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Publication date:
2017

Document Version
Peer reviewed version

[Link to publication in ResearchOnline](#)

Citation for published version (Harvard):

Henderson, F & Whittam, G 2017, 'Evolutionary or equilibrist? Small businesses resilience to flooding in Scotland', *Studia Miejskie*, vol. 24, pp. 23-41.

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Evolutionary or Equilibrist?

Small businesses resilience to flooding in Scotland

Fiona Henderson¹ & Geoff Whittam

Abstract

Flooding is the most significant current climate change-related threat to the UK, yet its impact upon small businesses is largely unexplored. This paper investigates the resilience of a small business community in Scotland that has evolved over decades of trading in a flood-prone area. The development of their adaptive strategies is explored in the context of White and O'Hare's (2014) resilience paradox, which argues that a lack of clarity in the definition of resilience has facilitated vagueness in policy which, whilst maintaining an adaptive optimistic rhetoric, has favoured equilibrist protectionism over evolutionary and transformative approaches. This tension between the equilibristic approach inherent within the Civil Contingencies Act (2004) and the adaptive responses which the Climate Change Adaption Act (2009) endeavours to promote is considered in light of the experience of the participating small business owners, who perceive their resilience is threatened by a flood protection measure planned by the local authority. This flood protection measure has been developed despite repeated objections by the local community, and this study presents business owners' feelings that they are not being consulted adequately or their objections heard. The need to engage communities and work together to develop solutions to climate change threats to facilitate community resilience is discussed.

Keywords: Small business; Flooding; Resilience; Policy; Evolution; Equilibrist

This is a "post-peer review" version of an article accepted for publication in *Studia Miejskie*.

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Introduction

The flooding in the United Kingdom (UK) of December 2015 was not only record-breaking (Met Office, 2016), it brought flood protection measures into sharp focus in the national media (Lean, 2016; Biggs, 2016; BBC News, 2015a). Debates about protection versus prevention are important as the UK increasingly faces unprecedented flooding episodes. However the UK's policies and funding for effective preparation for climate change are inadequate as evidenced by the reactive announcement of millions of pounds of investment in flood protection in response to post-flooding public criticism. (Scottish Government, 2016a; GOV.UK, 2016a). UK governments also announced they are providing immediate relief grants to those households and businesses impacted by the floods of December 2015 (Scottish Government, 2016b; GOV.UK 2015), many of whom are underinsured (Burn-Callander, 2015). Business losses from the flooding in a single month, including 'grey areas' and the losses suffered by rural communities and the low income uninsured, were projected to cost £2.55bn to £3.3bn (KPMG, 2015). Many small businesses in the UK, including the sample in this study, cannot get flood insurance due to their vulnerability and new flood insurance policy in the UK called Flood Re, will not protect small businesses despite a long campaign to make it do so (Flood Re, 2016a, ABI, 2014).

As climate change will make intense rainfall events more likely in the UK (Vidal, 2015), the risk of increasing rainfall-related flooding is now widely accepted amongst researchers and policy-makers (Wedawatta & Ingirige, 2012; Defra, 2012; Houston et al 2011; Christensen and Christensen, 2003). Despite long-term acceptance that this risk of flooding cannot be mitigated (Fleming 2002), and while the Department for the Environment Food and Rural Affairs (Defra) have stated flooding is the most significant current climate change-related threat to the UK (Defra, 2012), there is still not a political will to increase funding to prevent and protect those at risk. Instead, in the UK flood research and development funding has been cut by over 60% between 2008 and 2016 (Carrington, 2016).

Whilst a great deal of attention post-flooding is placed on households (e.g. Werrity et al, 2007) small businesses have been largely ignored. However, small businesses often co-exist within small rural neighbourhoods as a critical part of the local infrastructure (Jack and Anderson, 2002), and their survival and recovery can be vitally important not only to the local area but also to the wider national economy (Sarker & Wingreen, 2013). Yet little academic research has been conducted exploring the impact of flooding on small business, particularly in the longer term (Ingirige & Russell, 2015; Wedawatta et al, 2014). Their place within the local context is complex, as those who own and work within these businesses are associated with the services or products the business supplies. These individuals' multiple identities (Burton & Wilson, 2006) – where they are both residents of a community and business owners/employees, as well as members of other community groups - highlights small businesses' influence on the local context in which they are embedded (McKeever et al., 2015). Unsurprisingly given this complex role, it has been found small rural businesses often influence community development and the resilience of the community itself (Steiner and Atterton, 2015). This brings added pressure to the business owner however, as their place in local social networks and their often vital service, product, or employment means they are under increased pressure not to be seen to fail (Moyes et al., 2015; Bosworth, 2012). A threat like flooding to the trading activities of a small rural local business can therefore be particularly significant on multiple

levels, including local economic sustainability, local development, local social networks, and on an individual level to the resilience of those who own, or work for or are clients of the business.

