decline in the long-term aftermath of the disaster has not been thoroughly explored. This question becomes of particular importance when we consider that a) the risk of harm can extend into the recovery period, and b) such emergent, altruistic communities can become sources of ongoing support to those affected and buffer the negative effects that persisting stressors can have upon the affected population. We present findings from an interview study conducted in a flood-affected community at the city of York, UK, 15 months following the disaster.

## **1.1. Disaster communities**

### **1.1.1. The emergence and complexities of altruistic communities.**

Early disaster research has demonstrated how common fate during disasters can break pre-existing distinctions and group boundaries and help people come into groups, and increase altruism and solidarity [20], with later empirical research supporting this observation [21,22,31]. Such communities have been described as ‘communities of circumstance’ [19], ‘therapeutic communities’ [32,33] and ‘altruistic communities’ [34] among others. Solidarity has been documented across a range of disasters including flooding, earthquakes, fires and hurricanes among others [23,31,35].

The interplay between the individual and collective level processes in disaster communities is far from straightforward (for an extended discussion see Kaniasty & Norris [35]). For example, losses, trauma, coping and stress processes at the individual level are often confounded with losses and trauma at the community level [36,37]. While in some occasions the perception of collective trauma and shared fate can foster communication and a sense of togetherness [38], in other instances (such as when there is a perceived collective lack of support [35]) it can be disempowering. Moreover, despite the undoubtedly beneficial support that disaster communities can mobilize, sometimes this support might not be equally distributed [39] and can reflect augmented pre-disaster social inequalities. Moreover, post-disaster aid and social support can either enhance or erode the emergent solidarity, as well as disrupt or re-establish the status quo [31]. Considering the complexity described above, it would be a mistake to romanticize and mythologize disaster communities. Rather, it might be more fruitful to explore the psychosocial processes through which such collectives can emerge and become beneficial or corrosive.

### **1.1.2 A social identity approach to emergent groups in disasters.**

It has been argued that to account for emergent groups and spontaneous solidarity we need to move away from merely cost-benefit analyses and consider meaning, social identity, and the wider social and cultural contexts [31]. In anthropology, Oliver-Smith [31] draws on the work by V.W. Turner and his notion of *communitas* [40] to explain how spontaneous togetherness replaces structured interactions when “normality” is disrupted. In liminal times of crisis, previous social roles and the status quo disappear and individuals acquire new social identities and roles within a novel state of affairs, often drawn together by a common identity.

In social psychological terms, the emergent togetherness that can be observed in disasters has been explained through the social identity model of collective psychosocial

resilience (SIMCR hereafter; [25,26,41,42]). SIMCR draws upon self-categorization theory (SCT hereafter; [43]), which specifies the conditions under which we come to perceive ourselves and others as group members, as well as the consequences of such categorizations. SCT treats emergent togetherness and subsequent collective behaviour as dependent upon the salience of a shared social identity [43–45]. One way that shared social identity can emerge is when survivors perceive themselves as experiencing a sense of *common fate* (see also Paton & Irons [38]). In turn, shared social identity can have a range of positive outcomes: it allows survivors to orient towards shared goals, increases expectations as well as the provision of social support, increases collective efficacy, and empowers collective action. The SIMCR falls within the ‘social cure’ approach in social psychology, which emphasises and has demonstrated the benefits of group membership on wellbeing across a range of contexts [46–48]. Consistent empirical evidence that supports the SIMCR has been found in a wide range of disasters and mass emergencies [27] such as bombings [28], tsunamis and earthquakes [49], and community flooding [29,50]. In the context of flooding, Ntontis et al. [29] showed that common fate that eventually led to the emergence of shared identity was facilitated through the shared experience of the floods, of common secondary stressors (e.g. looting), as well as to combat the perceived lack of support structures by the authorities.

A social identity approach to understanding disaster behaviour is an important contribution to a literature that has traditionally employed the concept of social capital, emphasising the importance of pre-existing networks in facilitating disaster response and recovery [11–14,51]. Despite the benefits that strong pre-existing networks can have for overcoming the impact of disasters, the social capital approach has been unable to account for the processes that lead to the formation of spontaneous groups in disasters [17] or the mobilization processes of existing networks [13]. A social identity approach to group processes in disasters can also be conceptualized as a type of a systems thinking approach [5] that attempts to integrate individual behaviour to collective processes and consider the role of socio-structural factors at the empirical level, with the aim of generating theories of behavioural responses, with the aim of informing policy and practice [18,24,52].

## **1.2. Declining post-disaster communities, secondary stressors and the importance of group maintenance**

Emergent communities and the support they provide for survivors do not operate indefinitely following the acute phase of disasters [35,53]. Fritz and Williams [20] argue that a lack of shared threat following the main event can lead to emergent communities

disintegrating. What follows is usually the return of the status quo. For example, Quarantelli [53] argues that, while disasters temporarily overshadow pre-impact community differences and dissolve group boundaries, old problems can re-emerge in the post-disaster period. A lack of community cohesion and embeddedness in the recovery phase has been related to a reduction in support structures [54] as well as to the extent of the destruction of the community [30,55]. Inevitably, disasters can tear the fabric of social life and the disappearance of emergent communities can be accompanied by survivors' realisation of the extent of the damage, the beginning of the rebuilding process, as well as a possible perceived lack of available support that overall can negatively affect psychosocial wellbeing [35,56]. The emergence of conflict and division can turn altruistic communities into corrosive ones [57]. This is more likely to be the case when a governmental authority or industry is perceived as responsible for the blame. In such cases, the stress of litigation [58] or perceived inequalities in compensation processes [59] provided to be corrosive for the affected communities. Similarly, social support and post-disaster aid have been shown to either enhance or destroy disaster solidarity depending on the ways they are offered and perceived by the receiving population [31,60]. Top-down support programmes can disrupt the emergent solidarity and hinder social support processes by causing unequal pre-disaster social relations to re-emerge, particularly between minority and majority group members (also see [60]).

Such problems can be exacerbated by the persistence of secondary stressors. Secondary stressors can be described as stressors "*following from and are consequential on what has taken place*" in a disaster [61] and include loss of possessions, loss of personally important memorabilia, prolonged stay in temporary accommodation, damage to houses, difficulties in claiming insurance compensation, economic difficulties, as well as a loss of social networks and reduction in available social support [62]. Social factors can play a very important role over and above infrastructure and systems recovery in tackling continuing problems during the disaster recovery period. Such stressors can take a toll in the wellbeing of those affected. In the case of flooding, secondary stressors can result in anxiety, PTSD and depression [63,64] for both primary and secondary victims (who were disrupted by a flood despite no water entering their homes) compared to unaffected residents one and two years after the flood [65,66].

From the above it becomes apparent that the maintenance of non-corrosive collectives with positive attributes is necessary during the post-disaster recovery phase. In social identity terms, the maintenance of a positive shared social identity is crucial due to the benefits that group belonging can have on recovery and wellbeing [48]. This point is echoed by Tierney

and Oliver-Smith [67] as well as by Oliver-Smith [60] who suggest that, apart from material issues, proper recovery processes attempt to fix the torn fabric of social life and to re-establish a community identity. Commemoration is a process of particular importance to disaster recovery [31,68]. Commemorations can be conceptualised as collective rituals that can act to create a sense of community and commonality [69]. Since disasters can damage a community's social fabric, commemorations and anniversaries can have significant psychosocial functions since they can help re-establish the presence of community, facilitate a sense of belonging and solidarity, and enhance the overall recovery process [68].

