

**Community resilience and wellbeing: An exploration of relationality and belonging after disasters**

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## **Abstract**

Community resilience is commonly held to be critical for coping with adversity and disturbance. Whilst community resilience can be a terrain of contestation, the enactment of social relations within communities has been shown to ameliorate the worst impacts of disaster events on the wellbeing of their members. Here, we propose that wellbeing in the aftermath of disasters is shaped by processes of relationality and belonging. This study uses data from longitudinal mixed methods research with flood affected communities in south west and eastern England directly affected by long duration and high impact floods. Analysis from in-depth interviews conducted over 18 months and from cross-sectional surveys of affected populations shows that active belonging and relational capital are related to self-reported wellbeing; that active belonging is consistently significant for wellbeing, whilst relational capital is only significantly correlated to wellbeing later in recovery periods; and that social identity processes are central in the link between community dynamics and wellbeing. The changing identity processes of community members include altered perceptions of community membership and the use of collective identities to frame personal experience. These results suggest that community resilience processes and their relationship to individual wellbeing are not fixed, but evolve through stress, trauma and renewal.

## **1 Introduction**

The idea of community resilience has been examined in markedly different ways across the geographical, psychological and social sciences, and applied to diverse areas of planning, disasters and social intervention. One strand of research situates community resilience as a key bulwark against imposed harm or risk, with its promotion as an aspirational social or policy goal attributed to these positive implications (Cutter et al., 2008; Norris et al., 2008; Magis, 2010). Yet critiques of resilience point out its alignment to neoliberal discourses, and its appeal as a mode of governing that facilitates retraction of the state and the shifting of responsibility on to citizens (MacKinnon and Derickson 2013; Grove 2013; Brown, 2014; Welsh 2014). Our analysis here builds on both these traditions by focussing on micro-level processes that are constitutive of the lived experience of community, notably in times of trauma and recovery, and that, crucially, appear to have particular consequences for people's expression of their wellbeing.

Positivist and constructivist approaches to resilience have distinctive empirical contributions. One set of studies has sought to understand the relationship between community resilience and dimensions of disaster response. Political ecology research, by contrast, seeks to reveal the ways that community resilience is integrally shaped by and linked to wider political processes and forms of regulation and self-regulation. In these contrasting lines of analysis, community resilience is either explicitly defined through reference to indirect proxies (e.g. the presence of resources, forms of capital and competencies) or alternatively understood as a set of practices and discourses for analysing the distribution of power and injustice.

Our specific interest, then, is in key unfolding processes through which collective and relational experiences are characterised within specific geographic communities and how these relate to individual-wellbeing. This use of resilience here reflects a progressive conceptualisation that position it as involving abilities to transform rather than retain the status quo (Berkes and Ross, 2013; Brown,

2016). Resilience is, therefore, not a set of latent capacities or competences, but rather an emergent property of community interactions and social relationships (Faulkner et al., 2018).

Communities of locality often share place related identities, these identities are continuously in development (Massey 1996) and the evolution of these identities has implications for a shared capacity to handle extreme events (Lidskog, 2018). Collective activities and interactions generate social memory, which in turn shapes a community's ability to deal with change. In their extensive 2015 study Wilson et al. (2017) identify how ongoing processes of migration and changing stakeholder networks influenced social memory in communities, which in turn shapes their resilience in the face of land degradation. Indeed, collective narratives can influence the recovery strategies in which individuals engage and collective community processes are important in understanding how individuals respond to disasters (Chamlee Wright and Storr 2011). Lidskog's (2018) study of a community responding to wildfire, for example, finds that the community identity that emerged in response to the event facilitated altruistic engagement and collective activities by members. Building on these insights we argue that how individuals perceive and engage with collective community processes is key to understanding the enactment of community resilience and, ultimately, key in understanding how these processes shape the wellbeing of individual members.

This study therefore explores the role of two key dimensions of community resilience – relationality and belonging - and how they contribute to wellbeing. These dimensions were identified initially in a grounded manner through long-term intensive interactions with individuals and communities recovering from flood disasters and examined further through more extensive survey research across a range of communities. The research design is focused on communities of locality, by which we mean communities defined by residents living in shared physical proximity, recognizing the diversity of community types (Gurney et al., 2017).

