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FACULTY OF SOCIAL SCIENCES

Institute of Communication Studies and Journalism

Master thesis

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The Ecological Impacts of the Decline of Local Media: Climate Action, Perceptions of Climate Tractability, and Media Consumption in Scotland

Master Thesis

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Bibliographic note

Abstract

The climate crisis is widely seen to necessitate global action from citizens across the spectrums of power in society. Previous research has highlighted how community integration, collectivist values, social trust, and knowledge of local routes to action are all seen as enabling factors in encouraging civic engagement with 'larger-than-self' problems like climate change. These factors have also been tied to the presence and quality of localised media. Focused on the country of Scotland, this thesis sought to understand how the quality and localisation of consumed climate journalism affects readers' climate beliefs, climate actions, and cultural orientation. Through a survey (n=104) gathering data on Scottish respondents' values, climate beliefs, climate actions, and media consumption - and a quantitative narrative analysis of the climate narratives present in the outlets respondents described themselves reading (n=227 articles) - this thesis suggests that the quality of climate journalism consumed does correlate with greater climate action, but that it is local climate media that more greatly facilitates civic action. The findings of this thesis could add to the discourse surrounding the media industry's response to the decline of local media outlets, and the climate movements solutions to the 'belief-action gap'.

Keywords

local journalism, climate crisis, civic action, narrative analysis, the belief-action gap

Abstrakt

Klimatická krize je všeobecně vnímána jako nutnost globálního zapojení ze strany občanů napříč spektrem moci ve společnosti. Předchozí výzkumy zdůraznily, že integrace komunity, kolektivistické hodnoty, společenská důvěra a znalost lokálních cest

k jednání jsou považovány za faktory, které podporují občanskou angažovanost v řešení problémů "větších než já", jako je změna klimatu. Tyto faktory byly rovněž spojeny s účastí a kvalitou lokálních médií. Tato práce, zaměřená na Skotsko, se snaží pochopit, jak kvalita a lokalizace konzumované klimatické žurnalistiky ovlivňuje přesvědčení čtenářů o klimatu, klimatických opatřeních a kulturní orientaci. Prostřednictvím průzkumu (n=104), který shromáždil údaje skotských respondentů o jejich hodnotách, klimatických přesvědčeních, klimatických opatřeních a konzumaci médií - a kvantitativní narativní analýzy klimatických narativů přítomných v médiích, které respondenti uvedli, že čtou (n=227 článků) - tato práce naznačuje, že kvalita konzumované klimatické žurnalistiky skutečně koreluje s většími klimatickými opatřeními, ale že jsou to právě lokální klimatická média, která usnadňují občanské konání. Zjištění této práce by mohla přispět k diskurzu ohledně reakce mediálního průmyslu na pokles lokálních médií a řešení jak přistupovat z pohledu hnutí za klima k problematice "mezery vědění a jednání" ve společnosti.

Klíčová slova

místní žurnalistika, klimatická krize, občanská akce, narativní analýza, rozdíl mezi vírou a akcí

Range of thesis: 59 pages and 94771 characters

Declaration of Authorship

1. The author hereby declares that he compiled this thesis independently, using only the listed resources and literature.
2. The author hereby declares that all the sources and literature used have been properly cited.
3. The author hereby declares that the thesis has not been used to obtain a different or the same degree.

Prague 28/07/2023   **Louis Boyd-Madsen**

Acknowledgments

Institute of Communication Studies and Journalism

Approved research proposal

Institute of Communication Studies and Journalism FSV UK
Research proposal for Erasmus Mundus Journalism Diploma Thesis

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Student's surname and given name: Louis Boyd-Madsen	**Registry stamp: / Razítko podatelny:** Univerzita Karlova Fakulta sociálních věd Došlo dne: 1 5 -11- 2022 -1- Čj: **413** Příloh: Přiděleno:
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Thesis title in English:
A broken thread? The decline of local media and perceptions of climate change intractability in the UK

Expected date of submission (semester, academic year – example: *SS 2021/2022*)
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SS 2022/2023

Main research question (max. 250 characters):
RQ: Does the presence of a strong local/regional news outlet increase the perceived tractability of climate change?

Current state of research on the topic (max. 1800 characters):
There is a growing body of research and policy development built around the idea that sub-national localities, such as cities and municipalities, need to be at the forefront of the progression towards a sustainable future and mitigating the effects of the climate crisis (Angelo and Wachsmuth 2019). It is argued that through transforming these spaces, individuals' desired behaviour changes become realisable, and locally specialised infrastructure and institutions can be developed. However, the process of developing and experimenting with these changes requires an open and civically engaged community, which understands the peculiarities of their locality and gives room to negotiations, discussions, and the conflicting wishes of its participants (Gausset 2019).

Past research has highlighted the importance of local and regional media for mobilising people towards civic engagement in their local political community. It's been found that the absence of a well-equipped, quality local news outlet can lead people to stray from local electoral decision-making and fracture the structures that encourage community integration and participation (Dietram et al 2002; Shaker 2009; Filla & Johnson 2010).

In the UK, and many other countries, the 21st century has seen an aggressive restructuring of the news economy, with an increase in media centralisation, and the collapse of much of the local news industry (Ramsay and Moore 2015). The local outlets that remain increasingly focus on national-level events and clickbait (Williams et al 2015; Reuters 2022). At the same time, audiences are turning away from news due to feelings of powerlessness, anxiety, and mistrust (Reuters 2022).

Where research is lacking is with regards to how these media deficits are affecting the availability of media which contextualises local communities within the global climate crisis and the effect this is having on the British publics' sense of collective power.

Expected theoretical framework (max. 1800 characters):

This research paper will draw on Suzanne Moser's theories on climate communication and psychological defences. These theories highlight the ways audiences' distance themselves from the global phenomena of climate change and offer various antidotes to inaction. A large part of this disconnect, Moser claims, comes from an inability to perceive or imagine one's proximity to the destabilisation of the environment (Moser 2016).

It will also draw on the theorists who draw the line between the individualist/collectivist dichotomy and climate behaviour. Xiang et al (2019) suggest that people who lean towards collectivist beliefs are more inclined to see climate change as tractable, and therefore more inclined to change their behaviour. Shane Gunster (2018) similarly suggests that collectivist beliefs are often paired with an inclination towards self-transcendent behaviour.