### **1.3. The present study**

So far, we have established that shared social identities can emerge during disasters and their effects can be very beneficial both for the response stage as well as in relation to survivors' wellbeing. However, we also showed that disaster communities can decline during the recovery phase, and some types of communities can become corrosive. Given the importance of shared social identities in terms of the support they can mobilize, our aim in this paper is to examine the factors and processes that can contribute to the decline or sustenance of emergent shared social identity following the disaster. More specifically, we are interested in their endurance both in terms of any contextual affordances (e.g., common fate) as well as in terms of any strategic or conscious actions people undertake to sustain a shared identity across community members (e.g. resident meetings). Before our analysis we discuss the context within which our study was conducted.

#### **1.3.1. The 2015-2016 York Floods**

This research took place in York, a city located in North Yorkshire, England, which was hit by Storm Eva in December 2015. The Environment Agency (EA) had issued flood warnings from December 23<sup>rd</sup>, and the storm hit York on December 24<sup>th</sup>. York is crossed by two rivers, the Foss and the Ouse, and on December 25<sup>th</sup> the waters almost entered the control room of the floodgate barrier on the Foss. The EA decided to lift the floodgate to lower the water levels and maintain control over the barrier, and that resulted in the river flooding the surrounding area; around 350 houses and 157 businesses in 37 streets were flooded, and 250 residents were evacuated. A multi-agency response was organised, which involved the North Yorkshire police, the EA, Fire and Rescue services, the City of York council (CYC), and Yorkshire water [70]. There were reports of a strong community spirit in public and media discourses, with around 250 residents and 25 other volunteer groups assisting by gathering



and organising donations, cleaning properties, and filling sandbags. During the period in which our interviews took place, some secondary stressors were still ongoing. For example, some houses were still being repaired and some residents still lived in temporary housing (including some of our participants). In July 2017, almost 18 months after the floods, York residents were continuing to contact the Citizens Advice York for mental health support to assist them to come to terms with the emotional impact of the floods [71].

## 2. Method

### 2.1. Participants

Semi-structured interviews were conducted with 19 residents in March 2017, almost 15 months after the 2015-2016 York floods. We decided to conduct the study in this timeframe since a) a long time had passed since the immediate impact, b) it was the period when some residents were finally returning to their homes, and c) it is a period when secondary stressors can still be prevalent [65,66] and social support might be necessary. Nine participants were male, 10 were female, and their ages ranged from 30 to 75 years old ( $M = 52.1$ ,  $SD = 11.77$ ) (see Table 1). All participants lived in or close to the flooded areas and came from different households. Due to the inherent difficulties of applied research in disaster populations, and particularly regarding recruitment, we used an opportunity sample based on participants' willingness to be interviewed. Sixteen participants lived in homes that were flooded and three were indirectly affected – i.e. they were disrupted in terms of communication, commuting to work, or access to resources, but *without* water entering their houses. One participant was still in temporary accommodation, while some faced various persisting problems such as an inability to claim insurance compensation, property damage, reoccurring stress on rainy days, and irrecoverable possessions. Ethical approval for the study was obtained from the Cross Schools Research Ethics Committee of the University of Sussex. In the results section, participants appear by their respective number and their flood status (e.g. P1F stands for 'Participant 1 Flooded', whereas P6I refers to 'Participant 6 Indirectly affected').

**Table 1.** Participants' demographics, flood status, and perceptions of enduring shared identities.

<u>Participant</u>	<u>Gender</u>	<u>Age</u>	<u>Flood status</u>	<u>Endurance of emergent shared identities</u>
P1	f	38	Flooded	Yes
P2	m	50	Flooded	Yes
P3	m	75	Flooded	No
P4	f	47	Flooded	No
P5	f	46	Flooded	Yes
P6	f	54	Indirectly affected	No
P7	f	42	Flooded	No
P8	m	66	Flooded	Yes
P9	m	47	Flooded	Yes
P10	m	45	Indirectly affected	No
P11	f	43	Flooded	Yes
P12	m	30	Flooded	Yes
P13	f	46	Indirectly affected	Yes
P14	m	66	Flooded	No
P15	f	63	Flooded	Yes
P16	f	-	Flooded	Yes
P17	m	67	Flooded	Yes
P18	m	56	Flooded	No
P19	f	58	Flooded	No

## 2.2. Procedure

### 2.2.1. Interview questions.

The interviews were semi-structured and in total lasted around 13.5 hours ( $M = 40.75$  minutes,  $SD = 13.26$ ). Three interviews with participants whose homes were flooded were conducted by telephone, and the rest face-to-face in a place that suited both participants and the interviewer (first author). Participants signed a consent form or gave their consent to be recorded and interviewed by telephone.

To construct our interview schedule, we drew on the theoretical framework of SIMCR [25,26]. The interviews focused on participants' experiences of their community in relation to the flood at the time of the interview. The questions addressed participants' and other people's behaviours, including extent of coordinated activity and social support, and experiences of common fate and shared identity with others.

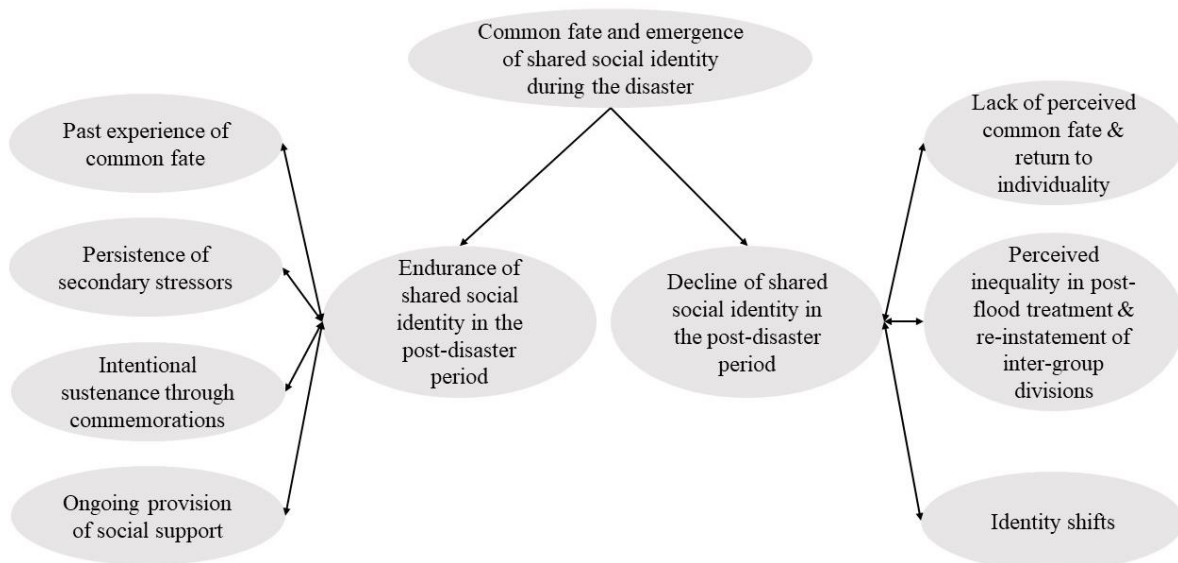
**2.2.2. Analytic procedure.**

After the interviews were transcribed, we went through multiple readings and initial note taking. Our readings were informed by the social identity literature in relation to emergent group behaviour. Also, the aim of our analysis was to delineate the factors that contribute to the endurance or decline of emergent groups in the post-disaster period. For the aforementioned reasons we applied selective coding to our data and performed a realist, deductive thematic analysis [72,73]. Similar to previous research [27,28], as indicators of shared social identity we treat instances in which participants discuss their experiences in terms of unity or feelings of togetherness with others as well as in terms of a sense of community.

