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Three ways social identity shapes climate change adaptation

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2 3	1	Three ways social identity shapes climate change adaptation
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28 29 30	12	
30 31 32	13	Abstract
33 34	14	
35 36 37	15	Adaptation to climate change is inescapably influenced by processes of social identity - how
38 39	16	people perceive themselves, others, and their place in the world around them. Yet there is
40 41	17	sparse evidence into the specific ways in which identity processes shape adaptation planning
42 43 44	18	and responses. This paper proposes three key ways to understand the relationship between
45 46	19	identity formation and adaptation processes: 1) how social identities change in response to
47 48	20	perceived climate change risks and threats; 2) how identity change may be an objective of
49 50 51	21	adaptation; and 3) how identity issues can constrain or enable adaptive action. It examines
52 53	22	these three areas of focus through a synthesis of evidence on community responses to
54 55	23	flooding and subsequent policy responses in Somerset county, UK and the Gippsland East
56 57	24	region in Australia, based on indepth longitudinal data collected among those experiencing
58 59 60	25	and enacting adaptation. The results show that adaptation policies are more likely to be
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26	effective when they give individuals confidence in the continuity of their in-groups, enhance
27	the self-esteem of these groups, and develop their sense of self-efficacy. These processes of
28	identity formation and evolution are therefore central to individual and collective responses
29	to climate risks.
30	
31	Key words: continuity, flood, sea-level rise, self-efficacy, self-esteem
32	
33	Introduction
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35	Identity is the emotionally significant self-image of an individual which is derived from their
36	membership of social groups, often referred to as in-groups (Tajfel 1974). A positive identity
37	is the product of confidence in the continuity of in-groups, and a sense of self-efficacy (belief
38	in capacity to exert control), distinctiveness, and self-esteem (sense of worth) (Breakwell
39	2015). It is a key factor in individual behaviour as people seek to act in ways that are
40	consistent with the norms of their in-groups.
41	
42	People are aware of and sensitive to threats to their identity, which can arise from changes in
43	social or environmental circumstances, or through labelling by others. Faced with such
44	threats, individuals can respond in several ways, including by changing their behaviour,
45	adapting their identity, denying the existence of the threat, or accepting the existence of a
46	threat but not otherwise changing their identity or behaviour (Breakwell 2010, Jaspal et al.
47	2014).
48	
49	Identity has been highlighted as an important factor in many envirionmental domains,
50	including on ethical consumption, pro-environmental behaviours, climate change activism,

leadership of environmental change initiatives, and sharing of information about sustainability (Whitmarsh and O'Neill 2010, Jaspal et al. 2014, Unsworth and Fielding 2014, Sapiains et al. 2016). Emerging research suggests that social identity, and its sub-dimensions of distinctiveness, continuity, self-esteem, and self-efficacy, can also affect climate change adaptation (Frank et al. 2011, Fresque-Baxter and Armitage 2012, Quinn et al. 2015, Wernersson 2018, Ruoso 2019). We therefore posit three key mechanisms through which identity formation and climate adaptation interact. Specifically, social identities can be an objective of adaptation, they can change in response to climate change information, and they can constrain or enable adaptive action. The dimensions of relationships between identity and adaptation are outlined in Table 1. Maintaining and defending identity can be an objective of adaptation, for example among

Indigenous groups who are struggling to hold tight to place-based and long-lived cultures that distinguish them from Western and settler cultures (Frank et al. 2011, Rotarangi and Stephenson 2014, Eakin et al., 2019). In cases where communities are tied to specific localities, social constrictions of place, or place identity, include the identity of people that belong to them and so place identity has a strong influence on identity (Adger et al. 2011). Nevertheless, social identities are not necessarily based on place, identities are intersectional in that they arise in response to multiple social constructions of difference (such as class, gender, nationality, and race), and this transpires at the collective (in-group) level as well as the individual level.