These theories merge well with the aforementioned discussions of local media and civic participation (Dietram et al 2002; Shaker 2009; Filla & Johnson 2010), as local outlets create a space where a collective identity and civically active community can flourish.

It is with these ideas in mind that this paper will seek to examine whether the presence of a localised media, which situates its audiences and local community within the climate crisis while contributing to the community's collective sense of identity and capacity, and providing material for civic discussion, may foster an increased perception of climate change's tractability. It will also seek to understand whether in cases where this media apparatus is not available, climate change is perceived as more intractable.

Expected methodology, and methods for data gathering and analysis (max. 1800 characters):

A mixed methodology will be used for this study. The first, a quantitative cross-sectional survey, will borrow heavily from Xiang et al's (2019) study on intractability. It will use similar scales for measuring 'Belief in Climate Change (BCC)', 'Climate Change Risk Perception (CCRP)' and 'Perceived Intractability of Climate Change (PICC)'. While it will similarly seek to identify the individualist/collectivist leanings of respondents, the study will employ its own metric for measuring the perceived power of one's local community to transform and mitigate against climate change. It will also gather data on news-consumption, specifically for local and community news.

The second method will involve a narrative analysis of the climate coverage from outlets highlighted by the survey. This method, as Julia Metag (2016) describes, is useful for "investigating what kind of storylines, actors, and themes are predominant in texts on climate change". Narrative analysis involves the "reconstruction of narrative", understanding how various "events, subjects, objects, abstract concepts, and actions are integrated in a coherent story" (Metag 2016). Through this method, we will be able to ascertain how and if local media outlets contextualise their readers within the grander story of the global climate crisis.

Expected research design (data to be analyzed, for example, the titles of analyzed newspapers and selected time period):

The intention of this research paper is to understand whether there is a relationship between the declining presence of local media and local coverage in the UK and people's perceived tractability of climate change as individuals and communities. I will administer the online survey to 5 localities in the UK, aiming for 100 respondents from each, gathered using the snowball method. Each locality will receive its own tailored survey questionnaire. I will also request that each respondent only shares the survey with

connections within their locality. I will trust that individuals who receive the questionnaire from outside the locality will not submit a response.

I will select the localities for their varying media ecology's i.e., strong local media; no local media; regional media with national focus; community run media but no dedicated local media etc. From those localities, I will select outlets for further studies based on their popularity within the survey. All articles published the month prior to the survey's submission, which cover environmental politics or climate change, will be examined.

Hypothesis: Readers' perception of the climate crisis as intractable will be related either to the absence of a dedicated local media or to the failure of local media to thoroughly contextualise their audience within the climate crisis.

Expected thesis structure (chapters and subchapters with brief description of their content):
1 INTRODUCTION

2 LITERATURE REVIEW
2.1 Globalisation and the News Media: The changing face of media coverage and economic structure in a globalised, digitised world.
2.2 "Glocalisation" of Climate Change: The importance of sub-national localities and non-state actors in building a sustainable future.
2.3 The Decline of Local Media in the UK: The diminishing capacities of local media in the UK

3 THEORETICAL FRAMEWORK
3.1 Reader Values and Climate Behaviour
3.2 Local Media and Civic Engagement

4 METHODOLOGY
4.1 Cross-sectional survey
4.2 Narrative Analysis

5 RESULTS

6 CONCLUSION AND DISCUSSION

Basic literature list (at least 5 most important works related to the topic and the method(s) of analysis; all works should be briefly characterized on 2-5 lines):

Angelo, H. Wachsmuth, D. (2020). *Why does everyone think cities can save the planet?* Urban Studies, 57(11), 2201–2221. https://doi.org/10.1177/0042098020919081

Summary: This article tracks the transition within global urban policy and discourse from viewing the city as a challenge to sustainability to one of the solutions to sustainability.

Filla, J. Johnson, M. (2010). *Local News Outlets and Political Participation*. Sociology, 45(5), 859–875. https://doi.org/10.1177/00380385211073238

Summary: This study analyses the correlation between the presence of local media and municipal election turnout. It finds that in the absence of a local outlet, less of the public vote.

Gausset, Q. (2019). *Stronger together. How Danish environmental communities influence behavioural and societal changes.* 10.4324/9780429280399-4.

Summary: In this chapter, Gausset describes how one's community can both inspire and facilitate one's own desired behaviour change. He highlights how Danish environmental communities have provided space for experimentation with new social and infrastructural possibilities, while also permanently altering their residents and the larger political systems they exist within.

Gunster, S. (2018). *Engaging climate communication: Audiences, frames, values and norms.* Journalism and Climate Crisis: Public Engagement, Media Alternatives. Routledge.

Summary: In this article, Gunster challenges the knowledge deficit approach to understanding climate inaction, suggesting a closer analysis of audience's values and the ways framing both repeats, confirms or challenges those values, may lead to more successful climate communication. He creates two broad audience belief systems: one which favours individualism and self-interest; and one that favours collectivism and self-transcendence. He suggests holding the latter leads to greater climate action.

Hoff, J. Gausset, Q. Lex, S. (2019). *The Role of Non-State Actors in the Green Transition. Building a Sustainable Future.* 10.4324/9780429280399.

Summary: This is a large text, from which I have drawn two chapters in this bibliography. It discusses the role of various non-state actors in the green transition, and subsequently offers a great deal of insight and theory into understanding the roles of subnational localities in shaping individual psychology and behaviour, empowering communities, and experimenting with new social and infrastructural possibilities.

Metag, J. (2016). *Content Analysis Methods for Assessing Climate Change Communication and Media Portrayals.* 10.1093/acrefore/9780190228620.013.486.

Summary: In this text Metag offers an overview of the various quantitative and qualitative methods she deems as suitable for researching climate communication. She highlights the positives, negatives, and suitable situations for each.

Newman, N. Fletcher, R. Robertson, C. Eddy, K. Nielsen, Rasmus. (2022). *Reuters Institute Digital News Report 2022.* Reuters Institute

Summary: This report discusses the changes that have occurred within the worldwide digital media landscape over 2022, paying close attention to the "fraying" relationship between media and their audiences - in terms of trust, attention, and polarisation.

Moser, S. C. (2016). *Reflections on climate change communication research and practice in the second decade of the 21st century: what more is there to say?* WIREs Climate Change 7(3): 345-369.

Summary: This article offers an extensive literature review of climate communication in the early 2010's, describing how the scientific understanding and conviction that climate change is occurring have moved

on significantly, but that various problems, including inaction and a sense of despair and hopelessness, still remain. It offers advice to journalists and scholars to tackle these emerging and persistent problems.