Community resilience exists within an institutional milieu of responders before, during and after times of disturbance such as flooding, and consequently resilience can be impacted upon positively or negatively by a range of organisations, including local government (Eachus, 2014). Small businesses are particularly aware of and vulnerable to their context as discussed above, and impacts upon them can influence wider community resilience if relationships between businesses and local authorities deteriorate (Werrity et al, 2007; Gordon, 2004; Eachus, 2014). Mechanisms demonstrating this include perceptions of inequality, perceived lack of support, and stigmatising of others within the same community (Bush et al, 2001; Werrity et al, 2007; Gordon, 2004).

Where a community is under persistent stress, such as through repeated episodes of flooding as in this study, it has been argued that institutions like local authorities should provide leadership to mitigate the effects of disturbance and maintain community resilience (Tobin, 1999). Further, negative consequences amongst communities have been found to be magnified where faith in public sector leadership has been lost (Tobin et al, 2011). Similarly, a reduction in co-operation between a community and a local authority has been directly linked to the loss of a community's confidence and trust in that institution (Howgate & Kenyon, 2009). Where local policy makers explicitly support small businesses and empower local communities through transparent inclusion in the development process of local flood protection measures, the results strengthen those communities (Ingirige & Wedawatta, 2014).

This paper begins by considering what community resilience means amongst small business owners' trading in Dumfries, a rural market town in Dumfries and Galloway, a region with its own local authority in South West Scotland. These business owners are exposed to repeated low-level flooding events annually and live constantly with that risk. It emerged during interviews with this sample that small business owners were fighting the local authority's attempt to introduce a flood protection scheme that removed parking and the river view from their immediate trading area. This paper explores this tension through the lens of White and O'Hare's (2014) conceptualisation of resilience as *equilibrant* or *evolutionary*, examining current policies in Scotland at national and local level. The paper then considers evidence from public consultation research before concluding with suggestions about the management of flood protection and prevention measures, including the use of public consultation and associated policy implementation in rural areas.

Literature Review

The *resilient community* has been championed by governments and institutions world-wide (e.g. Cabinet Office, 2007; World Bank, 2008; Department of Homeland Security, 2012). However, this has led to a debate within the literature about the political agendas behind community resilience, particularly the influence of neoliberalism (MacMahon et al, 2015; White and O'Hare, 2014; MacKinnon and Derickson, 2013; Reid, 2012). Yet despite this academic interest, little formal evidence of effectiveness of policies or interventions to build resilience against flooding exists (Twigger-Ross et al, 2014). However, it is widely recognised that for community resilience to be built effectively it is important that a range of local stakeholders are engaged (Begg et al, 2015), and amongst key stakeholders in such community resilience are small businesses (Steiner and Atterton, 2015). Despite this, literature examining small businesses' vulnerability to climate change crises,

their resilience and their ability to recover after climate-related disaster is rare (Battisti & Deakins, 2015; Herbane, 2013; 2015; Wedawatta et al, 2014).

Community resilience to climate change has been based upon Holling's (1973) seminal work, and defined as being evidenced by three possible reactions to a disruption depending on its severity and impact (Twigger-Ross et al, 2011), specifically the ability of the community to:

- Hold firm and return to their current equilibrium after a disruption;
- Ability to adapt to change and mitigate its effects;
- Transform to a new normal.

Linnenluecke (2015) notes in her systematic review that differing conceptions of resilience are apparent across numerous studies, leading to increasingly diffused definitions and theories. This lack of clear definition could hinder the development of substantive interventions as 'resilience risks becoming a polymorphous and politicised term that devolves into meaninglessness' (p29: Flood & Schechtman, 2014), whilst elsewhere resilience has been described as more of an 'aspirational' term (White & O'Hare, 2014). For the purposes of this study, resilience is defined as "the persistence of systems and their ability to absorb change and disturbance" (Holling, 1973 p.14). This absorption might be evidenced through evolving to adapt to a new state, but might also be a return to equilibrium, or indeed there may be demonstrations of both processes in a single community response to disturbance.