Maintaining identity is also critical to responses to climate impacts among groups whose
occupational identity is tied to natural resources and management practices (Warner et al.
2015, Hyland et al. 2016), such as fishers (Coulthard 2009), farmers (Ruoso, 2019), ranchers

(Murphy et al. 2017) and pastoralists (Wernersson 2018). The observation that experience of
environmental change is a good predictor of adaptive behaviours may be explained by
understanding those experiences as threats to identity that stimulate adaptive responses
(Demski et al. 2017).

There is some evidence that identities are responding to exogenous framings of in-groups as being more or less vulnerable to climate change (Table 1). For example, people from low-lying islands framed as future climate migrants have shifted towards understandings of self that are more fixed in place or towards identities that are oriented towards transnational mobility (Farbotko et al. 2016). The identity of places and the people tied to them may also be changing in response to climate impacts (Brown et al. 2011). Nightingale (2017) shows how adaptation policy intersects with identity politics in Nepal, with political framings of diverse groups as being similarly vulnerable mapping onto the positions of political parties impeding recognition of the particular needs of local actors. Thus, because identity is intersectional, the response of identities to climate change is shaped by more than climate change's materiality, but also in response to the discourses of vulnerability and adaptation that redefine the positions of subjects and shape their entitlements to resources (Eriksen et al. 2015, Nightingale 2017).

95 Identities are further implicated in enabling and constraining adaptation. Adaptation policies 96 and practices receive greater support when climate change is portrayed as a threat to issues 97 that are important for identity and when information about climate risk and responses is 98 exchanged between groups with similar identities (Frank et al. 2011, Sapiains et al. 2016, 99 Eakin et al. 2019). By contrast, adaptation policies and practices that threaten the continuity 90 of Indigenous and local identities are often strongly resisted (Eriksen et al. 2015, Mortreux

and Barnett 2009, Neilsen and Reenberg 2010). Similarly, dramatic messages of climate induced catastrophe threaten people's desire for continuity, control, and self-efficacy, and so are often denied or minimised, especially when no information about ameliorating behavioural change is available (O'Neill and Nicholson-Cole 2009, McCright and Dunlap 2011, Jaspal et al. 2014). There is mixed evidence about the effects of identifying with proximate and distant groups on support for adaptation policies and practices. Some studies have shown how a strong place identity can inhibit recognition of local environmental changes, and erode the legitimacy of adaptation at local scales (Bonaiuto et al. 2002, Quinn et al. 2019). Other studies have highlighted that sharing a sense of common cause with distant others who are risk from climate change can stimulate changes in individual behaviours and a sense of solidarity (Fresque-Baxter and Armitage 2012, Devine-Wright et al. 2015, Adger et al. 2017). Understanding how climate change affects identity, and identity in turn affects climate change responses is, we suggest, a critical knowledge frontier, and there is a strong call for more empirical research to further understanding of these connections (Fresque-Baxter and Armitage 2012, Adger et al. 2013, Eakin et al. 2019). Table 1 therefore outlines the key research questions and associated theoretical propositions that help guide this contribution as well as further research.

Identity and adaptation in two vulnerable communities

We provide answers to the research questions in Table 1 by synthesising findings from two detailed datasets about the responses of individuals to immediate risks from flooding and

subsequent policy action in Somerset county (UK), and to long-term changes in sea-level and associated policy responses in Gippsland East (Australia). As explained below, these studies were conducted independently, but the studies have common characteristics that make synthesis across them meaningful. Both studies were conducted by social scientists who have a shared understanding of the social dimensions of climate change adaptation (e.g. Adger et al. 2013, Adger et al. 2017, Graham et al. 2018, Quinn et al. 2015), and both used a similar methodology (see below). Further, in both places, flooding is the principal hazard, both are rural communities, and climate change is the overarching discursive and governance frame through which flooding has been understood. We do not claim that these results can be generalised across climate risks in all locations, not least because both studies were of communities in high-income countries. Nevertheless, our comparative synthesis of in-depth interview data from these two studies enables identification of the common and distinct elements of identity that are threatened across these different cases, and the responses of varied identities to different climate threats. In Somerset, flood-affected residents were interviewed in September-October 2014 (six to eight months after the floods) and in April-May 2015. In the first round, 35 residents were interviewed (P1), and a subset of 25 residents took part in the second round (P2). Interviews were conducted with residents who had been flooded in their homes directly, and those living in affected villages but who had not been inundated in their homes. Interview questions

focused on residents' relationships with the place where they live, and how social and place relationships were affected by flooding. Stakeholders with a professional interest in flood risk management were also interviewed (n=52) (for more details see XXX et al. 2018 masked for blind review).