Ramsay, G. (2016) *Monopolising local news: Is there an emerging local democratic deficit in the UK due to the decline of local newspapers?*, *Academia.edu*. Available at: https://www.academia.edu/85338016/Monopolising_local_news_Is_there_an_emerging_local_democratic_deficit_in_the_UK_due_to_the_decline_of_local_newspapers.

Summary: This report attempts to fill the research gap regarding the decline in local media and rising media centralisation in the UK through a quantitative analysis. It finds that fewer newspapers have closed than is publicly perceived, but many have been substantially "hollowed-out", with small teams of journalists covering expansive regions and communities.

Scheufele, A. Shanahan, J. Sei-Hill, K. (2002) *Who cares about local politics? Media influences on local Political Involvement, Issue Awareness, and Attitude Strength*. Journalism and Mass Communication Quarterly. 79, 2. ProQuest pg. 42

Summary: This article highlights the important, and interrelated relationships between local media presence, community integration, and civic participation. It finds that there is less civic engagement and community integration in areas without local media. It does not claim to find a causal relationship, however.

Shaker, L. (2009) *Citizens' Local Political Knowledge and the Role of Media Access*. Communication Faculty Publications and Presentations. 18.

Summary: This article explains the relationship between media access and political knowledge, both on a local and national scale. It highlights that in both cases, a lack of media coverage leads to a lack of political knowledge for that locality.

Xiang, P. *et al.* (2019) "Individualist–collectivist differences in climate change inaction: The role of perceived intractability," *Frontiers in Psychology*, 10. Available at: https://doi.org/10.3389/fpsyg.2019.00187.
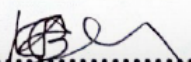
Summary: This article finds that there is a relationship between: individuals' position on the individualist-collectivist dichotomy and how they perceive the tractability of climate change; and perceived tractability and climate action. It finds that people with collectivist beliefs see climate change as tractable and subsequently are more oriented towards action.

Related theses and dissertations (list of B.A., M.A. and Ph.D. theses defended at Charles University or other academic institutions in the last five years):

Spradlin, J. (2020). *Framing Climate Change in Local Context: Newspaper Coverage of Climate Change In Three Mountain Towns in the Intermountain West Compared to National Coverage*. All Graduate Theses and Dissertations. 7907.

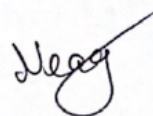**Date / Signature of the student:**   15/11/22

THIS PART TO BE FILLED BY THE ACADEMIC SUPERVISOR:

I confirm that I have consulted this research proposal with the author and that the proposal is related to my field of expertise at the Faculty of Social Sciences.

I agree to be the Thesis supervisor.

Annamária Neag, PhD   15.11.2022

....

Surname and name of the supervisor   **Date / Signature of the supervisor**

Further recommendations related to the topic, structure and methods for analysis:

Further recommendations of literature related to the topic:

The research proposal has to be printed, signed and submitted to the FSV UK registry office (podatelna) in two copies, **by November 15, 2021**, addressed to the Program Coordinator. Accepted research proposals have to be picked up at the Program Coordinator's Office, Mgr. Sandra Štefaniková. The accepted research proposal needs to be included in the hard copy version of the submitted thesis.

RESEARCH PROPOSALS NEED TO BE APPROVED BY THE HEAD OF ERASMUS MUNDUS JOURNALISM PROGRAM.

Contents

List of Figures and Tables

1 - Introduction

The 21st century has seen the threat of climate change pierce into our shared global consciousness. A survey produced by the United Nations Development Programme with a reach of 50 countries found that 64% of respondents saw the climate crisis as an emergency situation (*UNDP,* 2021, p. 7).

In the Western world, this trajectory has aligned with two other broad changes - the decline of local news media and the double-edged liberation and fragmentation of our self-identity. These disparate trends are bound together in how they distort our felt capacity to shape the systems which shape us. The advent of digital media stretched our sense of space to a global scale, just as print media stretched it to the city and the nation. (Giddens, 1991, p. 25). As Giddens describes, this new globalised media "offer[s] access to settings with which the individual may never personally come into contact [and overcomes] boundaries between settings that were previously separate" (p. 85). This media offers a vehicle to understand the scope of our interconnected global societies, and the unprecedented power they hold to utilise, mould, and unbalance the natural world. But trying to rationalise our place in these systems as individuals, can lead to a reckoning with our relative powerlessness within them (p. 192). This new mode of existence has seen even the most isolated of communities subject to fluctuation from the apparatus of globalisation (pp. 20-22), giving rise to a constant barrage of new social realities into which individuals must warp their identity to fit (p. 33). This demand for self-reflexivity and reform can spur feelings of anxiety and paranoia, as huge amounts of trust must be placed onto systems which continuously transform as we attempt to grasp their complexities (p. 23) while we ourselves are both freed and burdened by the responsibility to architect our own lives (Zuboff, 2019, pp. 31-37). When the systems we inhabit face existential ecological threats "which no one living on the earth can escape" these tensions are only exacerbated (Giddens, 1991, p. 225).

It is perhaps unsurprising then that many now disconnect from the daily news cycle (*Reuters,* 2022, pp. 9-10). With headlines describing craters exploding into existence from beneath the thawing Siberian permafrost (*BBC Future,* 2020), wildfires searing across landscapes in the Western United States (*CNN,* 2023), and continual progress reports on the steady death of the planets marine ecosystems (*The Guardian,* 2023), it can become difficult for the everyday reader to make sense of their relationship to these global crises, and their agency within the systems creating them.

Although the limits of individual responsibility should be acknowledged, it is widely agreed that our response to the ecological crisis will require the coordinated action and social transformation of all nations' collective publics and states (Giddens, 1991, pp. 221-222) and that this must happen across the spectrums of power in society (Goffman, 2020; Cash and Moser, 2000; Q, Gausset, personal communication, 7th December 2021). Previous research has highlighted the pivotal role of local media in facilitating local civic action and community integration (Scheufele et al, 2002; Filla and Johnson, 2010; Shaker, 2009) as well as the potential for localised media to empower people to act as part of a larger community, rather than as disempowered individuals (Crompton, 2010; Liverani, 2009).