White and O'Hare (2014) proposed that understanding whether the use of the term resilience was related to processes which were *evolutionary* or *equilibrist* in nature is central to understanding policy and governance. *Evolutionary* resilience is defined as transformation and adaption in response to an event. Equilibristic approaches attempt to protect the status quo, a process described by Holling (1973) as 'bouncing-back' to normal i.e. the pre-disturbed state. This latter approach, the return to what was or has been, is attractive to policymakers because it tends to be short-term and more immediately achievable (White & O'Hare, 2014). Reinstating the equilibrium is perhaps best demonstrated in engineering solutions such as flood protection (Flood & Schechtmann, 2014), which attempts to maintain and preserve a physical place in its current state. However, protectionism is fundamentally flawed in its assumption that flooding can be controlled and entirely prevented (White & O'Hare, 2014; Johnson et al, 2005). This political commitment to equilibrist policy, routed in the protectionist philosophy of UK governments over generations, has been described as 'deterministically counterproductive, resisting adaptive transformation' (White and O'Hare, p. 13 2014). In response to the increasing climate change threat, many governments including in the UK now admit that they cannot promise their society security from all threats (Aradau, 2014; Johnson et al, 2005). This shift to a focus on uncertainty politicizes preparedness and the resilient community (Aradau, 2014). It also creates a sense of personal threat and places much greater responsibility on the individual rather than the state, which has been described as a mechanism allowing neoliberalist governance and its drive to reduce the size and involvement of the state to flourish (Pugh, 2014). In turn, this has implications for how and why community resilience is built, as climate change itself becomes increasingly categorised as an international security problem yet political rhetoric now maintains responsibility for climate change consequences resides with the individual (Barnett & Adger, 2007; Chandler, 2012)

The shift of responsibility on to the individual has simultaneously been matched with a shift in management of flood risk to local level governance (Begg et al, 2015), though without a

corresponding transfer of budget or a proper understanding of existing community capabilities (Preston et al, 2014). Individual or community resilience approaches emphasising adaption and proactive localism are therefore undermined within both this rhetoric and political process, as they require a level of capacity and commitment, financial or otherwise, which can exclude many (White and O'Hare, 2014). This is the resilience paradox, summarised by White and O'Hare as what resilience promises 'to alleviate in political rhetoric it propagates in practice – simultaneously managing the impacts of risks and failing to grapple with those structures that embed it' (White and O'Hare, 2014 p.14). This disconnect between social and environmental policy and its impact on local resilience has been recognised by researchers for almost a decade in the UK, yet policy effectiveness is still unmonitored and the paradox continues to be maintained (Walker et al, 2006; Preston et al, 2014).

In Scotland, there are several country-specific policies which legislate local authorities' responsibilities to act on community and business resilience, and those particularly relevant to this study are listed in Table 1. At national and local authority level, the policy rhetoric suggests evolutionary responses will be supported in some aspects, but then this appears to be undermined by an equilibrium approach in others. For example, the Climate Change Adaption Act (2009) (CCAA) Objective S2 and the selected local authority Single Outcome Agreement (SOA) Ambitions promote *building* actions, be it awareness, resilience or capacity, and thus are evolutionary. However, simultaneously the Civil Contingencies Act (2004) (CCA) and the local authority's Sandbag Policy contain repeated use of the equilibrist terms *maintain* and *protect* in their duties (White and O'Hare, 2014). This approach is equilibrist and is required of Category 1 responders, who include the police and fire services and the local authority, and who are legally responsible for the implementation of the CCA.