Page 7 of 22

In Gippsland East, two sets of face-to-face semi-structured interviews were conducted. Between November 2010 and March 2011, interviews were conducted with 30 key stakeholders with an interest in adaptation to sea-level rise, including policy makers, members of key community groups, and local government representatives. The key stakeholder (KSI) interviews included questions about climate change risks of concern, with a focus on understanding people and places vulnerable to sea-level rise. In April-May 2012, interviews (I) were conducted with 42 coastal residents who had been flooded in their homes directly, and those living in affected villages but who had not been inundated in their homes. Interview questions focused on residents' relationships to the places they live and visit, the social groups they engage with, and how social and place relationships are affected by flooding. Alongside the interviews, eight focus groups (FG) were held with residents (n=49) in at-risk communities in March and April 2013. Questions in the focus groups explored residents' relationships to the places they live, their experiences with flooding and how sea-level rise may affect their relationships to these places and the people who live in them (for more details about the methods see XXX et al. 2018 masked for blind review).

For the analysis here, interview transcripts were analysed thematically using NVivo qualitative data analysis software. Two authors coded both English and Australian datasets. The data were analysed under a pre-determined coding framework based on the orienting concepts (Layder 2013) that constitute identity, as defined above, i.e. self-efficacy, self-esteem, distinctiveness and continuity. Data were coded according to whether it reflected ingroup or out-group identity (groups that the respondent does not identify with), and whether it captured how identities changed with flooding and adaptation processes. The direct quotes reported are primarily selected to be as diverse as possible to show the range of ways identities were expressed by residents and stakeholders.

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3 4	176	
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/ 8 0	178	Floods and Identity in Somerset
) 10 11	179	
12 13	180	Somerset has a long history of living with water: the name derives from Old English meaning
14 15 16	181	land of summer lakes: low lying parts of Somerset have been drained and reclaimed from
17 18	182	seasonal wetlands and lakes over centuries. Even with this drainage, the long association with
19 20	183	flooding in the area is documented following draining from 1400 and references to flooding
21 22 23	184	from the 1700s (McEwen et al., 2014). This history and the landscape associated with
23 24 25	185	wetland areas has led to residents developing a sense of place that reflects living with water
26 27	186	(McEwen et al., 2014). The present population in Somerset is older than the UK national
28 29 20	187	average, and many respondents in the analysis here referred to retirement plans in the area, or
30 31 32	188	relocation from urban areas. The perceived rural escape alongside the topography forms part
33 34	189	of a distinct identity of place.
35 36	190	
37 38 39	191	Living with localised flooding is part of the landscape, culture and history of lowland
40 41	192	Somerset, with parts of agricultural land commonly being inundated in winter. However, the
42 43	193	nature (flooding of homes), duration and spatial extent of the floods in winter 2013/14
44 45 46	194	marked these floods as a new experience for locals. Unlike previous flooding in the area,
40 47 48	195	these extensive and catastrophic floods were the subject of nation-wide media reporting,
49 50	196	which has entangled residents in local, national and global discussions of climate change
51 52	197	risks and responses (Demski et al. 2017).
53 54	198	
55 56	199	Interviews in Somerset suggest that the floods had two principal effects on identities. First

Interviews in Somerset suggest that the floods had two principal effects on identities. First, many respondents suggested that the floods undermined their confidence in the continuity of

their local communities. One respondent explained that flooding is "like this big black cloud that hangs over the whole village, the whole time. I just don't see a way out of that really" (I5 P2, Somerset). Second, the response of emergency management agencies during and after the floods was a threat to the sense of self-efficacy necessary for a positive identity: "one of the things that engenders fear if you like, in people and stress and all the other things, is not having any information or being condescended to by the authorities" (I12 P1, Somerset). Fears over the loss of continuity in and control over their local communities and places of dwelling resulted in receptiveness to adaptation processes that were subsequently proposed and enacted, including residents becoming actively involved in developing adaptative actions at different scales.