**3. Results**

This section is organized around the key themes and subthemes that we identified in our analysis. The first theme concerns how shared social identity emerged during and in the direct aftermath of the floods and is largely a confirmation of previous findings. Theme two explores the factors that aided in the maintenance of the shared social identity 15 months following the floods, whereas theme 3 covers the reasons behind the perceived decline of shared social identity. A visual presentation of the themes can be seen in figure 1.

**Figure 1.** Factors that aid in the endurance or decline of emergent shared social identities in the long-term post-disaster period



**Theme 1: Shared social identity is a function of common fate during and in the immediate aftermath of the disaster**

Similar to previous findings and in line with the SIMCR, it was common for participants to state that the experience of common fate during the disaster led to an increased sense of togetherness. When asked whether she experienced a sense of togetherness, P1F replied that:

**Extract 1**

P1F: yeah I think, ehm, see that's the one thing I think about the floods [...] those days afterwards where we all had to get back into the house and we all had to go up and take out our stuff, people from the council came with skips and trucks and stuff and were taking away our possessions, and there were people standing on the street, our neighbours we had known for years crying their eyes out because they had to get rid of all kind of, you know, they've lost family photos, memorabilia and wedding presents and stuff [inaudible] people were upset and they were shaking, I think everybody was in the same boat as well, and I think we, it does draw the community together more

Earlier in the interview, P1F reported that a shared social identity emerged between herself and her neighbours due to finding oneself experiencing common problems and procedures, as well as sharing similar psychological reactions (*"everybody had been, mostly they'd been in their houses, in, gone through it, so we'd all come off at the same time, got off the boat at the same time, I think we were all kind of complete in shock and complete disbelief"*). In a similar manner, P13I describes a collapse of pre-existing group boundaries and a temporary disruption of the status quo during the disaster that facilitated the emergence of togetherness within the community (*"it's across York as well, it's new networks that have formed because of that and you know I think it, yes it, it promoted social cohesion in a strange way, you know cohesion across the classes you know, across the social groupings, the income divides"*). However, in extract 1 it also becomes evident it is not only the shared experience of common primary stressors (e.g., floodwater) but also of *secondary stressors* (e.g., undergoing stressful cleaning procedures following the flood) that facilitated a shared social identity in the period following the immediate impact of the floods.

Importantly, when the lack of institutional support was perceived in collective terms as a community problem, this too helped foster a sense of togetherness. For example, P13I stated that:

**Extract 2**

P13I: we bonded even more strongly, because there was nobody else to support us, there was nobody else to support the residents, well there were but they weren't getting the help when they actually needed it and in the forms that they needed it, ehm, so I think in a sense it strengthened our social bonds.

The extract above makes the point that perceptions of common fate aren't only generated through being affected by the same physical phenomena (e.g. flooding) but also due to a perceived collective lack of support. The latter can operate as comparative context against which a shared social identity can emerge among participants.

## **Theme 2: Emergent shared social identity can be maintained in the long-term post-disaster period**

From the 19 participants, 11 stated that the shared social identity (i.e. the sense of togetherness) that emerged during the floods persisted even 15 months after the disaster. In the subsequent 4 subthemes we present how participants accounted for this experience. In general, participants discussed the maintenance of shared social identity in terms of past experiences of common fate, ongoing secondary stressors, intentional actions such as commemorations, and ongoing provision of social support.

### **Subtheme 2.1: Shared social identity can be sustained due to experiencing common fate in the past.**

When asked whether they still experience a sense of togetherness in the community, more than half of the participants replied positively. For example, P16F and P2F respectively stated that:

#### **Extract 3**

P16F: I think because you've experienced something so horrible together

And

#### **Extract 4**

P2F: I think you create a bond with the people and they, that, you know when you've been through something that's been very tough and you create a bond with people that have been through it also, I think that's why it it's lasting.

From the above it becomes apparent that changes in the comparative context against which people can come to see themselves as members of a common group aren't necessarily

temporary. Rather perceiving the experience of an adverse situation in a collective manner can maintain a shared social identity even in the long-term aftermath of the disaster in the form of stronger bonds with people. Other participants described potential mechanisms through which the sense of togetherness can persist:

**Extract 5**

P1F: because I think we have shared that common experience, and quite traumatic experience, so ehm it's something, I think this is such a massive part of your life and such a massive ordeal that when you do see people you actually want it's, it's quite nice seeing people who had to go through the same experience because you just think "I can actually talk about it to someone who's completely understanding"

In relation to the extracts above, we suggest that the experience of common fate during a disaster can give rise to a shared social identity that can persist in the post-disaster period due to the strong bonds that were created between the survivors. In extract 5, P1F shows that such bonds can solidify because of a perceived sense of mutual understanding between residents. Thus, shared experiences of the disaster can become ingrained into people's identities which can result in mutual recognition and increased openness in communication ("*someone completely understanding*"), which in turn maintains the emergent sense of togetherness.

**Subtheme 2.2: Shared social identity can be sustained through the experience of similar secondary stressors.**

As we discussed in relation to Theme 1, for some the experience of secondary stressors in the immediate post-flood period gave rise to a shared social identity. However, secondary stressors such as fear of reoccurrence of the event can persist for a long time following the immediate impact, and in our case, reminders such as rising rivers due to intense rainfall appeared to foster a shared social identity. For example, when asked whether there is still a sense of togetherness, P11F replied that:

**Extract 6**

P11F: ehm, yeah, I think so, oddly came back a little bit, probably it was a bit, you know, I think it was the early part of December when the Foss started rising again, that pulled people, [...] everybody's talking about the same thing, we are all talking about, and I said, I did have a conversation [inaudible] the river and of course it wasn't anywhere near, cause it was just the normal level of flowing, but I think a little bit more cohesion just because of the common experience ehm [...] I think there's a little bit more cohesion

Here, the sense of togetherness does not appear as operating indefinitely following the flood, but as disappearing and re-emerging (*“came back”*). Instances of heavy rain acted as reminders of the previous flooding event and acted as comparative context against which people came to see themselves as ingroup members. It is important to point out that such emergent categorisation processes were not automatic but were communicated and enacted as such in collective terms by residents (*“we are all talking about it”, “talking about the same thing”*). Thus, perceiving an instance in relation to previous events (e.g. the previous flood) that were experienced at a collective level could have caused shared identities to become salient again.

### **Subtheme 2.3: Shared social identity can be intentionally sustained through commemorations.**

In some instances, it became apparent that the shared social identity can be intentionally pursued by the residents in events such as commemorations:

#### **Extract 7**

P17F: ... yes, ok, and we all went to that piece of ground with a glass and a bottle of champagne and we had a chat and raised the glass, but it was blooming cold and I had a house full of family and friends anyway so we spent about half an hour also chatting and then we came back, but that was quite nice and I think it's still there, *“alright we're all busy with our work, our hobbies and whatever, but we still have that underlying core of the community that we developed during the floods”*

E: I see, why, why is it sustained?

P17F: ehm I think because we were all brought together, we were all made to realise that we are very similar in many ways, although we are very different, we are very similar, and so this is our little place, this is us and this is where we belong. We did actually want to close the road and have a street party, but the council weren't very keen on that.