Table 1 – Scottish Government (SG) and Local Authority (LA) Policies

| Policy Institution | | Local Authority Role |
|---|--------------------------|--|
| SG | LA | |
| The Civil Contingencies Act (2004) | | <p>The local authority is a Category 1 Responder. This gives it a legislative duty to:</p> <ol style="list-style-type: none"> 1. Assess risk 2. Maintain emergency plans 3. Maintain business continuity plans 4. Promote business continuity 5. Communicate with the public 6. Share information 7. Co-operate. |
| The Climate Change Adaption Act (2009): Section 53 – Scottish Climate Change Adaption Programme | | <p><i>Objective S2 – Increase the awareness of the impacts of climate change to enable people to adapt to future extreme weather events</i></p> <ul style="list-style-type: none"> • The Scottish Government states it is its role to promote <i>resources</i> for building resilience to emergencies, including severe weather events, through working with local communities to develop community emergency plans supported by local emergency responders. The local authorities can then implement these through their SOA as part of the SOA priorities. (Objective S2-5) |
| Local Government in Scotland Act (2003) | Single Outcome Agreement | <p>Initiate, maintain and facilitate the community planning process with other agencies - now resulting in the commitments and statements of actions within the Single Outcome Agreements (SOA).</p> <p>In Dumfries and Galloway, several D&G SOA Priorities are resilience-related:</p> <p><i>Priority 4 We will support and stimulate our local economy</i></p> <ul style="list-style-type: none"> • <i>Ambition 4.3</i> We will build the capacity of individuals and communities to support the economy. <p><i>Priority 5 Maintain the safety and security of our region</i></p> <ul style="list-style-type: none"> • <i>Ambition 5.1</i> Our people and communities will be, and feel, safe and secure • <i>Ambition 5.2</i> We will build individual and community resilience • <i>Ambition 5.3</i> We will ensure that individuals and communities are treated fairly and with respect. |
| | Sandbag Policy | <p>A local policy for the deployment of a limited number of sandbags during flooding events. There is explicit ranked prioritising of deployment:</p> <ol style="list-style-type: none"> 1. To prevent loss of life or serious injury. 2. Maintaining access for emergency vehicles. 3. Securing the safety of the roads network. 4. Protecting key community facilities and 'Persons at Risk'. 5. Protecting a number of residential properties. 6. Protecting a number of business/commercial properties. 7. Protecting an individual residential property. 8. Protecting an individual commercial property |

Flood management policy is implemented by local authorities but developed and funded nationally, creating a process that erodes local knowledge and interests, and places emphasis on the power of expert opinion (Johnson & Priest, 2008). This is significant when building resilience locally as in rural areas, this knowledge and expertise is often imported by non-locals from larger urban areas who do not know or have the same experience of local nuance (Johansen & Chandler, 2015). This could potentially marginalise local communities from making decisions about flood protection which impact them directly, although the UK Government has emphasised local participation in local flood management plans (Defra, 2005). For example in one study in Scotland, local knowledge was rated as the most important factor in generating trust in other organisations (Howgate & Kenyon, 2009). However local knowledge discourses can also be used to attempt to gain power over other viewpoints and to discriminate against others in the community through arguing local people have greater expertise on local issues and therefore should have more of a say than incomers (Nimegeer & Farmer, 2016).

In practice, local consultation is mixed. In Cumbria (a county in Northern England) policy makers actively supported and included small businesses and local communities in the development of flood protection measures, building their resilience (Ingirige & Wedawatta, 2014). Yet in the neighbouring region of the Scottish Borders, another study found community concerns about a natural flood management scheme had been inadequately dealt with by the local authority (Howgate and Kenyon, 2009), and almost a third of participants were left with unaddressed concerns about direct negative economic consequences impacting them personally as the community had to pursue the local authority for meetings (Howgate & Kenyon, 2009). The Scottish Government state they want to 'make it as easy as possible for those who wish to express their opinions on a proposed area of work to do so in ways which will inform and enhance that work'. (Scottish Government, 2016c). Some of the difficulty in local authorities engagement with community might be that resistance to an infrastructural scheme such as natural flood management can be nuanced or misinterpreted, for example 'it's not opposition to natural flood management. Its opposition from a sense of not being consulted, or not being consulted thoroughly' (Howgate and Kenyon, 2009 p.337).