However, the same globalising media structures which have allowed people to glimpse into far-away realities, have also devastated much of the Western world's local media infrastructure. Digitisation prompted a dramatic restructuring of the media economy and its monetisation models (Napoli et al, 2017; Nielsen, 2015; Nelson, 2013; Boyer, 2011; Cox, 2016). The largest legacy media outlets bloated in size, while financing for local outlets shrivelled (Nelson, 2013). This was true for Scotland and the wider UK, as the British isles lost an estimated 198 local news outlets, half of its local journalists, and half of its local media revenue between 2005 and 2016 (Cox, 2016).

In Scotland, these changes to the media structures have come against the backdrop of a more gradual social change - in lieu of that which Giddens (1991) describes. This change was the dismantling of the powerful civic institutions (e.g. the church; workers unions) through which citizens could come together and exercise grassroots power, and the present-day scramble to replace them with something new.

After the clergy lost its political hold in the post-war years - and union membership dwindled following an era of deindustrialisation in 1980's and the defanging of union power (Towers, 1989, pp. 168-169) - the public were left largely untethered from any large civic institution. As Gallagher notes:

> The trend in Scotland has been for a strong community life to atrophy and people to become detached from institutions that may previously have been important reference points, such as a religious body, a trade-union or professional group, or a local form of identity (Gallagher, 2009, p. 538, quoted in Baldi, 2022, p. 15).

In the late 1990s this public was largely disconnected from the UK's political establishment. Neither the traditionalist right, nor the centrist New Labour party were seen to represent the needs of the Scottish people (Baldi, 2022, p. 9). In 1999 Scotland voted to form its own devolved parliament. The party that took power utilised its own disconnect from the remnants of the old civil society institutions to galvanise it's support. The Scottish Nationalist Party (SNP) instead built and dismantled allegiances around different policies, bringing in the voices of different private bodies and interest groups amorphously. They also reached out to the dislocated public through a populist welfare politics, and formed strong bonds to the nation's financial sector (Baldi, 2022, p. 16).

Looking at the results of large citizen surveys during this period, there are signs of a shift back towards political engagement, even if the institutions do not yet exist to fully

facilitate this will. Looking at perceptions of voting importance, there has been a steady rise from around 70 to around 90 percent of respondents seeing the value in voting at local, Scottish, and UK wide levels (Reid et al, 2019, p. 64; Scholes et al, 2022, p. 43). In terms of actual voter turnout, the pattern is less clear. While UK and Scottish election turnout has increased somewhat, local election turnout has actually decreased since 2005. Importantly, in all cases election turnout is substantially lower than perceptions of election importance (*National Records of Scotland*, 2023).

Beyond voter turnout, there have been signs of a growing interest in political engagement since 2009, with more people signing petitions, donating to campaigns and charities, and less people overall carrying out no forms of civic action, moving from 45% to 33% of respondents. However, in terms of contacting MSP's/MP's and attending council/parliamentary meetings, figures have remained relatively low and stable (Reid et al, 2019, p. 74). There has simultaneously been a shift in perceptions of the importance of the Scottish government to stand up for the concerns of the Scottish people against Westminster (p. 24), which has been matched by a steadily low perception of trust in the UK government to represent the Scottish people, fluctuating between 15% and 21% since 2004, while trust in the Scottish government has risen from 30% to 50% with two peaks in the low 60's (p. 26). This matches with the growing Scottish disenfranchisement from British politics Baldi (2022) highlighted.

The current post-pandemic period has seen public opinion galvanise around egalitarian and green politics. However, this perceptual shift is yet to adequately correlate to behaviour change and action. Polling since the pandemic has seen an increased desire for reforms to education, reductions in social inequality, redistribution of wealth (Scholes et al, 2022, p. 53-54) and urgent action on climate change (Millar et al, 2022, p. 29). A study (*Generation Scotland,* 2021) examining the impacts of the pandemic on rural Scotland also

found a general rise in perceptions of community bonds, paired with a frustration at a fragmented social service system and the interests of local people not being met by their local councillors (p. 8). While no such study exists examining the country's urban and industrial centres, polling does suggest the public's general trust in its fellow citizens is high - 61% overall, with higher figures for the country's middle classes and lower for those who are struggling financially (Allington et al, 2021, pp. 52-53).

An extensive survey carried out by ClimateXChange in collaboration with Ipsos Mori (Miller et al, 2021) found that the desire for immediate action on climate change did not match respondents' self-described behaviour. Behaviours such as supporting environmental protection charities, attempting to persuade others to take action, or working with your community to better protect your area from climate impacts were seen as something individuals would like to do, but which very few were actively doing (p. 32). This was despite the fact that concern for climate change's impacts were very high - 76% and 82% for Scotland (p. 9). The public instead seems to place substantial responsibility for administering change in the hands of businessmen, the UK government, and Scottish Government, while believing individual households can do relatively little (p. 31). Trust in others to combat climate change effectively was scaled inversely, with 78% of respondents believing their community will band together when faced with extreme weather events, 54% believing the Scottish government will do all in its power to prepare for the adverse effects of climate change, and 30% believing world leaders are committed to tackling climate change (p. 36). To summarise, we see perceptions of power and capacity for change rise as we look outwards to larger centres of power, while perceptions of trust shrink.

The authors of the study suggest the mismatch between desired change and action could mirror previous research, which suggested UK citizens were more likely to advocate policy and political changes which mitigate the *impacts* of climate change, than those which

proactively try to prevent dependence on fossil fuel, greenhouse gas emissions, or significantly change consumption patterns (p. 33).

With this thesis, I would like to explore another possibility. Even with the growing desire for a more egalitarian and green politics in Scotland, the decline in dedicated localised media which helps orient individuals within the grand-scale crisis of climate change has expanded the gulf between desired behavioural change and action. Other studies have highlighted the possibility that this gap is related to the fragmentation of civil society I have described, suggesting we need to develop new channels and institutions for democratic engagement across scales of governance if we want to see meaningful systematic change in Scotland (Ramos et al, 2019; *IPDD,* 2022; Lang and Collinson, 2020). But as the literature on politics and media access suggests, and as I would like to theorise, the news media may act as a necessary mordent in the binding of individuals to the civic and political spheres, thus facilitating action and the growth of new civic institutions (Scheufele et al, 2002; Filla and Johnson, 2010; Shaker, 2009; Liverani, 2009). In parallel to this, I would also like to explore whether readers' cultural orientation - the extent to which they see themselves as individuated from (or enmeshed within) society - relates to their media consumption and the climate actions they take. My research question is as follows.