Shared social identities (as expressed in perceived community spirit and togetherness) were actively sustained through residents' meetings during the anniversary of the floods, where the community feeling is actively pursued. The importance of commemorations in the post-disaster recovery period has been discussed previously [68]. In our case, community gatherings are described as positive experiences and as a validation that the continuity of the community spirit is ongoing despite the re-emergence of everyday routines (*“busy with our work ... during the floods”*). Thus, following a disaster, commemorations and anniversaries can help to re-establish the existence of a community and strengthen a collective identity

among residents. It is also worth noting the important role that place and space plays in sustaining shared identities. A secure sense of place can be crucial for wellbeing [74], and here we make the case that specific landmark places and activities can also play a pivotal role in anniversaries and commemorations by being central elements around which a group identity is formed.

**Subtheme 2.4: Ongoing provision of practical and emotional social support can sustain shared social identity.**

Some participants stated that the ongoing provision of social support reinvigorated their sense of belonging to their communities. For example, P12F stated that:

**Extract 8**

P12F: [...] and we were really kind of humbled by that [a £200 cash payout from a charity to all flooded residents] because it was so [inaudible] we didn't expect it at all, ehm, especially after you know a few months we kind of thought that was it, you know, we were, we got what we were gonna get and we had just kind of make the best of it and then in ehm I'd say October [...] we got another eh £200 from the same charity group, which again we didn't know it was coming, it just showed up in my bank one day and I was like 'where did this come from' so that was like, that was you know incredibly touching really because we didn't expect it, and I still don't really know where the money came from except that it was [...] that that kind of stuff makes you feel you're part of a collective, but then you get the, this official side, the government and the council, which makes you feel you're kind of left to deal with it on your own, it's a weird sort of position.

Shared social identities can increase donations [75] and provision of social support [29] in disasters. In the above extract, we note the opposite relationship, whereby provision of support can facilitate a shared social identity in the long-term aftermath of a disaster. Despite that the sense of togetherness can decline following the main event, receiving ongoing social support was perceived as enhancing P12F's sense of belonging to a group ("makes you feel you're part of a collective") and as generating positive feelings. In contrast, perceived lack of support from official agencies was described as generating a sense of isolation and lack of support ("you're kind of left to deal with it on your own").



However, aside from practical support it is also emotional support that can play a significant role in people's recovery through the sustenance of a shared social identity. For example, when asked whether she still receives support today, a participant stated that:

### **Extract 9**

P1F: ehm to a sense people are very interested and you know people, parents at school or friends, people are very interested to know when we are going to be back at the house or how it's going, and I feel as I get asked that question lost, and I'm glad that people care, I might say it feels quite depressing when it comes the answer after this, but there is always the same answer "no we don't know", but I I I'm very grateful that people do ask because I would feel incredibly isolated about us going through this, who were, still experience, but people not asking the question, so I do feel I'm getting support.

People's needs during the post-flood recovery period aren't stable but can change significantly over time, and so does their nature which can shift from collective (e.g. community cleanups) to more individualistic (e.g. claiming insurance and fixing one's house). In the case of P1F, the ongoing residency in temporary accommodation appears to be a persisting stressor. However, people's interest in her situation is perceived as manifestation of caring and therefore as an ongoing source of emotional support that tackles isolation and fosters a sense of belonging.

### **Theme 3: The decline of shared social identity in the post-flood period**

Eight participants stated that the emergent togetherness which they experienced during the floods had not persisted. In this section we discuss how they accounted for the decline in the emergent shared social identity, showing that the main reasons were construed in terms of perceived post-flood inequality, of a lack of common fate, and in terms of identity shifts.

#### **Subtheme 3.1: Shared social identity can decline due to a lack of common fate**

The decline was framed by some participants as a natural process. For example, P10I stated that:

### **Extract 10**

P10I: it's called the blitz spirit, I'm sorry but this is all I can put it down to, it's just a thing that we realised we had it in World War II, when Londoners got bombed, instead of you know leaving each other to it and stuff like that, no, they came out with cups of tea, you know you've lost all your clothing 'oh here there is a coat for you', they call it

the blitz spirit and that is basically, that is all I can put it down to, it's no, you know it'll happen in all communities all over the world [...] During a crisis we band together, unfortunately after the crisis is over we disband and go our own ways again you know.

P10I describes the emergent community togetherness as reflecting the 'Blitz Spirit' and describes it as a universal process. However, P10I stated that the sense of togetherness disappeared after the crisis, which echoes the point made by Fritz and Williams [20] about the decline of community due to the lack of shared threat. In SCT terms, psychological changes such as these occur due to changes in the comparative context; the crisis and shared adversity causes people to draw together, but the subsequent absence of such a phenomenon can cause the sense of togetherness to fade (P18F: "*I mean it all depends, the whole thing was dependent on the immediate crisis, so when you don't have an immediate crisis you are not really tested as to the how the community ethos has changed*", P10I: "*after the crisis is over we disband and go our own ways*"). Such experiences of adversity are influenced by P10I's use of "we" represents the decline of shared identity and the return to individuality as a normative, community-wide process rather than an inclination of the individual person. Some authors such as Frank Furedi [76] have argued that certain cultural narratives (such as national identity content) can shape the ways that people experience adversity. As a result, P10I's universal processes of decline could be linked to elements of the English national identity related to the Second World War and the narrative of the Blitz spirit.

While P10I refers to a return to individuality, in other cases participants referred to a return to pre-existing group divisions.

### **Subtheme 3.2: Shared social identity can decline perceived inequality in post-flood treatment.**

As we mentioned earlier, the widespread impact and the common situation that residents found themselves in during the disaster operated as the context against which previous intergroup boundaries dissolved and residents operated as a single, united community. For example, P6I stated that "*I think because there's so much of the city that was affected, that people were just looking at the city as a whole and everybody living in it, rather than specific communities, so even though we're gypsy Traveller, we were seen as York residents and we lost that, we became a whole community instead of a small community within.*" However, when asked why this shared sense of togetherness changed, this participant relied that:

**Extract 11**

P6I: because that crisis isn't there anymore [...] once the houses, people started going back into their own houses and homes and things, then York became separate again.

Despite the disaster temporarily breaking pre-existing group boundaries and facilitating the appearance of a larger community based on common suffering, the perceived inequality during the recovery period made the participant construe the event in terms of intergroup relations and pre-existing discrimination [54]. The restatement of the status-quo in the post-disaster period is well documented in the literature [53] and, in the case of P6I, settled residents' returning to normality served to re-introduce intra-community boundaries and perceived intergroup discrimination, finally damaging the wider emergent community cohesion. Similar was the case for P7F who, when asked about why she did not feel connected in the post-disaster period, stated that "P7F: *"I don't know, because we keep yourself to yourself, I suppose someone's gonna look back and think 'well the brigade never come to us' because there was after your own people"*." It appears that while common fate can operate as a mechanism for unity, previous group boundaries can still become salient when differences in the response period are perceived in ingroup-outgroup dimensions ("us", "your own people"). Thus, the return to 'normality' can be described as the re-emergence of pre-existing group boundaries and the status quo.

**Subtheme 3.3: Flood-related shared social identity can decline due to identity shifts.**

Other participants described the subsequent lack of togetherness in terms of contextual changes that made other identities other than the 'flood' identity more salient. For example, when asked about why the sense of togetherness declined, P14F states that:

**Extract 10**

P14F: people refocus ahm, they get back their sense of the rest of their lives, ahm, you're no longer primarily a flood victim, you got other things happening so you can't, no it's not, can't be a vocation, it can't be your primary identity, not for very long, and that depends on your circumstances, so if you got small children you might find you have a lot more continuously in common with other people who got small children, ahm, I think some of the other factors, and then it differentiates more and more, some people are back after three months, some people after 6 months, some people not back for a year or 15 months, ahm, so yes divisions emerge, differences emerge, not divisions necessarily, and there will be different [...]