In summary, community involvement in decisions around flood protection has been found to increase their resilience (Ingirige & Wedawatta, 2014), but where that consultation process is constrained by a lack of public engagement by the local authority, the impact can undermine resilience and trust in the local authority (Howgate and Kenyon, 2009). However, the feasibility of participative consultation and decision-making which genuinely engages stakeholders across all community groups has been questioned (Conrad et al, 2011). Instead, 'broad stakeholder representation is not necessarily beneficial and, in some cases, can be detrimental to plan quality' (Brody, 2003 p.415), though the author acknowledges this leaves the plan open to ignoring resistance and selectivity influencing the outcome. Further, public engagement on divisive plans can create polarity and hostility within communities, reducing their unified resilience (Innes & Booher, 2004; Sunstein, 2006; Conrad et al, 2011). Antagonism can also occur between the individual; local authority staff and communities (Johansen and Chandler, 2015).

Some of the accusations of 'non-consultation' could be mitigated if it could be demonstrated that consultation had taken place but there is rarely an attempt made by local authorities to demonstrate the impact or influence of consultation results on the planning process (Simpson and Clifton, 2014), and in Scotland they are not legislatively required to do so. Public consultations have been described

as simply 'political choreography' because of their lack of apparent influence (Cheeseman and Smith, 2001).

However, in order to build community resilience, local authorities should be aware that the rapid dismissal of community suggestions and protest may leave communities feeling they have not been adequately consulted, eroding trust and confidence amongst that community in the local authority's intention to listen to their viewpoint (Howgate & Kenyon, 2009).

Methodology

Geographic context

The Whitesands trading area sits on the river bank of the River Nith in the heart of Dumfries, a rural market town of over 30,000 people in the South West of Scotland. The town is impacted by both tidal and fluvial flooding as high tides sweep up the river while heavy rainfall from the hills floods down to the sea, meeting at the Whitesands and over-spilling onto the business area. When a flood alert is imminent, the police close the streets in the surrounding area to both traffic and pedestrians.

The river bursts its banks several times a year. These floods are often low-level and do not enter most premises provided the businesses set up their flood prevention measures (floodgates and sandbags) in time, though some effluent may flood from within business premises through their internal plumbing (sinks and toilets) as the town's drainage system becomes overwhelmed. Occasionally prolonged rainfall combines with spring tides to create major flooding events which do result in water overwhelming prevention measures, as seen most recently in 2009, 2013 and repeatedly as a result of three major storms at the end of 2015.

Floodwater normally recedes within several hours of its peak as the tide ebbs, though it can persist for longer in major flooding events. In this study, conducted in December 2014, all the businesses interviewed were open and trading on Monday 30 December 2013 when water peaked at 3 feet deep outside the premises close to the river, and 6 inches deep inside some of those further away.

Research methods

The study was designed to capture the lived experience of small business owners and explore their resilience in an at-risk environment. Semi-structured interviews were audio-recorded with a purposive sample of six small business owners, all of whom were identified as having been open and trading on the day of the major flood on 30 December 2013.

Five themes were explored during the interview, namely the businesses' flooding history, the business owners' experience of flooding, their perception of their own business's resilience, and the support they receive from the local authority. However five of the business owners interviewed spontaneously discussed their feelings about a proposal by the local authority to develop the trading area through investing in a flood protection scheme. The physical structure the local authority was proposing created a strong reaction amongst the sample. This emergent data was captured with the permission of the participants, and is reported here.

The data was analysed using a hybrid approach to thematic analysis which incorporated firstly a deductive approach exploring the individual's experience of previous flooding, then re-analysed inductively to capture emergent variables (Fereday & Muir-Cochrane, 2008).

The businesses

The businesses varied in time that they have been trading from 2 to 30 years (See Table 2). Two male business owners and 4 female owners were interviewed. The youngest owner was 26, while the oldest was 69.

All businesses were retail-focused, though two had also diversified into services (Businesses 2 and 6). Another retailed online and used their premises to store the stock (Business 1).

Timeline of consultation

This study intended to explore small business resilience, but business owners were keen to discuss the impact of a flood protection measure being developed by the local authority. Business owners in the area were against the development of this plan which had been pursued by the local authority since 2011 (Dumfries and Galloway Council, 2016).