Research Question: Is there a relationship between the availability of localised climate coverage and individuals perceptions of climate change, levels of climate action, and cultural orientation?

Building on the theoretical framework of social ecology, structuration theory, and narrative theory; the current understanding of climate communication scholars about the relationships between media consumption, readers values, and climate action; and the literature on local media, civic engagement, and news desertification, I arrived at the following hypotheses:

Hypothesis 1: Climate beliefs and cultural orientation will correlate strongly with climate actions and civic participation.

Hypothesis 2: Climate beliefs and cultural orientation will correlate strongly with the availability of quality climate journalism at multiple scales.

Hypothesis 3: Climate action and civic participation will correlate strongly with the availability of quality climate journalism at multiple scales.

To test these hypotheses I distributed a survey to various Scottish localities, collecting data on climate beliefs, cultural orientation, news consumption, and climate actions. The survey was distributed between February 8th and March 8th 2023, and received 104 usable responses. I then conducted a quantitative narrative analysis on the Scottish climate coverage published in UK, Scottish, regional and local news outlets between December 8th 2022 and February 8th 2023, using Stoknes (2015) and Moser's (2016) 5 climate defence narratives to create my codebook. Through this, I could create a grading system describing the quality of each outlet according to various narrative metrics. I then used this data to create individualised media diet scores for every respondent at a UK, Scottish, regional, and local scale. I then conducted Kendall's Tau correlation tests between climate beliefs, respondents climate actions, characteristics of consumed news coverage, and cultural orientation. The more strong correlations matching predictions there were, the more a hypothesis was deemed correct.

This study differed from my original research proposal in the following ways. The survey moved from seeking to primarily understand readers' perceptions of climate tractability - or as a phenomena that can be controlled - and belief in climate change, to instead incorporate metrics on climate action, forms of civic engagement, and cultural orientation as well. I did this to try and understand the relationship between localised climate media and the belief-action gap in climate action, which the original approach would not

allow. The survey sampling criteria was loosened to accommodate the low response rate for the targeted survey distribution. The survey was distributed to all localities in Scotland and the minimum of 50 respondents per locality was scrapped. To allow for a manageable number of local media outlets to be studied with the narrative analysis, only outlets listed by respondents were studied. This differed from the original plan to study all local media outlets in the nine localities selected. For the ease of making correlations a quantitative narrative analysis was conducted, rather than a qualitative narrative analysis as was initially proposed. This means the methodology of this paper is now purely quantitative, rather than mixed-methods. There were also several changes to the structure of the theoretical framework and literature review, although the same broad set of ideas were discussed. The most notable change was the removal of the literature from the proposed section "Glocalisation of Climate Change: The importance of sub-national localities and non-state actors in building a sustainable future". The literature from this section drew out the historical progression of sustainability policy and perceptions of the sustainable city, as well as the role of civic action and public opinion in shaping environmental policy. While this literature did inspire and motivate the present study, it was not fully relevant to the thesis' final focus on the role of localised climate narratives and local media in bridging the belief-action gap.

2 - Literature Review and Theoretical Framework

This research paper will be drawing on the following theories and literature to construct its hypotheses. The theoretical framework is divided into three subsections - Social Ecology, Structuration Theory and Life Politics; Climate Communication, Narratives and Values; and The Media Needs of Local Communities.

2.1 Social Ecology, Structuration Theory and Life Politics

This first section will go through a selection of theories which help us conceptualise how climate change and biodiversity loss relate to human societies, and the role of individual people within this dynamic.

I will begin with social ecology. The term social ecology is widely attributed to the political philosopher Murray Bookchin, who developed a lens for understanding environmental problems and crises through an understanding of the relationships between human and natural ecological systems. Through social ecology, he proposed that any meaningful change to humanity's relationship with the natural world would first require a radical restructuring of the systems and sociopolitical relationships humans inhabit (Bookchin, 2005; 1982; Wheeler, 2012 p. 111). Wheeler (2012) describes how the field has matured from Bookchin's primary focus on political economy to "a more inclusive understanding … that takes in other dimensions of society, such as gender, race, technology, and cognition" (pp. 111-112). Both scholars agree that this study should extend down to the psychology of individual people, and how this shapes and is shaped by the larger systems (1982, p. 182). It should also seek to understand how individuals' values and beliefs are developed by their culture and media exposure (2012, p. 126-127). Bookchin's writing was in response to the degradation of earth's ecosystems in his time, but predates more widespread understanding of climate change and its impacts.

From this theoretical work, I will take the assumption that environmental issues are fundamentally human issues. Therefore analysis of environmental problems requires an understanding of society - through the prisms of politics, media, and psychology.

Cash and Moser (2000) describe climate change as a richly complex, multifaceted phenomena, incorporating every existing man-made and "biogeophysical" system. They view these constellations of systems as interacting across levels of scale, with dynamics between the local, national, and global, and dynamics between nature and society. To illustrate this, they describe how "plant matter lying on a deforested tract of Amazonian rainforest" breaks down and releases gas at a rate dictated by both the overall chemical composition of the global atmosphere, and the weather patterns this composition shapes. The small-scale reaction both shapes, and is shaped by, the global system (p. 110). These complex natural processes are then subject to anthropogenic influences - across economic, political and cultural paradigms. As they describe "global market forces [and,] Brazilian national economic and development policies influence local rates of deforestation, and thus local release of carbon dioxide". Deforestation then impacts global climate change, which is being negotiated politically at an international scale, and these negotiations involve representatives of the Brazilian state (pp. 110-111). Suddenly, you are dealing with a huge amount of interconnection and complexity.

They argue that our response to climate change should mirror this complexity, both in research and management. Our approach shouldn't be centralised or decentralised but should instead aim to understand how each level is moulded by the rich patterns of relationships above and below itself (Cash and Moser, 2000, p. 113). Where I think the authors fall short is in their failure to capture the role of conscious human agents within these webs of influence.