The study focuses on communities in Somerset, south west England, and Lincolnshire, East England. that experienced a long period of extensive flooding in the winter of 2013/2014. The research seeks to contribute to geographical and cross-disciplinary understandings of community resilience through proposing and examining how key collective processes are related to the wellbeing of community members. To do so, the study uses a longitudinal design to examine processes of response to environmental perturbations to allow for insights that recognise the nature of communities as changing or at least non-static (Norris et al., 2008; Berkes and Ross, 2013; Massey, 2005) and of relational well-being that put spatial and social dimensions of enacted life to the fore (White, 2017; Atkinson et al., 2019). Building on insights into dimensions of collective community processes, the study seeks to explain the relevance of relationality and belonging to wellbeing through exploration of community related identity processes. In particular, we show how these different dimensions relate to changing conceptions of collective identity that are altered through the experience of disasters.

## **2 Community resilience and wellbeing**

The contribution here is to identify how key processes of collective relations that represent the core of how communities cope and thrive in the face of disasters shape the wellbeing of residents.

Previous research has documented that disasters directly affect dimensions of wellbeing including economic security, disrupted futures and psychological wellbeing both during events and in the long aftermath (Tapsell and Tunstall, 2008; Carroll et al. 2009; Brown and Westaway, 2011; Walker-Springett et al., 2017; Tempest et al., 2017). Much of that work alludes to the importance of community for individual wellbeing without specifying the mechanisms by which collective action ameliorates the impacts. This study therefore examines the relationship between relationality and belonging as two key attributes that are constitutive of community resilience with outcomes for individual community members.

Despite the wide use of community resilience concepts, the extent to which the phenomenon is latent or something principally observable in action remains an open question. Much evidence on the resilience of communities emphasizes how communities act under a period of stress or trauma and show how perturbations make salient the role of communities. Such evidence appears in psychology and disasters research, ranging from human-made traumas such as terrorist attacks, through to natural disaster contexts (Almedom and Summerfield, 2004). Additionally, community resilience is often proposed as a key resource in responding to disasters, with the resilience of communities themselves argued to be positively affected by response to disturbance (Khanlou and Wray, 2014) and social cohesion created, especially in the absence of external interventions. Disasters, it is argued, can act to create new networks and act as an inoculation for individuals for future events (Eysenck, 1983; Tompkins and Adger, 2004). There are, however, limits to the ameliorating effects of community support due to social marginalization and inequality within communities. Hence, while there is evidence that community resilience mitigates loss and damage for affected populations (Gawith et al., 2016), in some instances disruptive events provide too much of a stressor and communities can be irrevocably divided.

A core element of this study is examining the relationship between elements of community resilience and the wellbeing of community members. Wellbeing has multiple dimensions that are constituted in material, subjective and relational aspects of life and livelihood (Robeyns 2005). Theories of relational wellbeing, and research on relative inequality show that social interactions are central to individual wellbeing outcomes, and further that sense of communion, safety, and social norms are principal underpinning mechanisms (Curtis, 2010; Poortinga 2012; White, 2017; Atkinson et al., 2019). Natural disasters have been shown to affect all elements of individual and relational wellbeing including direct loss of material assets, risks to health and mortality, as well as relational outcomes (Pelling, 2003; Neumayer and Plumper, 2007). The disruption of social networks and relationships, for example, means that displacement after a disaster event can exacerbate existing

hardships (Thornley et al., 2015), and can lead to social marginalization and negative health outcomes for vulnerable members of affected populations (Ahern et al., 2005). Indeed, the impact of floods on psychological morbidity (Jermacane et al., 2018) highlights the need to investigate the range of material and social processes that shape wellbeing after flood events. Masson's 2019 study of a community's response to a flood found that collective support in the shape of community resilience buffered against the negative effects of a disaster on mental health. If community resilience ameliorates significant negative consequences of disasters on wellbeing, it therefore has positive public good value, and interventions to promote community resilience can potentially be effective in disaster planning.