The first public consultation took place in September 2012, after which a suggested *bund* (earthen wall) structure was recommended by external consultants (Mouchel, 2013). The creation of this bund required the permanent removal of the town's bus station and local car parking spaces from the immediate vicinity, and also blocked the view of the river from the trading area. A full 8-week public consultation on the bund plans was claimed by the local authority to have been undertaken in August 2014, but the details of this are not publicly available (Dumfries and Galloway Council, 2016). A further consultation process was claimed by the local authority in early 2015 (Dumfries and Galloway Council, 2016), but again no details of this are publicly available. Following this process, the bund height was reduced and topped by a glass wall to increase views. The removal of the bus station and car parking as well as the blocking of river views by the bund remain within these plans, and at the time of writing (November 2016) the local business and wider community continue to voice their objections on social media.²

Table 2 – Business description

- | |
|---|
| <ol style="list-style-type: none">1. Business 1 is a small retailer with a successful online retail presence. Stock is stored on the premises for both local and online sales. They have been trading for almost 30 years. Flood protection prevented flooding in December 2013.2. Business 2 is a small retailer that has been trading for almost 30 years. Flooded in December 2013.3. Business 3 is a small retailer trading for over 30 years in the same premises. Flooded in December 2013.4. Business 4 is a small co-operative retailer trading for 2 years. Flooded in December 2013.5. Business 5 is a small retailer trading for 2 years. Flooded in December 2013.6. Business 6 is a small retailer trading for 2 years. Flood protection prevented flooding in December 2013. |
|---|

² Community campaign Facebook: <https://www.facebook.com/Save-our-Whitesands-car-parks-and-river-view-358201247681553/>.

Results

Flood history & adaptations

Five businesses in the study had experienced flooding, and all six reported staying within their premises as flood waters rise, enabling them to move their stock to safety and erect flood defences such as sandbags and flood gates. All businesses interviewed had evolved their own strategies to cope with flooding (Table 3) and all 6 had their own flood prevention measures (Table 4). Tables 2 and 3 show what measures the businesses use. Business 1 reported they had once endured a £12,000 loss in a flood event, and stated that they are still learning and evolving their strategy after each flood event, including increasing the height of their flood gates. Unfortunately this increase in floodgate height meant that once installed (and they have to be installed from the inside of the premises), the business owner had some difficulty climbing out of the building.

This need for continual adaptation was emphasised by another business owner (Business 4), who had bought and installed flood protection recommended and supplied by the local authority, but her risk had been underestimated. She discovered that "...most of my water came in over the flood barrier...a higher flood barrier and I would not have been flooded."

Table 3 - Business resilience: Saving stock

| Saving stock | |
|-----------------------------|--|
| Business 1 Owned | Keep stock upstairs now. Bottom shelves now empty. Practised at moving everything upstairs within one hour. |
| Business 2 Rented | Plastic buckets now used for stock at floor level. Enables stock to withstand low floods and buckets can be lifted to higher surfaces for deeper flooding. |
| Business 3 Rented | Raised level at back of shop provides platform for stock storage during flood. |
| Business 4 Rented | Adjusted all stock placement so it is above floor level. |
| Business 5 Owned | Low stock lifted onto temporary tables, which are permanently stored upstairs in the premises. |
| Business 6 Rented | Despite no direct flood experience, strategy is in place and practised. Stock removed to upstairs, but takes almost 3 hours amongst 3 people. |

Table 4 - Business resilience: Tangible measures to protect from flood and pre-planned prevention

| | Protection | | |
|-----------------------------|--|--|---|
| | Sandbags | Floodgates | Pumps |
| Business 1 Owned | No | Yes. Increased height as the flood of 30 December came over existing 3 foot floodgate. | Council grant to buy generator. Have pumps. |
| Business 2 Rented | Yes - 12 sandbags of his own | Yes not through council scheme because was cheaper from builders merchant. | No |
| Business 3 Rented | No | Yes – cost £250 through Council | No |
| Business 4 Rented | Borrowed from local authority. | Yes – From council scheme (recommended size). Too low so water overtopped. | No |
| Business 5 Owned | No | Yes | Have water pumps and a generator. |
| Business 6 Rented | Yes borrowed off another shop. Council removed them when clearing up post-flood. | Landlord got Council floodgate and sealing airbricks. | No |

The flood protection scheme

Four of the businesses were particularly vocal about being against the flood protection plans, all of whom had endured at least one flood. They offered alternative flood protection schemes they believed might work better for the community, including dredging the river (Business 3), building a small wall (Business 2) and removing levees further upstream to let the river flood on farmland (Business 1). Business 1 commented “We’re against the *current* flood defence proposed system for a number of reasons, many of which you have probably heard, blocking out the river view which is very essential part of the feeling, the heart and the soul of the town itself.” In contrast, Business 6, who had never endured a flood in the two years of trading, was in favour of any flood protection measure, stating “Everybody else is very against it but anything that stops the flooding has got to be a good thing, surely.” One business (Business 5) discussed regeneration but did not give an opinion about the scheme.