Flood identity can emerge in relation to the disaster context and become a source of unity during the impact and immediate aftermath of a disaster. However, according to P14F, changes in the immediate and post-disaster contexts can cause identity shifts in disaster survivors (“no longer primarily a flood victim, you got other things happening”). After the floods, survivors are positioned in more fragmented ways, since people’s needs and recovery time are likely to vary. Inevitably, this can cause the salience of different social identities for different people (“divisions emerge, differences emerge”) and the subsequent decline of the previous operant shared identity which acted as the basis of togetherness.

#### **4. Discussion**

Previous research has established that community groups can emerge in disasters and provide those in need with crucial social support [20,23,31], but also that emergent groups can decline in the post-disaster period [20,35,77]. In this paper, we adopted a social psychological approach to examine the processes that contribute to the endurance or decline of emergent groups in the long-term aftermath of the disaster.

As we mentioned earlier, the development of community resilience sits at the forefront of strategies employed to deal with the increasing impact of climate change [9,19]. To conceptualize community resilience, the most usual indicator and target of interventions is the development of social capital, which rightly assumes that stronger and more cohesive community networks will be able to respond better to and cope more efficiently with the impact of disasters [10,11,51,78]. However, as some researchers have argued, the notion of social capital cannot account for the processes that mobilize existing networks [13] or for the emergence of novel, unexpected capitals [17] (or social capacity, to use a non-economic and less reductionistic term; also see Tierney & Oliver-Smith [67]). A more general argument has been made about the importance of adopting a systems thinking approach that will theorize on the links between the individual, the collective, and the structural levels, and will generate theories to be tested empirically [5].

Considering the above points, a distinct contribution of our paper is the explanation of the processes described above on the basis of self-categorization theory in social psychology [43], and more specifically on the tenets of the SIMCR [25,26]. This framework allowed us to conceptualise emergent communities as the manifestation of emergent shared social identities and trace the precise dynamics of the factors that affect their progress. We construed shared social identities as participants’ talk about a sense of togetherness, unity, and solidarity. Considering the benefits of shared social identity for wellbeing [46–48], the maintenance of

positive groups in the post-disaster period can be crucial for health and the recovery period [3,38,74]. This approach allows us to identify antecedents as well as outcomes of shared social identity and identify how they might interact with other socio-structural factors. This approach also allows us to generate hypotheses that can be tested empirically (e.g. see [49]).

First of all, the first part of our thematic analysis verifies previous findings (e.g. [27–29]) on how perceived common fate both *during the incident* as well as in the direct aftermath can contribute to an emerging shared social identity among participants. Participants who experienced common fate perceived themselves to be members of a wider community and felt a sense of togetherness with others whom they saw as undergoing the same hardship or the same secondary stressors. Thus, the first element of our thematic analysis attests to the appropriateness of the SIMCR as an explanatory concept of emergent groups in disasters.

In relation to the endurance or decline of shared social identity in the post-flood period, participants were almost split. Regarding endurance, perceptions of past common fate served as the glue that sustained this sense of togetherness 15 months following the incident. Those participants reported increased understanding and openness in communication with residents that they saw as having undergone the same hardship. *Thus it appears that emerging shared social identity can in some instances be transformed into enduring social capital.* In other cases, when secondary stressors were perceived in collective terms, a shared social identity that seemed to have disappeared following the incident seemed to re-emerge. Following this observation, it would be useful to know how reminders of extreme events might affect wellbeing when they are perceived in individualistic terms or when collective efficacy is not particularly strong. Moreover, shared social identities need not only continue operating passively over time, but they can also be actively pursued by residents. Ntontis et al. [29] showed how community spirit can be strategically constructed through discourse. We advance such findings by showing how people intentionally came together to celebrate the presence of the community after the floods, which can enhance their collective identity, provide them with meaning, and possibly enhance their expectations of support. Eyre [68] has extensively discussed the broader implications of commemorations and anniversaries in enhancing community cohesion (also see [60]). It is also important to note that events of this kind are inextricably linked to space - certain places operated as centres for the emerging communities, around which support was mobilised and goods were gathered and distributed both directly and the months following the floods. In turn, these places acted as anchors of those shared identities by operating as the space in which residents chose to perform certain rituals such as the celebration of the anniversary of the flood. This observation echoes

anthropological points regarding the link between space, the material environment, and psychosocial processes in relation to the re-constitution of community [60].

The presence and persistence of social support also appears to be crucial to maintaining the sense of community. McNulty and Rennick [54] have discussed how the presence of social support can help sustain a community during the recovery period. We found from our participants in York how social support can positively impact their sense of togetherness. Indeed, residents who received a donation in the aftermath of the event reported feeling an enhanced sense of togetherness and community presence, while they also reported feeling let down by the lack of support from the local authorities and the government, which was initially considered as its supposed provider. Thus, we make the case that the presence of donations and social support in general can be a factor that assists in increasing people's perceptions of the presence of social support and crucially in continuation of community spirit in the aftermath of floods: *others' (supportive) actions towards us can tell us that we are members of the same group*. A similar point has been made in relation to collective behaviour processes and cooperation in crowding situations [79], and through our analysis we extend this point to the context of disasters.

For some other participants, the sense of togetherness that developed during the floods seemed to 'naturally' decline over time due to a lack of common fate and was replaced by a return to individuality. Perceived common fate can bond people, and a perceived lack of such a comparative context against which people unite can break down the sense of unity. For others, the decline was related to perceived unequal treatment and by the re-emergence of previous group boundaries. Kaniasty and Norris [35,39] have extensively discussed about inequalities in the provision of social support with an emphasis on minority group members. Similar is the case in our findings, whereby a perceived shared social identity between settled residents and members of the Travelling community appeared to dissolve during the recovery period. This reportedly happened due to perceived inequality of treatment between minority and majority members, or because of differentiations in the recovery process. Finally, decline in shared social identity appeared to be a function of identity shifts. The re-emergence of everyday events bears with it changes in the context of survivors' lives, which in turn can cause previous salient group identifications to decline due to the re-operation of people's multiple social identities. Thus, the lack of a flood and the subsequent decline in the salience of flood identities can make the emergent sense of togetherness disappear.

There is an ongoing wider discussion in relation to inequality inherent in communities and how they can be masked through the use of the concept of 'community' [80]. We agree

that ‘community’ does not necessarily equate to some generic commonality between people who might reside in the same geographical area, share a tradition or have some form of common pre-existing ties (the UK’s Strategic National Framework on Community Resilience [19] is helpful in that it identifies various types of ‘communities’ that can be affected by or created due to an extreme event). By using the term ‘community’ in this paper we do not presuppose any form of bonds between people in a romanticized sense. Rather, social psychology and more specifically the concept of *social identity* allows us to identify the conditions under which people affected by a disaster did indeed experience a (reported) sense of togetherness (or ‘community’) with others (regardless of the existence of any pre-existing bonds or common place of residence), and the reasons why it disappeared. Indeed, for some residents of minority groups, the reported sense of community seemed to decline due to the re-emergence of the pre-disaster status-quo. Our approach, which focuses explicitly on group dynamics and their interaction with social context and other structural factors points specifically to the need for a more dynamic and non-essentializing conceptualization of the notion of ‘community’. ‘Community’ should not be used to gloss over the underlying dynamics or mask the existing inequality, but any useful analysis should be able to delineate the psychosocial and structural factors (and the interactions between them) that cause new groups to emerge or existing groups to mobilize, that facilitate collective coordination and the provision of social support, and reduce ‘Othering’. Moreover, it should also be able to account for the conditions under which the above phenomena disappear. Hopefully our analysis is a step in that direction.