Critical research on the operationalisation of community resilience demonstrates that the concept can be harnessed to problematize community relations and as a mechanism to lay responsibility at the doorstep of individual citizens (MacKinnon and Derickson, 2013; Joseph, 2013). For example, Grove's (2013) analysis of disaster management in Jamaica demonstrates that institutional mandates to create cultures of safety resulted in a normative power to control the quality of collective life in communities – seemingly banal activities can then be turned into sites of regulation. Understood in this way, community resilience can be seen as being harnessed to encourage 'active citizenship' (Joseph 2013: 42), asking individuals to take responsibility rather than relying on the actions and resources of state. Grove (2013) argues that attempts to build disaster resilient communities, which focus on organising a community's constitutive elements, risks transforming how community members interact, perhaps causing neighbours to view each other more instrumentally.

The recognition of the contested nature of resilience suggests that community relationships can be understood in terms of how they sit within wider networks of connection and power. And more specifically to the role of government in shaping or mobilising community resilience as key to

understanding how communities are affected by disaster events. In this study, we take account of how community resilience is utilised and of the wider governance context for the relationships that form our focus. However, we argue that the responses of communities are often at odds with the aims and wishes of governance institutions, as well as being hindered rather than driven by institutional responses and requirements. This study therefore suggests it is the response and enactments of community through relationality and belonging that are critical for the wellbeing of individual members.

Relationality, as we use the term here is a set of processes such as trust and tendencies for reciprocal action toward other community members. It differs from standard conceptualizations of, for example, social capital in being focused on the quality of relationships, rather than simply their existence. Social capital measures the scale and extent of bonding or bridging networks. Relational capital, in contrast to social capital, emphasizes the calibre of relations by which individuals within communities can act together. Much evidence shows that relational support and social infrastructure are key facets of resilience and include psycho-emotional processes such as place attachment, identity, and cohesion in times of stress (Cox and Perry, 2011; Calo-Blanco et al., 2017). The disruption of social anchors during disasters and the common tasks faced by those affected can nurture feelings of altruism in providing opportunities for generosity and meaningful work (Solnit 2009; Lidskog 2018).

Individuals make sense of disasters and disruption through these elements of relationality. It has been demonstrated that collective meaning making between members of a community is important in coming to terms with loss. Although the relational aspects of community resilience can create vulnerabilities in responses to shared disasters where differences in exposure causes social fractures (Thornley et al., 2015), the psychological benefits of group social identity processes in dealing with adversity have been highlighted in applied psychology and studies of disaster recovery (Walsh 2007;



Chamlee-Wright and Storr, 2011; McEwen et al., 2017). The significance of social interactions (or lack of) in shaping wellbeing following traumatic events is reflected in links to poor psychological outcomes – comparable in significance to material losses and health concerns (Tempest et al., 2017).

Belonging, as we use the term here, involves both perceiving membership and inclusion in the community in question and participation in social situations – an active expression of belonging. Whilst relational capital is an internal reflection on the quality of relationships within a community, active belonging is an outward orientation reflecting an engaged belonging in the community. Active involvement in communities facilitates cooperative efforts, such as shaping social institutions (Calo-Blanco et al., 2017), provision of informal insurance (Aldrich, 2017), as well as having a role in the construction of meanings of place and shared concepts of wellbeing (Albanesi et al., 2007; Curtis 2010). Indeed, increased community participation can lead to increased self perceived wellbeing (Ding et al., 2015). Place attachment, developed through relationships with local places and people, is frequently mobilized to motivate efforts to actively revitalize a community by invested members (Norris et al., 2008). Relationships are key in the success of communities and active co-operative efforts underpin successful planning and community development (Manzo and Perkins, 2006).

### **3 Design and methods**

The study is based on places directly affected by flooding, a serious and long-lived disruption to localities, regions and communities, with impacts on economic resources and infrastructure, on human ecology, and on health and wellbeing. Our focus is on communities living through floods in the winter of 2013/14 in England. This was a nationally significant event, causing £1.3 billion of economic damage with a quarter of this damage being the direct impact on flooded households (Thorne, 2014) along with significant psychological morbidity and anxiety of future events by those experiencing them (Tempest et al., 2017). The role of social processes in mediating the impact of the floods has been significant, with previous research from this project finding that place attachment

and the quality of relationships have been significant in shaping the psychological impact of the disaster (Walker-Springett et al., 2017). In particular Walker-Springett et al. emphasize the non-linearity of wellbeing impacts for residents in Somerset following the floods of 2013/14, indicating the importance that connections to place and community had in shaping the experience and wellbeing of residents.