Interactions with the local authority

Four of the businesses felt they had not been consulted by the local authority about the flooding protection plans, although two businesses were actively attempting to be involved including attending public consultations and contacting the local authority directly (Businesses 1 and 2). One claimed that he counted 31 people objecting to the flood protection plans at one consultation event, yet the record of the event made public by the local authority did not list any objections (Business 2).

He stated “they don’t listen, they don’t take any note of anything you do. Nothing whatsoever, and I can guarantee that. They invite Chamber of Commerce, they don’t listen to them. They invite Civic Pride, they don’t listen to them. They invite the Community Council, they don’t listen to them either.”

Actions of others

Suspicion surrounding the behaviour of other stakeholders in the wider environmental context was evident, with one participant highlighting the possibility that others could be worsening the flooding downstream in order to maximise their upstream businesses, stating “...there is no question that without those barriers there (*i.e. levees blocking the flood plains upstream*) it has an effect on the flooding level in the town itself. I suspect that somewhere there lies part of the solution. Whether people are paid to let their land flood...I don’t know.” (Business 1).

The expert outsider

The business owners also argued the planning process was negating the value of local expertise, and emphasised that in their opinion those who inhabit the environment are best placed to offer valid suggestions for reducing flooding, stating “they have spent thousands upon thousands, hundreds of thousands, on these consultants. They don’t know the ongoings of the Nith here and what it’s like.” (Business 3).

Another business owner agreed, highlighting the disconnection between local knowledge and the ‘expert outsiders’ engaged by the local authority - “They have these silly meetings in the bunker and they don’t invite us. We’re the people that know exactly what happens!...They have the head of this, the head of that, the head of the next thing who know nothing about flooding and nothing about the consequences of flooding.” Business 2.

Why stay?

The businesses cite financial reasons for staying in their vulnerable location because they couldn’t afford to set up in any other central premises, as they could not afford to exist in the centre of the town in a non-flood risk property. One business owner was philosophical about the negative impact of flooding, stating ‘It’s one of the risks you take running a business down here. When we were looking for premises for a shop, we didn’t have a lot of money, and the sort of shop that I wanted to open was a social enterprise, which meant it’s a non-profit-making organisation...the landlords appreciate the fact that if they are going to rent out their property then in view of the flood risk they’ve got to make the rents very low. They’ve got to.’ (Business 4)

Another business owner explained ‘I bought this little shop...you don’t pay any council tax because it’s got such a low rateable value...I would imagine nobody along here is paying council tax. The fact that you’re not in some ways makes up for the fact that you have so much damage, you’ve got to replace your carpets or your floors or your wallpaper or whatever...’ (Business 5)

Discussion

The evolutionary approach demonstrated by the businesses in this study shows how communities and individuals are capable of creating an adaptive transformation on multiple levels, including physical protection and cognitively through strategies to predict and manage each flood response. In contrast, the equilibrist approach of the local authority seeks to control not only the floodwater, but also the business owners by forcing their favoured approach to future flood protection structures on them. The resilience paradox (White and O’Hare, 2014) is therefore demonstrated, as whilst wider

national governments' transformative rhetoric calls for individual responsibility and transformative adaptation (Pugh, 2014; Aradau, 2014) local state agencies including the local authority and the police take an equilibrist stance by controlling access to the area. Further this study demonstrates that local government, through its increasingly devolved power over flood risk (Begg et al, 2015), is in fact embedding the equilibrist structure even more deeply by creating community conflict over a flood protection barrier. This conflict undermines resilience through a loss of faith in the leadership (Tobin et al, 2011) as the community fractures over perceptions of a lack of support for their position (Bush et al, 2001; Werrity et al, 2007; Gordon, 2004). This can also be directly linked to a reduction in community cooperation with local government (Howgate & Kenyon, 2009).