I believe Anthony Giddens' (1984) theory of 'structuration' fills this gap. This theory attempts to chart and express the interaction between conscious agents - groups or individual

humans - and the structures they exist within, viewing them as two sides of the same coin. Rather than agents being blindly pulled by the complex structures surrounding them, it is *within* the minds and actions of agents that social structures are both consciously and unconsciously reproduced and transformed. Within this framework, social structures are the amalgam of the daily actions of their inhabitants (Inglis and Thorpe, 2012, pp. 208-210). While this perspective does hold that we are restricted and formed by the structures around us, it introduces an element of agency into this process, allowing us to in turn shape and form those structures. Giddens called the process by which we actively, and consciously, try to steer the direction of structural change 'life politics' (Giddens, 1980, pp. 154-157). Giddens believed that through 'life politics', and addressing the question of 'how we should live', societies could transform both their sociopolitical structure and their relationship with the natural world (Thorpe and Jacobson, 2013, p. 99).

In 2009, Giddens published *The Politics of Climate Change,* a text offering explicit solutions to our environmental crises. In stark contrast to his previous work, his solutions would now see individuals and communities reduced to passive and instrumentalised agents, whose behaviour should be bent by technocratic solutions and market-oriented policy. Thorpe and Jacobson (2013) see these solutions as a retreat away from "reflexive modernity", back into the ideals of "simple modernity" (pp. 99-101). "Simple modernity" describes the beliefs attached to the early phases of modernity, where there is a strong trust in scientific rationalism and progress. "Reflexive modernity" recognises that blind pursuit of progress can have complex unforeseen consequences, and demands individuals, communities, and society at large interrogate the political, economic, and technological structures they live within (Eid, 2003). Thorpe and Jacobson argue that reflexive modernity and life politics should be brought back into our solutions to the climate crisis, reintroducing the conscious element of structuration theory. (2013, p. 104, pp. 115-116).

To summarise, with this section I drew together the following ideas: that environmental issues require an examination and restructuring of human sociopolitical systems; that both natural and human systems are densely complex and thus require an understanding of the dynamics between large scale phenomena and small scale localities; and that individuals and communities can consciously shape the systems and structures they exist within. From here, I will seek to explain the media structures and internal beliefs that encourage people to take part in collective climate action.

SOCIAL ECOLOGY
Environmental-issues should be examined by studying how various aspects of social life – i.e. politics, psychology, media – contribute to our relationship with nature.
(Bookchin 1982)

STRUCTURATION THEORY
The structures individuals inhabit are shaped by the combined actions of their inhabitants. Those structures then facilitate and restrict behaviour.
(Giddens 1984)
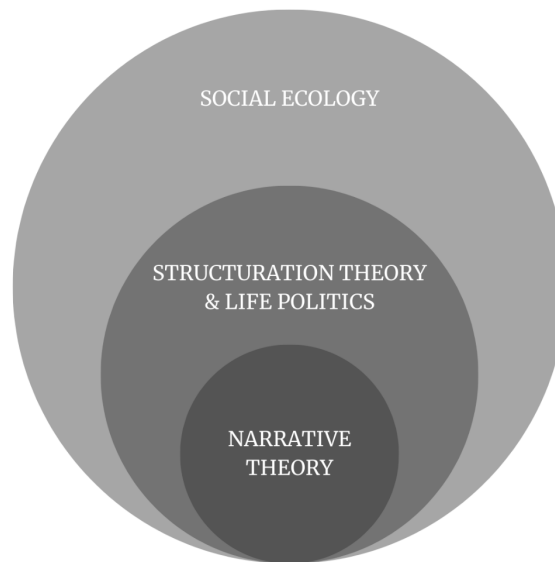
LIFE POLITICS
Through conscious effort, individuals and societies can steer the direction of the structures they inhabit. This can change their relationships with each other and the natural world.
(Giddens 1991)

NARRATIVE THEORY
Individual's beliefs, values and actions are shaped by the stories they create in their heads. One of the main influences on these stories in the present age is the news media.
(Fisher 1987)

SOCIAL ECOLOGY

STRUCTURATION THEORY & LIFE POLITICS

NARRATIVE THEORY

Figure 1: Theoretical Framework

2.2 Climate Communication, Narratives, and Values

With this section I will be drawing out the main theoretical ideas from the climate communication literature about what it is that encourages people to engage with the realities of climate change, and what motivates them to take action against it.

I will explore four main ideas. First, the idea that certain narratives used by climate communicators and journalists encourage disconnection from the realities of climate change, and can disempower individuals - leading them to avoid behavioural change or civic action. Second, that individuals' receptiveness to climate communication is predicated on their values and cultural orientation. Third, that individuals' feeling of embeddedness in a community and their trust of others, are necessary requirements for behavioural change and civic action. Fourth, in parallel to Giddens theory of structuration, I will consider how the media structures around individuals can inhibit and encourage climate action.

2.2.1 The Power of Narratives

Climate communication scholars are approaching a consensus regarding the failure of the information-deficit model to adequately explain climate inaction (Liverani, 2009; Gunster, 2018; Chess and Johnson, 2009; Moser, 2016; Stoknes, 2015). This model suggests that given enough of the 'right' information about climate change, individuals will slip into performing the 'right' behaviours. As Chess and Johnson (2009) suggest "links between information and behaviour can be tenuous at best" (p. 223), and the path between receiving information and taking a specific action is far longer, and shaped by far more exterior factors, than this model accounts for.

Stoknes (2015) theorised that a large part of the failure of climate communicators and journalists to spur the general public into action is instead a result of poor storytelling, and a failure to understand the psychological blocks holding people back from attitude change. He

suggests there are five main narratives that encourage these blocks.

The first, **distance**, suggests stories which centre on technical problems and details, are set in faraway locations, or remain in the natural world, will foster an intellectual distancing from climate change. The second, **doom**, suggests that narratives which paint a 'climate hell' scenario, focus on the sacrifices and losses we will face, or make the available solutions seem futile, will inspire a feeling of disempowerment in their readers - again prompting disengagement. The third, **dissonance**, suggests narratives which fail to express the uncertainty of climate science in tangible terms - i.e. the limits of prediction paired with the scientific consensus on the need for action - will encourage confirmation bias. The fourth, **denial**, suggests narratives that villianise climate deniers, and contribute to the politicisation of climate science, will encourage readers to stick to their tribal allegiances instead of basing their political desires off of the issue as it actually exists. The final narrative, **identity**, suggests stories which fail to work with the pre-existing self-identities of readers, and do not show how that identity could be compatible with a new vision of the future, will dissuade audiences from taking part in any transformative change (Stoknes, 2015, pp. 106-109). As he summarises:

> People have to want to live in a climate-friendly society because they see it as better, not because they get scared or instructed into it (p. 109).