The evolution of identities in Somerset in response to flooding was two-fold. First, while the floods did not transform identities, they contributed to new bases for identity formation, i.e. people began identifying with others in their communities according to whether or not they had been flooded: "even people a couple of doors down who weren't flooded, they didn't have much of a clue, really....[so] it was nice to be able to go and talk flooding with people" (I22 P1, Somerset). Second, respondents expressed new bases of identification with others outside of their communities in similar circumstances: "we felt like refugees, you could empathise what refugees were like and what the situation's like for them" (I2 P1, Somerset).

Residents accepted the need for adaptation, which was enabled in part by these processes of
identification with distant others at risk of flooding, including with those that were taking
adaptive action: *"why aren't we engaging more with the Dutch who historically helped drain the land here* [and are now] *looking at more radical solutions?"* (I4 P1, Somerset).

1 2		
- 3 4	226	
5 6 7	227	Floods and Identity in Gippsland East
/ 8 9	228	
9 10 11	229	The research here reveals core characteristics of community identity in the study areas in
12 13	230	Gippsland East. Notwithstanding quite distinct social positions and associated identities
14 15 16	231	within each community (see XXX et al. 2018 masked for blind review), across the five towns
17 18	232	involved in the research there was shared sense of people and their ancestors having made
19 20	233	these communities during the settler period through hard work, and that that work had
21 22 23	234	produced peaceful and amenables social and natural environments (XXX et al 2014, 2015
23 24 25	235	masked for blind review). Thus there was very much a sense of shared colonial history, self-
26 27	236	efficacy, and pride in the communities involved in the study.
28 29	237	
30 31 32	238	Part of this identity involves controlling and living with environmental perturbations,
33 34	239	particularly flooding (but also fire). Indeed, many towns around the Gippsland Lakes are
35 36	240	prone to coastal and riverine flooding and these can be most disruptive. The most recent
37 38 39	241	disruptive flooding occurred in 2007, with some minor flooding in 2012. Other minor coastal
40 41	242	flooding from king tides is a semi-regular occurrence. Disruptive flooding is expected to
42 43	243	become more frequent with climate change as sea levels continue to rise (DCC 2009). Almost
44 45	244	all local communities are socially disadvantaged, and the region is stigmatised for being both
46 47 48	245	flood prone and in decline, which conflicts with local people's sense of pride and efficacy.
49 50	246	
51 52	247	Between 2010 and 2012 the town of Lakes Entrance became a test case for planning for
55 55	248	climate change after a state planning tribunal found that the local government had failed to
56 57	249	take account of sea-level rise in its decisions, and restrictions on development were then
58 59 60	250	imposed (Hurlimann et al. 2014). Amid local concerns about economic and population

decline, these adaptation decisions can be seen as having undermined people's self-efficacy, and their confidence in the continuity of their local in-groups. Policy makers "came in with a baseball bat... They just destroyed everyone's confidence" (I1, Lakes Entrance). The planning decisions also undermined self-esteem of the local community: "[they] put a really negative spin on the town" (I1, Lakes Entrance) and "the doubts about rising water levels, which are affecting planning decisions, have stopped any prospect of anybody spending any money upgrading the place" (I2, Lakes Entrance). Similar effects on in-group identities were observed in the other communities, where planning decisions were described as "destroying us" (FG1, Seaspray), "unsettling for everyone in the community" (I2, Port Albert), where residents feel they've been "blacklisted" (I2, McLoughlins Beach) and can't move on in their life "because of everything that's been publically said" (11, Manns Beach).