Inevitably, our work has weaknesses. It is a first attempt to uncover the processes that occur in relation to shared identities in the aftermath of floods and so our findings should be treated with caution. One limitation is that the cross-sectional design does not allow us to investigate social identity processes over time within the same sample, so future research should attempt to sample the same population longitudinally. Moreover, the limited number of participants that interview studies inevitably engage means that other participants might give different or even contradictory accounts to these. Also, even though we sampled residents from various areas of York, participants were self-selected and residents from missed areas might have also given different accounts. The self-selected sample poses the risk that more community-oriented participants decided to participate in the study. Furthermore, our dataset is based on qualitative interviews in the UK, where the notions of ‘Blitz Spirit’ and community solidarity are widely used discursive repertoires mobilized in times of collective distress. Self-selected participants could endorse this repertoire higher compared to less

community-oriented participants, skewing our view of disaster community processes. As a result, we cannot be certain about the extent to which the social processes described would apply for both high and low community-oriented participants. Thus, future research should incorporate more robust sampling methods in terms of areas of residence and demographics. For example, it can adopt a survey design that will sample residents from a larger area, overcoming the sampling limitations of qualitative studies. Finally, from the present data we cannot be sure about the extent to which certain groups emerged among people that knew each other prior to the disaster or between total strangers such as in the case of the London bombings [28]. Despite that the vast majority of our data shows emergent groups among people who wouldn't speak to each other prior to the disaster, future quantitative research will have to take into account pre-existing networks and census-type data and their effects on social cohesion.

#### **4.1. Summary and practical implications**

Our paper is a social psychological attempt to investigate social identity processes in the long-term aftermath of floods. The damage of floods can persist for a long time after the immediate impact [81], and negatively affect mental health [8,64,65]. This was also evident in the case of the floods in York, where mental healthcare was still needed almost 1.5 year after the disaster [71]. The emergent sense of togetherness can be crucial to the mobilization of support to affected people, and we have pointed to some factors that assist in maintaining that support or promote its decline. We hope we have demonstrated the importance of social psychological research on group processes for the field of disaster studies, as well as for the resilience of communities and their members. Despite groups emerging during the response phase, they are usually not long-lasting. Therefore:

- a) The maintenance of community groups based around a positive, non-corrosive content should be facilitated by communities themselves as well as by the authorities for the period following the incident, since they can provide people who are affected with crucial support and a sense of identity and belonging when they need it most. This can be achieved by assisting in community-based activities that aim to support the affected residents, and through the provision of space that can be actively used by communities (such as community hubs) to foster social interaction. Resources and support (e.g. meeting venues, online platforms) should



be facilitated by responding authorities and governmental organizations, where these are not readily available.

- b) Commemorations, anniversaries, and other community rituals should be assisted since they can act as re-affirmation of the existence of a community. These are particularly important in the first few years of recovery when maintaining group identity is most needed/useful.
- c) The authorities should act and be perceived as acting equally towards the affected residents; perceived inequality in treatment is likely to lead to perceived discrimination, the re-establishment of group boundaries, and further tears in the social fabric.

### 5. References

- [1] Environment Agency, Under the weather. Improving health, wellbeing and resilience in a changing climate, Bristol, 2015.
- [2] S. Lindley, J. O'Neill, J. Kandeh, N. Lawson, R. Christian, M. O'Neill, Climate change, justice and vulnerability, 2011. <http://nationalfloodforum.org.uk/wp-content/uploads/JRF-climate-change-social-vulnerability-full.pdf>.
- [3] C. Twigger-Ross, K. Brooks, L. Papadopoulou, P. Orr, R. Sadauskis, A. Coke, N. Simcock, A. Stirling, G. Walker, Community resilience to climate change: an evidence review, 2015.
- [4] A. Haines, J.A. Patz, Health effects of climate change, *JAMA*. 291 (2004) 99–103.
- [5] H.L. Berry, T.D. Waite, K.B.G. Dear, A.G. Capon, V. Murray, The case for systems thinking about climate change and mental health, *Nat. Clim. Chang.* 8 (2018) 282–290. <https://doi.org/10.1038/s41558-018-0102-4>.
- [6] Committee on Climate Change, Managing climate risks to well-being and the economy, (2014) 202.
- [7] K. Hayes, G. Blashki, J. Wiseman, S. Burke, L. Reifels, Climate change and mental health: Risks, impacts and priority actions, *Int. J. Ment. Health Syst.* 12 (2018) 1–12. <https://doi.org/10.1186/s13033-018-0210-6>.
- [8] A. Fernandez, J. Black, M. Jones, L. Wilson, L. Salvador-Carulla, T. Astell-Burt, D. Black, Flooding and mental health: A systematic mapping review, *PLoS One*. 10 (2015) 1–20. <https://doi.org/10.1371/journal.pone.0119929>.
- [9] UNISDR, Sendai Framework for Disaster Risk Reduction 2015 - 2030, Geneva, Switzerland, 2015. <https://doi.org/A/CONF.224/CRP.1>.
- [10] D.P. Aldrich, The importance of social capital in building community resilience, in: Y. W., G. W. (Eds.), *Rethink. Resilience, Adapt. Transform. a Time Chang.*, Springer, Cham, Switzerland, 2017: pp. 357–364. [https://doi.org/10.1007/978-3-319-50171-0\\_23](https://doi.org/10.1007/978-3-319-50171-0_23).
- [11] D.P. Aldrich, M.A. Meyer, Social capital and community resilience, *Am. Behav. Sci.* (2014) 1–16. <https://doi.org/10.1177/0002764214550299>.
- [12] S. Misra, R. Goswami, T. Mondal, R. Jana, Social networks in the context of community response to disaster: Study of a cyclone-affected community in Coastal West Bengal, India, *Int. J. Disaster Risk Reduct.* (2017). <https://doi.org/10.1016/j.ijdr.2017.02.017>.
- [13] R. Wickes, C. Britt, L. Broidy, The resilience of neighborhood social processes: A case