This study focuses on two counties in England – Somerset in the South West, and Lincolnshire in the East of the country – that were significantly affected by high water levels and extensive flooding. In Somerset, the flooding affected the Somerset Levels and Moors, a low-lying flat area of approximate 650km<sup>2</sup> that is largely rural, with farms, a number of small towns and villages directly impacted. Somerset has a population of just over 0.5 million people and 48 percent of the population is rural (in settlements of less than 10,000 people), with an older population and fewer people in their 20s and 30s relative to the national average. It is identified as one of the 10 most rural counties in the UK. The population is 96 percent white British, net inward migration from the rest of the UK is slowly growing with approximately 3000 people moving to Somerset each year and in-migration from outside the UK is relatively stable (Somerset Health and Wellbeing Board 2014). There was a flooded area of 65km<sup>2</sup> with 280 households directly affected. Boston in Lincolnshire is a town in a low-lying area, and in contrast to Somerset 65% of the population describe themselves as white British, with 77 languages (including English) spoken in the area. The town was flooded in the 2013/14 winter following a tidal surge in December 2013 that caused the river Haven to overtop flood defences. Here, emergency services had prepared to possibly evacuate 18,000 residents following severe weather warnings and in total 690 households were inundated.

Key to this study is the mixed methodology that allowed us to identify key dimensions of community resilience and the significance of their relationship to wellbeing. Importantly, the qualitative data allowed an in-depth analysis of social processes linking perceptions of collective community

processes with individual wellbeing. The data generated included survey data in two affected counties in England (Somerset and Lincolnshire n=1000) and in-depth interviews carried out over time with individuals in the Somerset region (first round n=35, second round n=25). We firstly considered the quantitative data collected in the summer of 2015 with 1000 flood affected residents in Somerset and Lincolnshire, with this data we tested the relationship between active belonging, relational capital and self-perceived well-being. Having identified a significant relationship the qualitative, longitudinal interviews with flood affected residents in Somerset allowed us to identify perceptions of a range of actors and actions (government, community, Environment Agency) and their relationship to wellbeing over time.

Previous research has demonstrated that communities experience significant changes in the post-disturbance phase after an event, these changes are not linear and can be context dependent (Medd et al., 2015). In order to fully research the social experience of flood affected households the qualitative data collection was carried out at two time points: between six and eight months after the flood (in September-October 2014) and again at twelve to 24 months after the event (April-May 2015). Such intensive longitudinal methods offer opportunities to unpack participant perspectives and non-linear trajectories of social processes over time (Saldana, 2003 and Walker-Springett et al., 2017). This allowed us to analyse changes in the community over time and to triangulate findings with the survey results. The initial stage of interviews was carried out with 35 residents, and from this group of residents 25 were interviewed a second time six months later.

The surveys were conducted via telephone with 1000 residents (500 in Boston and 500 in Somerset) in July 2015. Quotas were implemented to ensure a broadly representative sample in terms of age and gender and each survey took approximately 20 minutes to complete. The survey remained active until the quotas in each area had been reached. In the quantitative phase of the research we were interested in the different elements of community resilience, as there were five general

community items in the survey we conducted a Principal Component Analysis (PCA), with orthogonal rotation, to reduce the five items to a smaller set of variables. The Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were used to ensure that the correlation and variance between the community resilience items were appropriate for a PCA. The KMO measure verified (KMO = 0.80) and all KMO values for individual items were > 0.75, above the acceptable limit of 0.5 (Field, 2009). Bartlett's test of sphericity  $\chi^2 (10) = 1773.192$ ,  $p < 0.001$ , indicating that correlations between items were sufficiently large for a PCA. An initial analysis was run to obtain eigenvalues for each component, and two components had eigenvalues above Jolliffe's criterion of 0.7 and in combination explained 75.3 percent of the variance. Given the large sample size and the scree plot, which showed an inflection that would justify retaining two components, two components were retained in the final analysis. Table 1 shows the factor loadings after rotation. The items that cluster on the same component suggest that component 1 represents relational capital and component two active belonging. The relational capital and active belonging sub-scales both had high reliabilities, Cronbach's  $\alpha = 0.74$  and  $0.82$  respectively.