The weight placed on expert opinion (Johnson & Priest, 2008), by Local Authorities, was evidenced in the business owners' comments in this study, as they argued their local knowledge and expertise had provided solutions without advice from non-locals from larger urban areas (Johansen & Chandler, 2015). Although the UK Government has emphasised local participation in local flood management plans (Defra, 2005), in practice local consultation was failing in this study. This lack of communication between the local authority and the businesses has been evidenced in the south of Scotland before (Howgate and Kenyon, 2009). As in this study, although the community pushed for answers and forced the local authority to communicate with them, their questions were not satisfactorily answered and the information supplied was inadequate (Howgate and Kenyon, 2009). Those authors' concluded that resistance to an infrastructural scheme is nuanced and could be partly artefact of the communication process rather than entirely because of objections to the scheme alone (Howgate and Kenyon, 2009). This study found similar results, and more research is required to understand the mechanisms within the Scottish structure at local authority level that facilitate the disengagement of communities and local authorities when major infrastructural decisions are to be made. It could be hypothesised that in the development of flood protection measures, this disengagement might be a result of the equilibrist and protectionist approach these governing institutions adopt.

The finding that some stakeholders interviewed in this study reported being excluded from public consultation events has also been demonstrated in other research (Brody, 2003), where it was found that individuals or groups who dispute or disrupt the planners' aims were deliberately not consulted. The antagonism between community stakeholders and the local authority when they hold polarised views can be mutual (Johansen and Chandler, 2015), which is particularly significant in a small community where many actors hold multiple identities (Burton & Wilson, 2006). In these areas, such as the one in this study, stakeholders' polarisation over flood protection plans could destabilise the whole community in the short-term, and further research needs to be conducted to explore this.

There was little confidence in this group of business owners that anything they did would have any influence over the flood protection scheme process, and there was little indication of what the local authority did with the views it collected from its consultations, as has been found elsewhere (Simpson and Clifton, 2014). Indeed, the local authority did not waver from its view that the current scheme was the best solution, and consultations were a legislative box to be ticked rather than an opportunity to allow the community to influence the proposal (Boxelaar et al, 2006; Cheeseman and Smith, 2001).

Business owners in this study were risk-takers, exposing themselves to the financial risk of flooding by operating their business in the area, and to the physical risk of flooding by remaining in their premises when flooding is forecast. The local authority is possibly unknowingly complicit in creating that risk because the floodgates they supply require fixing from *inside* the business premises, meaning those who erect them have to exit over the flood gates or simply stay inside the building once they are installed. Where these barriers are high, the owners effectively become barricaded inside their premises. This has already resulted in one rescue, and future consequences could be deadly. Whilst governments accept they cannot protect individuals from all threats (Aradau, 2014; Johnson et al, 2005), the consequences of placing greater responsibility on an individual (Barnett & Adger, 2007; Chandler, 2012; Pugh, 2014) and not supporting mandatory protection like flooding insurance for small businesses (Flood Re, 2016, ABI, 2014) can lead to unnecessary hardship. Safer solutions should urgently be explored.

Limitations of this study

The local authority was approached and asked for an interview as part of this study, but declined to participate, so their views are not represented here. Whilst this research highlights potential issues which can occur with policies such as promoting 'resilience' as a community response to climate change, it is a small study in a specific Scottish location with a limited sample of small businesses so generalisations cannot be assumed.

Conclusion and Future research

This paper provides some evidence of White and O'Hare's (2014) resilience paradox, demonstrating one local authority has favoured equilibrist protectionism over evolutionary or transformative approaches to flood management despite the evolutionary local policy rhetoric within the local authority's own Single Outcome Agreement.

Risk was also found to be normalised in this study, White and O'Hare (2014), with several business owners reporting they remain inside the premises during flooding. Paradoxically businesses felt their resilience and indeed their business's survival was under greater threat from the development of a flood protection scheme than from the personal risks they take by putting up floodgates which could trap them inside their premises.

A holistic and inclusive approach to local planning which includes communities and their small businesses could improve relationships between governing institutions and the public in regional locations. Some cognisance must be taken of the existing social networks and multiple identities within rural areas at all levels of governance, particularly where polarisation could undermine and destabilise local resilience.

More work needs to be done in different regions and countries to explore how community resilience can be impacted by the actions of governing agencies and large institutions, and to better understand the processes that enable community resilience to be impacted by policy. Finally, more research needs to be conducted to demonstrate the role of small businesses in community resilience, and to capture more widely how these businesses create their own determined resilience to climate change-related weather events.

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