Moser (2016) took Stoknes' five defences and worked them into a comprehensive guide on how each manifests in pro-environmental and anti-environmental communication, then showing examples of what improved communication would look like. These five defences will form the basis of this thesis' code book. This will be covered in more depth in the methodology chapter.

McComas and Shanahan (1999) stress the importance of considering media narratives when seeking to understand climate beliefs and actions. Drawing on the theories of Fisher (1987), they suggest "humans use narratives to weave together fragmented observations [and] construct meanings and realities". This is no different with environmental issues, where "a narrative approach would hold that humans imbue environmental issues with meaning through the stories they tell" (p. 36). They describe how the mass media are presently one of the "most visible and important storytellers", and that it is therefore pivotal to understand the stories they share. It is also crucial to note that narratives are seen to "contribute to the formation of values and value systems, which are tightly bound with beliefs, attitudes and behaviours" (p. 37). For this present study, this means we should examine what narratives are available to readers, if we want to understand why they do, or do not, partake in climate action.

2.2.2 Values and Cultural Orientation

A range of climate communication scholars have interrogated what values are most strongly tied to climate change actions. Gunster (2018) examines the existing literature on the relationships between audiences values, media framing, social norms, and climate action. Regarding values, he highlights how numerous studies examining similar dichotomies - self-interest / individualism vs self-transcendence / egalitarianism / collectivism - find notably similar results. While the former bundle of values tends to correlate to less climate concern and action, the inverse is true for the latter (Gunster, 2018, pp. 64-67). Brought to the context of media narratives and priming, Gunster suggests that audiences primed to engage with a story empathetically had greater "sophistication of moral reasoning applied to decision-making about environmental issues", than those told to think pragmatically

(Berenguer, 2008, quoted in Gunster, 2018, p67)[1]. He suggests that climate communication should attempt to break readers out of the internal narrative of self-interest and encourage the development of the values that are positively associated with climate action, through emotive and considered storytelling.

Crompton's (2010) text *Common Cause: The Case for Working with our Cultural Values* - which Gunster cites - details the literature on the malleability of values, values' relationship to behaviour, and the values associated with adherence to "bigger-than-self" problems. He dismisses two outdated models of understanding the construction of values: the Enlightenment notion of human beings "performing rational computing operations: input[ting] facts, consider[ing] alternatives, assess[ing] the relative costs and benefits of each, and conduct[ing] debate about the optimal course of action" (p. 23) - which ties closely to the information-deficit model; and the more recent suggestion that humans are genetically predisposed to selfish, self-interested values and behaviour (p. 37). He criticises the second notion by examining the ample - and growing - evidence that human beings are equally predisposed to empathic and altruistic behaviours, suggesting the process by which one set of values comes to the fore is mediated by our upbringing and the social structures we exist within (p. 38). In parallel to the dichotomy between individualism / self-interest and collectivism / self-transcendence, Crompton offers his own value set: extrinsic values - "values that are contingent upon the perceptions of others [related] to envy of 'higher' social strata, admiration of material wealth, or power"; and intrinsic values - "value placed on a sense of community, affiliation to friends and family, and self-development" (p. 10).

In another study seeking to find the values attached to individuals in the UK heavily committed to low-carbon lifestyles, Rachel Howell (2013) found that individuals were generally motivated more by altruistic values than "biospheric" values, the latter describing a

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[1] Although the validity of priming as a reliable psychological phenomena is under serious interrogation (Cesario 2013), these findings are still interesting.

desire for humanity to achieve harmony with nature. Individuals self-described their actions as being motivated, above all, by a feeling of responsibility to others suffering the adverse effects of climate change. They were also motivated by feeling a strong connection both to their local and global community (pp. 8-9).

As should now be clear, there are many values which can be used to predict engagement with climate change - a 'larger-than-self problem'. However, they each point towards common ground. Values associated with empathy towards others, care for your larger society, and an interconnected self tend to correlate with more engaged climate action. With this in mind, I believe the value set which best binds these traits together is that of individualism and collectivism, or cultural orientation.

The dichotomy between individualism and collectivism has its roots in 18th century debates of political philosophy. It was introduced to the field of social psychology by Geert Hofstede in 1980, when he attempted to globally chart the prevalence of traits associated with either individualism or collectivism through surveys with IBM employees. He suggested a broad pattern whereby Western countries were more individualistic than non-Western countries (Triandis, 2015, p. 1) which has since been critiqued as an orientalist generalisation. In its simplest form, "individualism (vs. collectivism) is characterized by the view of an independent self (vs. interdependent self)" (Markus and Kitayama, 1991; Xiang et al, 2019, p. 2). Singelis et al (1995) attempted to improve upon Hofstede's model, creating an axis for conceptualising individualism and collectivism, which differentiated between their vertical and horizontal forms. The vertical form defines a belief that individuals are not the same and hierarchy is natural. The horizontal form defines a belief that individuals are generally similar and equality is valued (pp. 244-245).

In a comparative study between Finland and Cambodia, Rautakivi et al (2022) found that Finland's dominance of horizontal collectivist values made its citizens more well primed

to engage in civic action than citizens in Cambodia, which the authors had identified as a broadly vertical individualist country. They emphasise that this should not be seen as an isolated cause, with levels of trust and well-established civic institutions also facilitating this increase in civic action and collective efficacy. But they do highlight how the combination of a distrust in social hierarchy, paired with a society of individuals who feel interdependent, can ease the process of social transformation. Inversely, a country of individuals who see the power structure they exist within as natural, and who simultaneously prioritise the self-interest of themselves and their family, will struggle to see social change move in tandem with the collective desires of the public.

In the context of climate change, Xiang et al (2019) found a strong tie between cultural orientation, perceptions of climate tractability, and climate action. Through a series of surveys with Chinese university students, they found that participants who scored higher for both horizontal and vertical collectivism were more inclined to see climate change as tractable and subsequently more inclined towards various forms of climate action. In the context of Rautakivi et al's (2022) study this could be predicted, as a belief that you are embedded in a wider structure, and not merely an isolated individual, can lead you to care more for that structure's shared goals, and empower you to act as one part of a larger society.

To summarise this section, various scholars point to the idea that an individual's values are strong indicators of their propensity to engage in civic action and to be invested in climate change. For the sake of finding a single set of values that could act as a predictor of civic action towards a 'bigger-than-self problem' I have looked to the individualism and collectivism dichotomy (see figure 2), which is also called cultural orientation.