The questions in the survey on wellbeing asked the participant to recall and consider their wellbeing at four time points – before the flood, during the flood, twelve months after and at the time of the survey in the present day (18 months after the floods). These questions are used to gauge perceived changes over time and to consider reported wellbeing alongside qualitative data from the two rounds of interviews. Respondents were asked if they had been affected by the floods, and only those who indicated that they were, were subsequently asked about their wellbeing at three other timepoints ( $n=622$ ). Flood affected includes being directly affected by the event, for example having floodwaters in the home, through to difficulties getting to work and being stressed or anxious because of the floods.

#### **4 Results: Dynamic relationship between active belonging, relational capital and wellbeing following a disruptive event**

This section presents three key findings. First, the analysis shows that active belonging and relational capital are related to wellbeing when communities are disrupted. Second, active belonging is consistently significant for wellbeing, whilst relational capital is only significantly correlated to wellbeing for timepoints twelve months and 18 months post-flood. Finally, social identity processes are central in the link between community dynamics and wellbeing in times of crisis.

##### ***4.1 Dimensions of community resilience and their link to wellbeing***

Analysing surveys with flood affected residents, we used factor analysis to verify the factor structure within responses to the community resilience survey items (summarized in Table 1) confirming two dimensions of community resilience. The first factor is relational capital and is composed of perceptions of respect and trust and reflects how community members treat and relate to each other. The second factor, active belonging, includes perceptions of pulling together and belonging, indicating an individual's active orientation towards their community.

##### **Insert table 1 here**

How do these elements relate to wellbeing? The data measure active belonging and relational capital when collected along with a measure of wellbeing recalled for four time periods: before, during, twelve months and 18 months post flood.

Results in Table 2 show that active belonging is consistently significantly correlated with wellbeing for all the four points. Table 2 also shows that relational capital is significantly correlated with wellbeing for the 12 month and 18 months post flood indicators: they are not significantly correlated for the wellbeing scores during and immediately post-flood. This is suggestive of a qualitative shift in

how community resilience is experienced following a crisis event. Hence we analyse whether this is a real and significant phenomenon through the sense that respondents made of community dimensions, revealed in the qualitative data.

**Insert table 2 here**

#### ***4.2 How relational capital and active belonging change following a disruptive event***

To further explore the relationship between wellbeing and community, using NVivo we thematically coded qualitative data on individual perceptions of collective social processes relating to relational capital and active belonging. The themes that developed suggest a number of ways in which individual and collective identity shift over time following a disaster and during recovery.

##### *Active Belonging: Expanding and deepening sense of community*

The community members all commonly describe how previously peripheral individuals and newcomers to the area became better integrated within the community as a consequence of the flood events. The disruptive backdrop of flood recovery brought people into contact with each other in new and unusual ways, resulting in exchanges with previously unfamiliar community members, as described by Interviewee 2 and their meeting local residents whilst in 'waders'.

*Even within a village, the limits are quite tight of who you talk to if you like. Even in this village, at the far end, this sounds very stupid, the far end of people I had never stopped to talk to, [...] The far end of the village there are a couple of people who perhaps were shy, and didn't wish to integrate, but having met them in waders carrying their belongings, you obviously stop to talk, you got to know their Christian names.* Interviewee 2, Male, flooded resident

A sense of a shared crisis is often referenced in the interviews. The knowledge that neighbours are going through the same experience has shifted social norms around the ways that people communicate with each other. The flood and flood experiences are safe and relatable topics around which people can start conversations in everyday social situations (e.g. standing in line at a shop) where previously they would not.

*I think the community are, from the people I've met, I think we feel a bit closer now than we did before because everyone talks about the one topic, so you've got something to say to everybody and you meet and talk and chat.* Interviewee 19, female, member of flooded community.

In this way active belonging is deepened as circumstances provide new opportunities for interactions and discussion and co-operation. Reflecting research on communities after disasters, the residents interviewed discuss increases in instances of altruism and interactions with other community members, relationships are consolidated after the flood through collective celebrations and dinners:

*So although one lady will say to me, "Oh, if it wasn't for the flood, this is the happiest I've ever been, I've never felt so at home in the village as I do now, if we hadn't flooded, it would be perfect", but the reason they're included now is because of what's happened after the flood, in the way of social events and people talking to each other over the fence, and having this sort of shared trauma and it has brought people together, there's no doubt about it.* Interviewee 7, female, flooded resident.