Yet the decisions did not undermine self-efficacy. A principal response to the threat to local continuity in all five towns was the construction of narratives of resilience to flooding. For example, respondents said "it was happening when our grandfathers were here... it's not a new phenomenon" (I3, Lakes Entrance) and "if I get flooded out, so be it... you let it flood... I'm not stressed about the floods." (I1, McLoughlins Beach). Others stressed the importance of flooding to the local environment, and normalized it, saying "I find floods very interesting, quietly entertaining events" (15, Lakes Entrance), and "I love the floods... it just brings all this beautiful fresh water down into the lakes" (FG3, Lakes Entrance).

Another response of people was to identify with other groups in Victoria similarly at risk but
not subject to planning restrictions. For example, respondents referred to a wealthy
Melbourne suburb saying that *"the risks that face towns like Lakes Entrance, are no different to the risks that face St. Kilda esplanade"* (KS1, Lakes Entrance). Through these logics most

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276 respondents effectively denied the threat of flooding to the continuity of communities, and in so doing rejected the need for adaptation: "we don't need all this crap that they sit there and 277 put on us. They don't live here. They don't see what is going on here. It doesn't flood. It 278 doesn't do all these things. It's just a normal place" (FG1, Port Albert). 279 280 281 Table 2 summarises how climate change impacts and adaptation processes can both threaten identities and cause them to evolve and adapt across these different locations. As we explain 282 below, these findings have important implications for adapting to climate change. 283 284 285 Discussion 286 The research here provides evidence for three key mechanisms through which identity 287 formation and climate adaptation interact, namely that: social identities can be an objective of 288 adaptation, they can change in response to climate change information, and they can 289 constrain or enable adaptive action. These mechanisms are evident in the specific cases of 290 flood risk and externally imposed government responses to future risks. 291 292 293 First, in both Somerset and Gippsland East cases identities are explicitly an object of adaptation. In both cases the continuity of in-groups, in-place, are threatened, by flooding (in 294 Somerset), and by government responses to anticpated amplified flood risk due to climate 295 296 change (in both Somerset and Gippsland East). The desire to maintain in-group continuity 297 thus appears to be key to understanding community responses to adaptation imperatives, which were somewhat accommodating in Somerset in response to the experience of flooding, 298 299 and somewhat resistant in Gippsland East in response to Government directives. 300

Page 13 of 22

Second, identities change in response to climate change information. In Somerset there is a long association with flooding but the 2013/14 experience exceeded and surpassed previous experiences and expectations. The increased discussion of climate change, and exchanges with agencies on future adaptation plans framed by climate change projections re-situated the perception of living with water in Somerset. In particular, respondents frequently mentioned other populations experiencing the impact of climate change, including displaced people elsewhere, and the work of Dutch engineers was mentioned in discussion of responses. This identification with distant others was used to frame the respondent's own experience, and positioned the residents themselves withing a wider geopolitical landscape. In Gippsland East, government attempts to facilitate adaptation led to a reinforcement of the existing colonial identity in as much as historical associations and self-efficacy and self-esteem were strongly reasserted as reasons to deny that flooding was a problem and so, in turn, to resist the idea that adaptation interventions were necessary. This strong reassertion of communities being in control, and good places to live, was also stimulated by the stigmatisation of these communities as being in decline.

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Third, the research here shows how identities can enable or constrain adaptation. The experience in Somerset suggests that elements of identity tied to belonging to and confidence in the local community can enable adaptation. When people observe climate threats to their in-group they appear more likely to accept the need for adaptation to sustain the continuity of their communities. This implies that interventions for adaptation can be enabled after extreme events, and through engagement processes that work with the self-efficacy and self-esteem of communities. They may also be enhanced by building a network that enhances solidarity among similarly adapting communities, through which knowledge and empathy can be shared.