- study of the 2011 Brisbane flood, *Soc. Sci. Res.* (2016). <https://doi.org/10.1016/j.ssresearch.2016.07.006>.
- [14] T.R. Wind, M. Fordham, I.H. Komproe, Social capital and post-disaster mental health, *Glob. Health Action.* 4 (2011) 6351. <https://doi.org/10.3402/gha.v4i0.6351>.
- [15] G. Greene, S. Paranjothy, S.R. Palmer, Resilience and vulnerability to the psychological harm from flooding: The role of social cohesion, *Am. J. Public Health.* 105 (2015) 1792–1795. <https://doi.org/10.2105/AJPH.2015.302709>.
- [16] R. Wickes, R. Zahnow, M. Taylor, A.R. Piquero, Neighborhood structure, social capital, and community resilience: Longitudinal evidence from the 2011 Brisbane flood disaster, *Soc. Sci. Q.* 96 (2015) 330–353. <https://doi.org/10.1111/ssqu.12144>.
- [17] S. Uekusa, Rethinking resilience: Bourdieu's contribution to disaster research, *Resilience.* (2017) 1–15. <https://doi.org/10.1080/21693293.2017.1308635>.
- [18] E. Ntontis, J. Drury, R. Amlôt, G.J. Rubin, R. Williams, What lies beyond social capital? The role of social psychology in building community resilience to climate change., *Traumatology (Tallahass. Fla).* (2019). <https://doi.org/10.1037/trm0000221>.
- [19] Cabinet Office, Strategic national framework on community resilience, London: Cabinet Office, 2011.
- [20] C. Fritz, H. Williams, The human being in disasters: A research perspective, *Ann. Am. Acad. Pol. Soc. Sci.* 309 (1957) 42–51. <https://doi.org/doi:10.1177/000271625730900107>.
- [21] E.L. Quarantelli, Emergent behavior at the emergency time periods of disasters: Final Report for Federal Emergency Management Agency, Washington, D.C. 20472, (1984) 48.
- [22] H. Rodriguez, J. Trainor, E.L. Quarantelli, Rising to the challenges of a catastrophe: The emergent and prosocial behavior following Hurricane Katrina, *Ann. Am. Acad. Pol. Soc. Sci.* 604 (2006) 82–101. <https://doi.org/10.1177/0002716205284677>.
- [23] R. Solnit, *A paradise built in hell: The extraordinary communities that arise in disaster*, Penguin Books, 2009.
- [24] J. Drury, H. Carter, C. Cocking, E. Ntontis, S.. Guven, R. Amlot, Facilitating collective resilience in the public in emergencies: Twelve recommendations based on the social identity approach, *Front. Public Heal.* 7 (2019) 1–21. <https://doi.org/https://doi.org/10.3389/fpubh.2019.00141>.
- [25] J. Drury, Collective resilience in mass emergencies and disasters: A social identity model, in: J. Jetten, C. Haslam, S.A. Haslam (Eds.), *Soc. Cure Identity, Heal. Well-Being*, Psychology Press, 2012: pp. 195–215.
- [26] J. Drury, The role of social identity processes in mass emergency behaviour: An integrative review, *Eur. Rev. Soc. Psychol.* 29 (2018) 1–53. <https://doi.org/https://doi.org/10.1080/10463283.2018.1471948>.
- [27] J. Drury, C. Cocking, S.D. Reicher, Everyone for themselves? A comparative study of crowd solidarity among emergency survivors., *Br. J. Soc. Psychol.* 48 (2009) 487–506. <https://doi.org/10.1348/014466608X357893>.
- [28] J. Drury, C. Cocking, S.D. Reicher, The nature of collective resilience: Survivor reactions to the 2005 London bombings, *Int. J. Mass Emerg. Disasters.* 27 (2009) 66–95. <https://doi.org/10.1007/s13398-014-0173-7.2>.
- [29] E. Ntontis, J. Drury, R. Amlôt, G.J. Rubin, R. Williams, Emergent Social Identities in Floods: Implications for Community Psychosocial Resilience, *J. Community Appl. Soc. Psychol.* 28 (2018) 3–14. <https://doi.org/10.1002/casp.2329>.
- [30] K. Kaniasty, F. Norris, A test of the social support deterioration model in the context of natural disaster., *J. Pers. Soc. Psychol.* 64 (1993) 395–408. <https://doi.org/10.1037/0022-3514.64.3.395>.

- [31] A. Oliver-Smith, The brotherhood of pain: Theoretical and applied perspectives on post-disaster solidarity, in: A. Oliver-Smith, S. Hoffmann (Eds.), *Angry Earth Disaster Anthropol. Perspect.*, Routledge, New York, 1999: pp. 156–172.
- [32] T. Coates, Conscious community: belonging, identities and networks in local communities' response to flooding, (2010) 242.
- [33] C. Fritz, Disasters and mental health: Therapeutic principles drawn from disaster studies. Historical and comparative disaster series #10 (written in 1961), (1996).
- [34] A.H. Barton, *Communities in disaster: A sociological analysis of collective stress situations.*, Doubleday, New York, 1969.
- [35] K. Kaniasty, F. Norris, The experience of disaster: individuals and communities sharing trauma., in: R. Gist, B. Lubin (Eds.), *Response to Disaster Psychosoc. Community, Ecol. Approaches*, Bruner/Mazel, London, 1999: pp. 25–62. <https://doi.org/http://dx.doi.org/10.1016/S0022-3999%2802%2900418-X>.
- [36] R. Bolin, Disaster characteristics and psychosocial impacts., in: B. Sowder (Ed.), *Disasters Ment. Heal. Sel. Contemp. Perspect.*, National Institute of Mental Health, Rockville, MD, 1985: pp. 3–28.
- [37] K. Erikson, *Everything in Its Path: Destruction of community in the Buffalo Creek*, Touchstone, New York, 1976.
- [38] D. Paton, M. Irons, Communication, sense of community, and disaster recovery: A Facebook case study, *Front. Commun.* 1 (2016). <https://doi.org/10.3389/fcomm.2016.00004>.
- [39] K. Kaniasty, F.H. Norris, In search of altruistic community: Patterns of social support mobilization following Hurricane Hugo, *Am. J. Community Psychol.* 23 (1995) 447–477. <https://doi.org/10.1007/BF02506964>.
- [40] V.. Turner, *The ritual process: Structure and anti-structure.*, Aldine Pub. Co., Chicago, 1969. <https://doi.org/10.4324/9781315134666-3>.
- [41] R. Williams, J. Drury, Psychosocial resilience and its influence on managing mass emergencies and disasters, *Psychiatry.* 8 (2009) 293–296. <https://doi.org/10.1016/j.mppsy.2009.04.019>.
- [42] R. Williams, J. Drury, The nature of psychosocial resilience and its significance for managing mass emergencies, disasters and terrorism., in: A. Awotona (Ed.), *Rebuilding Sustain. Communities Child. Their Fam. after Disasters A Glob. Surv.*, Cambridge Scholars Publishing, Newcastle-upon-Tyne, UK, 2010: pp. 121–148.
- [43] J.C. Turner, M.A. Hogg, P.J. Oakes, S. Reicher, M. Wetherell, *Rediscovering the social group: A self-categorisation theory.*, Blackwell, Oxford, 1987.
- [44] J.C. Turner, Social categorization and the self-concept: A social cognitive theory of group behaviour, in: E.J. Lawler (Ed.), *Adv. Gr. Process. Theory Res.*, JAI Press, Greenwich, CT, 1985: pp. 77–122.
- [45] J.C. Turner, Towards a cognitive redefinition of the social group, in: H. Tajfel (Ed.), *Soc. Identity Intergr. Relations*, Cambridge University Press, Cambridge, UK, 1982: pp. 15–40.
- [46] C. Haslam, J. Jette, T. Cruwys, G.A. Dingle, S.A. Haslam, *The new psychology of health: Unlocking the social cure*, Routledge, London, 2018.
- [47] J. Jetten, C. Haslam, S.A. Haslam, G. Dingle, J.M. Jones, How groups affect our health and well-being: The path from theory to policy, *Soc. Issues Policy Rev.* 8 (2014). <https://doi.org/10.1111/sipr.12003>.
- [48] J. Jetten, S.A. Haslam, T. Cruwys, K.H. Greenaway, C. Haslam, N.K. Steffens, Advancing the social identity approach to health and well-being: Progressing the social cure research agenda, *Eur. J. Soc. Psychol.* 47 (2017) 789–802. <https://doi.org/10.1002/ejsp.2333>.