*Relational capital: The importance of collective identity in negotiating personal experience:*

Alongside the development of new relationships in the period following flooding, the quality and nature of existing relationships also changed. The collective identity of being a flooded householder is often referred to in accounts of those who had been flooded in their homes. A shift in relational capital reflected in an increased identification with community members shapes how householders describe their experiences. Often, in describing the negative impacts of the floods the interviewees use pronouns such as 'we' or 'us', emphasizing the shared nature of their experience.

*I think the other thing, **which is not just us saying this**, everybody has commented the long-term overwhelming tiredness as a consequence. You are running on adrenaline for a very, very long period of time. [emphasis added] Interviewee 22, male, flooded resident.*

*But yes, I think people are putting the flooding behind them quite quickly, **it's not just us**, I think everyone, that was then, now we've got to look forward. [emphasis added]*  
Interviewee 27, Male, flooded resident.

This shared identity, mobilised in describing the negative impacts on wellbeing seems to be used partly to validate emotional responses such as grief, and also to normalize individual troubles as part of a shared collective.

*I think, quite a few people have had issues. Very few people have had total [...] there's a few people who've had total plain sailing. Interviewee 22, male, flooded resident.*

The development of new identities along particular lines within community – for example those who were directly flooded, or those who are uninsured – has sensitized respondents to their relationships to people within and outside of these groups. This is not simply that there are now a



number of individuals with a distinct identity but that new identities have emerged collectively in response to the disaster and in response to how the event has been handled. These group identities, that are actively cultivated in accounts of the flood response, provide a way to frame personal experience and lessen the isolation of individual experience as one that is collectively shared. The response to the flood changes the nature of relational capital as new (and maybe temporary) identities are made salient and actively cultivated by residents.

#### ***4.3 How shifts in relational capital can undermine wellbeing: the development of new divisions within and between communities***

Whilst many respondents reference the positive impacts of a closer community, public and private response to the flooding event also generated divisions within the villages. Changes in how people identified with each other were not homogenous, and the different degrees of flood impact resulted in the development of smaller subgroups with their own distinct challenges and identity. As a result, sometimes established relationships took on different qualities based on the experience of differentiated levels of impact.

*I know there are friendships that used to be really strong, where you've got people who have been either side of one of the many divides, either insured or not insured, flooded or not flooded, and something has driven a wedge between them and they're not actually the best of friends anymore because they can't cope with the change in circumstances that they've had to suffer.* Interviewee 7, female, flooded resident.

The negotiation of the identity of being a flood affected county, community and householder is touched on by many of the interviewee's description of flood recovery. For example, Interviewee 5 in the quote below describes the flood vulnerability of their own community in comparison to

another (more vulnerable) village containing large numbers of bungalows. The perceived differences within and between communities are often revealed in the pronouns used to outline the variations of experience between groups. Whilst there is a solidarity in experience, differences such as housing types (e.g. bungalows and two storey house) or types of evacuation notice creates divisions within flood affected groups, and sub identities emerged.

*They had a completely different problem from us in that here, not many people were flooded and those who were, stayed at home because largely they're two storey houses and people were living upstairs and keeping their waders, a pretty awful existence but at least they were in their own home. But [other town] of course, quite a high percentage of bungalows and as you know, they were given three hours to get out and a lot of them didn't know where anybody had gone. So very difficult, that, very.* Interviewee 5, male, member of flooded community.

Here, action by the public agencies in the form of evacuation notices, has acted to create new lines of differentiation between community members. Indeed, awareness of differences in flood exposure and flood management response were further entrenched in the recovery period as groups within the community applied for flood protection. For interviewee 7 relational capital is also informed by perceived fairness of institutional and community response.

*But if I lived up there, my perspective would be slightly different because they weren't flooded, the houses up there didn't – one house flooded but they had a £1m road put in because they had to drive all the way round! Dreadful waste of money but that's what that side of the community wanted and they lobbied hard for it and they got it and as long as it wasn't at the cost of actually protecting people from flooding in this area, which was my*

*concern, then who am I to say they shouldn't have it?* Interviewee 27, male, flooded resident.