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2 3 4	326	
5 6	327	The experience in Gippsland East suggests that identity can also present challenges for
7 8 0	328	adaptation. When adaptation policies are not calibrated with local acceptance of climate
9 10 11	329	change, communities may perceive such policies as threats to their continuity. Desire for
12 13	330	continuity and damage to self-esteem leads to denial of the existence of climate risks, in part
14 15 16	331	by stressing their resilience and by downplaying the distinctiveness of their circumstances.
10 17 18	332	Adaptation processes must recognise local identities and experiences and tolerances of risk,
19 20	333	and work with communities to find solutions that provide confidence in continuity and which
21 22	334	build on senses of self-efficacy.
23 24 25	335	
26 27	336	Our study has demonstrated the value of understanding climate change adaptation though a
28 29	337	social identity lens. Such a lens includes analysis of shared place identies - which ours and
30 31 32	338	other studies show are important for climate change adaptation (Cunsolo Willox et al., 2012,
33 34	339	Geoghegan and Leyson. 2012) – but also draws attention to the way multiple constructions of
35 36	340	social difference combine to create forms of identity that enable or impede adaptation
37 38 39	341	practices (e.g. Osborne 2015). Knowledge of how social identities are at risk from climate
40 41	342	change and from climate change responses is key to the broader endeavour of understanding
42 43	343	the way climate change affects the human experience, because they are central to many
44 45 46	344	psychosocial phenomena, including well being (Walker-Springett et al., 207), and mental
40 47 48	345	health (Cunsolo and Elllis 2018). They are also a key motivator for of adaptive behaviours
49 50	346	and support for or opposition to adaptation policies and programmes, and so a social identity
51 52	347	lens can help advance knowledge of barriers and enablers to adaptation, particularly at the
53 54 55	348	community level (Ensor and Berger 2009). Finally, mapping social identities can help explain
56 57	349	degrees of cooperation within and between communities who may be expected to act
58 59	350	collectively because they share common climate risks, but who struggle to do so for reasons
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socially constructed differences based on religion, race, or class; and conversely who may be
amenable to cooperation and collective action on climate change despite such social
differences because they share a concern over climate change (Ide and Fröhlich 2015, Slevin
et al., 2022). Attention to differences in social identities between governace actors such as
those from government agencies or international NGOs may also help explain enablers and
barriers of adaptation policies and plans.

358 Conclusion

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Identity can be harnessed to support the social acceptability of adaptation policies and plans. Conversely, efforts to initiate adaptation are likely to face challenges of legitimacy, to lack popular support, and to be resisted if they threaten social identities. Yet the same interventions could be highly effective in cases where maintaining social identity is recognised as a goal, and where policies enhance self-esteem and develop their sense of selfefficacy.

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 Table 1: Critical issues on the relationships between identity and adaptation and relevant theoretical approaches

Identity is the emotionally significant self-image of an individual that is derived from the		
membership of in-groups.		
Research question	Theoretical Proposition	
How does climate change	Identities may be threatened by: potential or direct	
threaten identities?	experiences of climate impacts, or climate change policies,	
	which put at risk the continuity or distinctiveness of in-	
	groups, and senses of self-esteem and self-efficacy.	
How do identities respond	Identities may respond by: denying the existence of climate	
to climate threats?	change threats; accepting the need for behavioural and	
	policy change; transformation through changes to in-group	
	and/or self-images.	

 Table 2: Summary of identity responses to climate change in Somerset and Gippsland EastIdentity is the emotionally significant self-image of an individual which is derived from
their membership of in-groups.

their membership of in-groups.		
Research question	Evidence from cases	
How does climate change	In Somerset the magnitude of flooding threatened the	
threaten identities?	community's confidence in its ongoing continuity, and the	
	disaster response and recovery processes threated the	
	community's self-esteem and self-efficacy. The distinction	
	between those who were flooded and those were not also	
	created new bases of distinctiveness and solidarity with local	
	and distant others.	
	In Gippsland East the imposition of planning restrictions to	
	manage flood risk threatened the community's confidence in	
	its continuity and its sense of self-esteem.	
How do identities respond	In Somerset identities evolved to include flood risk as both	
to climate threats?	part of the local identity within the community and	
	increasingly with distant others, and to accept that adaptation	
	is necessary. There was little evidence of significant change	
	in identities.	
	In Gippsland East local identities related to resilience were	
	challenged and this resulted in the rejection of warnings of	
	climate change risks, with locals asserting their capacity	
	(self-efficacy) to adapt, and identifying with distant others	
	who share flood risks but not planning responses to those	
	risks. There is little evidence of identities evolving to accept	
	the need for change.	