- [49] J. Drury, R. Brown, R. González, D. Miranda, Emergent social identity and observing social support predict social support provided by survivors in a disaster: solidarity in the 2010 Chile earthquake, *Eur. J. Soc. Psychol.* 00 (2016). <https://doi.org/10.1002/ejsp.2146>.
- [50] E. Ntontis, Group processes in community responses to flooding: Implications for resilience and wellbeing, University of Sussex, 2018. <http://sro.sussex.ac.uk/id/eprint/79752/>.
- [51] J.F. Helliwell, H. Huang, S. Wang, Social capital and well-being in times of crisis, *J. Happiness Stud.* 15 (2014) 145–162. <https://doi.org/10.1007/s10902-013-9441-z>.
- [52] E. Ntontis, J. Drury, R. Amlôt, G.J. Rubin, R. Williams, Community resilience and flooding in UK guidance: a review of concepts, definitions, and their implications, *J. Contingencies Cris. Manag.* 27 (2018) 2–13. <https://doi.org/10.0000/1468-5973.12223>.
- [53] E.L. Quarantelli, Disaster related social behavior: Summary of 50 years of research findings, 1999.
- [54] A. McNulty, K. Rennick, The experience of flooding in the uk: A research study, 2013.
- [55] F.H. Norris, Disasters in urban context, *Journal Urban Heal. Bull. New York Acad. Med.* 79 (2002) 308–314.
- [56] F.H. Norris, K. Kaniasty, Received and perceived social support in times of stress: a test of the social support deterioration deterrence model., *J. Pers. Soc. Psychol.* 71 (1996) 498–511. <https://doi.org/10.1037/0022-3514.71.3.498>.
- [57] K. Erikson, *A new species of trouble*, Norton, New York, 1994.
- [58] J.S. Picou, B.K. Marshall, D.A. Gill, Disaster, litigation, and the corrosive community, *Soc. Forces.* 82 (2005) 1493–1522. <https://doi.org/10.1353/sof.2004.0091>.
- [59] B. Mayer, K. Running, K. Bergstrand, Compensation and community corrosion: Perceived inequalities, social comparisons, and competition following the Deepwater Horizon oil spill, *Sociol. Forum.* 30 (2015) 369–390. <https://doi.org/doi:10.1111/socf.12167>.
- [60] A. Oliver-Smith, Communities after catastrophe: Reconstituting the material, reconstituting the social, in: S.E. Hyland (Ed.), *Community Build. Twenty-First Century*, School of American Research Press, Santa Fe, New Mexico, 2005: pp. 45–70.
- [61] Department of Health, NHS Emergency Planning Guidance: Planning for the psychosocial and mental health care of people affected by major incidents and disasters: Interim national strategic guidance, (2009).
- [62] S. Lock, G.J. Rubin, V. Murray, M.B. Rogers, R. Amlôt, R. Williams, Secondary stressors and extreme events and disasters: A systematic review of primary research from 2010-2011, *PLOS Curr. Disasters.* Edition 1 (2012) 1–17. <https://doi.org/10.1371/currents.dis.a9b76fed1b2dd5c5bfcfc13c87a2f24f>.Authors.
- [63] M. Ahern, S. Kovats, The health impact of floods, in: R. Few, F. Matthies (Eds.), *Flood Hazards Heal. Responding to Present Futur. Risks*, Earthscan, London & Sterling, VA, 2007: pp. 27–53.
- [64] E.L. Tempest, English National Study on Flooding and Health Study Group, B. Carter, C.R. Beck, G.J. Rubin, Secondary stressors are associated with probable psychological morbidity after flooding: a cross-sectional analysis., *Eur. J. Public Health.* (2017) 1–6. <https://doi.org/https://doi.org/10.1093/eurpub/ckx182>.
- [65] D. Jermacane, T.D. Waite, C.R. Beck, A. Bone, R. Amlôt, M. Reacher, S. Kovats, B. Armstrong, G. Leonardi, G.J. Rubin, I. Oliver, The English National Cohort Study of Flooding and Health: The change in the prevalence of psychological morbidity at year two, *BMC Public Health.* (2018) in press.
- [66] T.D. Waite, K. Chaintarli, C.R. Beck, A. Bone, R. Amlôt, S. Kovats, M. Reacher, B. Armstrong, G. Leonardi, G.J. Rubin, I. Oliver, The English national cohort study of

- flooding and health: cross-sectional analysis of mental health outcomes at year one, *BMC Public Health*. 17 (2017) 129. <https://doi.org/10.1186/s12889-016-4000-2>.
- [67] K.J. Tierney, A. Oliver-Smith, Social dimensions of disaster recovery, *Int. J. Mass Emerg. Disasters*. 30 (2012) 123–146.
- [68] A. Eyre, Remembering: Community commemoration after disaster, in: H. Rodriguez, E.L. Quarantelli, R.R. Dynes (Eds.), *Handb. Disaster Res.*, 1st ed., Springer, 2007.
- [69] E. Durkheim, *The elementary forms of religious life.*, Tr. J. W. Swain Free Press., New York, 1915.
- [70] City of York Council, *Floods in York - Key facts*, York, Yorkshire, UK, 2016.
- [71] YorkMix, York flood victims seek counselling after ‘emotional impact’ hits home • YorkMix, (2017). <https://www.yorkmix.com/community-news/york-flood-victims-look-for-counselling-emotional-impact-hits-home/> (accessed December 18, 2019).
- [72] V. Clarke, V. Braun, N. Hayfield, Using thematic analysis in psychology, in: J.. Smith (Ed.), *Qual. Psychol. A Pract. Guid. to Res. Methods*, Sage, London, 2015.
- [73] V. Braun, V. Clarke, Using thematic analysis in psychology, *Qual. Res. Psychol.* 3 (2006) 77–101. <https://doi.org/10.1191/1478088706qp063oa>.
- [74] K. Walker-Springett, C. Butler, W.N. Adger, Wellbeing in the aftermath of floods, *Heal. Place*. 43 (2017) 66–74. <https://doi.org/10.1016/j.healthplace.2016.11.005>.
- [75] H. Zagefka, T. James, The Psychology of charitable donations to disaster victims and beyond, *Soc. Issues Policy Rev.* 9 (2015) 155–192. <https://doi.org/10.1111/sipr.12013>.
- [76] F. Furedi, From the narrative of the Blitz to the rhetoric of vulnerability, *Cult. Sociol.* 1 (2007) 235–254. <https://doi.org/10.1177/1749975507078189>.
- [77] E.L. Quarantelli, The disaster recovery process: What we know and do not know from research, 1999. <http://dspace.udel.edu/handle/19716/309> (accessed August 30, 2017).
- [78] D.P. Aldrich, Social capital in post disaster recovery: Towards a resilient and compassionate East Asian community, in: Y. Sawada, S. Oum (Eds.), *Econ. Welf. Impacts Disasters East Asia Policy Responses ERIA Res. Proj. Rep. 2011-8*, ERIA Resea, ERIA, Jakarta, 2012: pp. 157–178. <https://doi.org/10.1007/978-4-431-55022-8>.
- [79] H. Alnabulsi, J. Drury, A. Templeton, Predicting collective behaviour at the Hajj: Place, space and the process of cooperation, *Philos. Trans. R. Soc. B Biol. Sci.* (2018). <https://doi.org/10.1098/rstb.2017.0240>.
- [80] A. Titz, T. Cannon, F. Krüger, Uncovering ‘Community’: Challenging an elusive concept in development and disaster related work, *Societies*. 8 (2018) 71. <https://doi.org/10.3390/soc8030071>.
- [81] C. Stanke, V. Murray, R. Amlôt, J. Nurse, R. Williams, The effects of flooding on mental health: Outcomes and recommendations from a review of the literature, *PLOS Curr. Disasters*. 1 (2012) 1–18. <https://doi.org/10.1371/4f9f1fa9c3cae>.