Action by government was perceived to be uneven, and by improving protection in some areas and not others, action by public authorities resulted in the development of distinct groups. The have and have nots in response to evacuation protocols, warning, and new flood defences caused people to either align or critique other groups and communities. Throughout the interviews in-group relationships are discussed as sources of comfort as well as tension. These new or changed identities are actively maintained in conversations that describe shared and diverging experience. In these ways, the experience of flooding and recovery has reformed relational capital, and sensitised people to the quality of their relationships with other community members.

#### ***4.4. The personal negotiation of collective and individual interests: managing active belonging***

Whilst the interviewees describe a change in community cohesion and an increase in interactions between residents, they also highlight that there was an ebb and a flow to these interactions. An increased sense of solidarity is coupled with joint activities and events. People cultivate these relationships with discussions about insurance claims, impacts on jobs, advice on how to engage with agencies. The social orientation of flooded and non-flooded members largely becomes more connected and collective. However, in the months after, especially once people are back in their homes (up to a year later) people have to turn their concentrations inwards as they re-establish their own homes. There is a recognition that there are some issues for which it is more effective to engage in collectively but others that require a personal focus.

*I think everyone was unified in that and I also think the agendas, a really important thing is that you can have common agendas, that was a common agenda but there are also site*

*specific agendas, so people were also fighting their skirmishes with the authorities on certain issues that only affected their property and they were kind of given mental and emotional from other people in that, but that was their battle and there were things we could coalesce on, which we worked at together or they worked at together.* Interviewee 21, male, member of flooded community.

This re-orientation in investment in relationships does not undermine new or re-formed relationships with community members. Relational capital is now different to the post-flood phase when residents very much became a collective to deal with challenges, but it is also different to the pre-flood phase as relationships now hold different meanings.

*People get back on their feet which is brilliant and so the relationship has to change, as people start to fight their own corner and get the energy back and so that's a very situational thing, it ebbs and flows, but I think the underlying respect and friendship stay, it's just the relationship differs.* Interviewee 21, male, member of flooded community.

*We know everybody better and we've seen people cry and jump up and down and we've seen people in all ways, really seen people at their best and their worst. We don't see each other any more than we used to before the floods, but we know that there is a bond, that it's been beneficial actually* Interviewee 18, male, flooded resident.

## **5 Discussion**

The results demonstrate in this case the importance of active belonging and relational capital in shaping respondents' sense of wellbeing, even as that wellbeing changes through the recovery phase following the flood event. There is a significant relationship between active belonging, relational capital and wellbeing. Of particular interest is the shift in significance of the relationship

between relational capital and wellbeing in the 18 months after the flood event that seriously disrupted the communities. The in-depth interviews reveal the changes in identity as key processes in the manifestation of community resilience and indicate how perception of collective processes were linked to experience of wellbeing.

What are these identity processes linking community resilience to individual wellbeing as experienced during crisis periods? Following a disaster, community resilience is fundamentally shaped by relational capital and active belonging. Active belonging was, in effect, being cultivated with the activity that occurs during the flood – some relatively mundane activities such as postal delivery take on a new dimension (it is delivered to the first flooded house and other flooded residents collect from there) – and novel experiences (of collective travel by tractor, for example) that occur in the immediate aftermath. These changes in active belonging occur alongside, and promote, a shift in relational capital. New connections were made, and those already established take on another layer of meaning. Together these processes lead to changes in how residents actually identify with their community, as discussed for example by Lidskog (2018): it is the power of narratives to shape community identity after a disaster. The context in Somerset shows how physical interactions underpin the cultivation of identity which in turn shapes how people engage in the collective response to the flood recovery.

The accounts of recovery over the 18 months after the flood event in Somerset reveal changing community processes and the evolution of individual and collective identity processes. They reflect an emergent quality of community resilience, echoing findings by Faulkner et al. (2018) and others. Specifically, this study provides evidence as to precisely how community resilience emerges following a disaster, in the interactions and activities that people share and draw particular attention to the importance of social identity processes in experience with community in the aftermath of floods.

What are the limits of how community can overcome traumatic events? There are two elements suggested by this study. First, Welsh (2014) and others show that focussing on the ability of a community to recover is often inappropriate when the the distribution of power and underpinning capitalist relations put communities in the firing line in the first place. In this study, relations between community members evolved over time, and individuals often emphasised solidarity and shared experience over social and spatial inequalities, as a means to generate collective care and responsibility. These responses reaffirm geographical insights into how the generation of public space and new social relations are key processes that affect wellbeing outcomes (Curtis, 2010; Atkinson et al., 2019).

A second limit of community relates to physical space and how it affects relationality and belonging. In essence, the buffering effects of social relationships may not be possible if communities are overwhelmed by the scale of disasters or are scattered and dispersed. Where whole communities are devastated by fire, by flood or by earthquake, the process of recovery is of a different nature. Even in these circumstances, however, the role of collective response and community solidarity have been shown to be important in reducing trauma (Aldrich and Mayer, 2015). As discussed by respondents in this study, managing emotional labour of recovery after a disaster requires navigating personal and collective concerns. Nevertheless, this study shows that when communities are faced with trauma and disturbance, the ability of groups and communities to effectively work together is key for cooperative and collaborative efforts in managing far-reaching social and environmental challenges (Curtis, 2010).

The relational elements of social identity connect collective community resilience processes to individual experience and wellness. The results echo calls for intervention to focus on dimensions of community in ameliorating the impact of floods, social networks provide a key well of support that

needs to be bolstered and facilitated where possible. Understanding the dimensions of belonging to particular groups is important in making sure that information campaigns are sensitive to labels and community politics after events.

## **6 Conclusions**

The central concern of this paper is the relationship between core aspects of community resilience and wellbeing. We have shown how individual expressions of belonging and forms of connection with their wider community shapes their sense of their own wellbeing following a disaster. Key to this relationships is the evolution of collective identity, that is cultivated during, and in response, to interactions between community members.

The findings here provide evidence that networks and sense of belonging are important for recovery from disasters. The identification of relational capital and active belonging brings a focus to specific collective and spatial processes involved in community resilience. In community-based disaster risk management the focus is often on how community members relate to the larger surrounding social and political landscape (Grove, 2013) and our finding makes explicit some of the mechanisms that play key roles in these dimensions following a traumatic disruption. Co-operation and collaboration are increasingly proposed as key to sustainable futures, especially in the face of large-scale global changes (Bodin, 2017). Relational processes in terms of perceptions of fairness are important in burden sharing between the public and government in response to hazards.

This study emphasizes how significant events may precipitate different social networks and suggest that newly-perceptions of solidarity in peer-to-peer relationships appear to create a greater capacity to handle collective challenges. As such, community resilience is a key element in creating conditions for more inclusive forms of managing sustainability issues. The results suggest that the potential of

social connectedness and relationships needs to be incorporated both theoretically and in policy circles in how responses to disasters are anticipated and managed.



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## Tables

Relevant survey items	Component				
	Relational capital	Active belonging	Agree (%)	Neither Agree nor Disagree (%)	Disagree (%)
To what extent do you agree or disagree that in your local community, people from different backgrounds get on well together?	<b>.884</b>	.206	62.8	10.1	27.1
To what extent do you agree or disagree that your local community is a place where residents respect differences between each other?	<b>.875</b>	.205	66.8	10.7	22.5
To what extent do you agree or disagree that the majority of people in your local community can be trusted?	<b>.605</b>	.552	73.9	11.3	14.8
To what extent do you agree or disagree that people in your local community pull together to improve the community?	.097	<b>.890</b>	78.1	10.9	10.9
To what extent do you agree or disagree that you feel that you belong strongly to your local community?	.412	<b>.701</b>	74.3	9.4	16.3
Cronbach's $\alpha$	.74	.82			

**Table 1:** Principal Component Analysis of community resilience items showing constituent elements of relational capital (Component 1) and active belonging (Component 2)



Wellbeing Scores (0 = low, 10 = high)				
	18months post flood	12 months post flood	During flood	Prior to flood event
Relational Capital	r(529) = -.180***	r(469) = -.112*	r(471) = -.059	r(471) = -.076
Active belonging	r(517) = -.145***	r(457) = -.129**	r(459) = -.092*	r(459) = -.105*

**Table 2:** Correlation of relational capital and active belonging with self reported wellbeing at four time points for flood affected communities in Somerset and Lincolnshire (before the flood, during, 12 months post flood and 18 months post flood)