2.2.3 The Belief-Action Gap

Even once individuals have the values which should draw them towards collective action, and even if they desire behavioural change, it is clear that this is not always enough to spur actual environmental action. Grandin et al (2021) call this phenomenon the 'belief-action gap'. They describe how it can manifest both internally, in our own personal psychology, and externally, in the structures around us, but stressing that the lines between the two are blurred. For example, an external block on action - such as a lack of green public transport - can encourage the development of an internal habit - such as driving to work. Even if the external situation changes, these internal patterns can be hard to shift (p. 8). Scholars have identified numerous potential bridges across the belief-action gap.

As previously discussed, trust is a central spoke in the socio-cultural dynamic facilitating collective action, and is subsequently a potential mordant for the gap. This is drawn out in Smith and Mayer's (2018) cross-national investigation into whether trust, both institutional and social, may mediate climate risk perceptions' relationship with climate policy support. Their study seeks to understand whether individuals mistrust in their fellow citizens and their state may lead to a "social trap" effect, whereby multiple individuals fail to partake in a collective action problem, in which everyone must act together, *because* they don't believe anyone else will do their part (p. 142). They found that there was a strong relationship between both forms of trust and climate concern translating to support of climate policies. This was true across the 35 countries surveyed, and the effect was more pronounced for social rather than institutional trust (pp. 149-150).

The anthropologist, Quinten Gausset (2020), describes the complex relationship between external and internal inhibitors. Through extensive field work in Danish eco-villages and municipalities, he similarly found that there is a large disconnect between people's desired behaviour change and the possible behavioural options they see available to them.

This included the availability of electric transport, renewable energy, and affordable sustainable food options. He describes how individuals who lived in eco-communities ended up maintaining pro-environmental behaviour once they had left the communities, sometimes even changing their career and livelihood. Alongside the effects on individuals passing through the communities, the process of creating the community itself carved out new legal possibilities throughout the various scales of government it inhabited. Examples include how community members had to campaign for legal status as a collective body rather than individuals when registering land permits, or for the legal right to use their own renewable power source and attach this to the central electric grid. Subsequently, new eco-villages already had much of the legal path to self-creation laid out. This process also empowered individual members with extensive knowledge of their countries' political and legal structures, leading some into careers in politics (Gausset, 2020; Q, Gausset, personal communication, 7th December 2021).

This case study brings us back to the ideas of structuration theory and life politics - that individuals both shape and are shaped by the structures around them. It showcases how the barrier between belief and action can be breached by the experience of another way of living, and how taking an active, conscious role in shaping the structures around you can germinate the same possibility within other people's minds, treading out a path for further change. Tying many of the theories I have discussed together, we should try treating the news media as another inhibitory/facilitatory structure.

Gunster (2018) stresses the importance of appreciating the heterogeneity of audiences' media needs when seeking to facilitate behavioural change. Drawing on multiple US polls, he groups some of the difference in needs: those who are already concerned about climate change, take in substantial amounts of information, but struggle to understand how to take meaningful action; those who dismiss climate change and desire greater proof; and those

who do not hold strong opinions either way and need the urgency better articulated (Gunster, 2018, pp. 54-58; Roser-Renouf et al, 2014).

I will elaborate on this first group, those who desire change but struggle to discern the right action. Liverani (2009) describes how individuals often struggle to deal with the complexity of climate change and its dynamics. They view their own contributions in fickle extremes - moving between grandiose feelings of self-empowerment at their smallest actions, and powerlessness at an understanding of their relative insignificance (p. 3). They similarly struggle to register the aspects of climate change that they either cannot see or cannot attach a human face to, such as groundwater pollution and changes to atmospheric gas composition, and cannot understand their own place within the vast physical and temporal scales of the phenomena (pp. 4-5). Considering these complexities, Liverani offers a solution to orient people within the climate crisis - attempting to tie them to the problems and potentialities of their immediate community:

> Well designed climate communication campaigns that address individuals as members of a local community—and not powerless members of an unmanageably large group—can empower them to act. This can help make a long-drawn, global phenomenon personally relevant and immediately newsworthy and accentuate the local and individual ownership of the solutions (pp. 6-7).

While agreeing with Liverani on the need to create a collective struggle through this storytelling, Gunster (2018) suggests this should not be bound to the communities in individuals' immediate proximity, as this incubates a certain form of individualism which could be counter-productive to climate action. Liverani's idea has some merit, although it is under-examined in the climate communication literature.

Looking at the literature on civic action and local media, outside the field of climate change scholarship, we see that there is a plausible case to be made that localised

communication is necessary for local civic action. Alongside factors like socioeconomic

background, education, and ideological strength (Scheufele et al, 2002, pp. 428-429),

community integration and quality media access have been tightly linked to increased civic

and political participation - at both local and national scales (2002, p. 429; Filla and Johnson,

2010; Shaker, 2009).

A study by Scheufele et al (2002) which attempted to look past the demographic

variables usually attributed to political engagement, found that local media use and

heterogeneous interpersonal communication networks could be equally strong predictors of

civic engagement (pp. 439-440). Interpersonal communication networks consist of ties to

one's local community, and spaces and forums for encouraging information exchange,

conflict resolution and discussion. As they describe:

> The good news is that local media can help reinvigorate a community and get citizens
>
> involved. The bad news is that this does not happen for everyone, in part because not
>
> everyone uses local media and in part because the mobilizing content in media tends to be
>
> minimal or poorly presented (p. 440).

They suggest "[local] media use may direct people's attention from matters of purely

individual concerns to the larger community" (p. 429) and offer "mobilizing information,

such as the time and location of collective activities" (p. 430), but that this varies from outlet

to outlet. Studies by Rothenbuler et al (1996) and Filla and Johnson (2010) found similar

results, with strong ties between community integration, local media consumption/

availability, and civic/political engagement. Both studies found that all these variables were

also mediated by the size of the locality to which citizens belong. Rothebuler et al notes that

this does not mean citizens in larger communities are less engaged, but that their engagement

is scattered, individuated and less political (1996, p. 457).

Shaker (2009) found that political knowledge tended to correlate to the forms of news

media available to citizens. For example, citizens with daily access to a local newspaper tended to have higher local political knowledge, while those who only watched cable TV tended to only know about national level politics, and those who didn't consume much news had very little knowledge of politics at any scale (pp. 16-17). This may seem banal, but it is an important consideration when trying to understand rates of civic engagement.
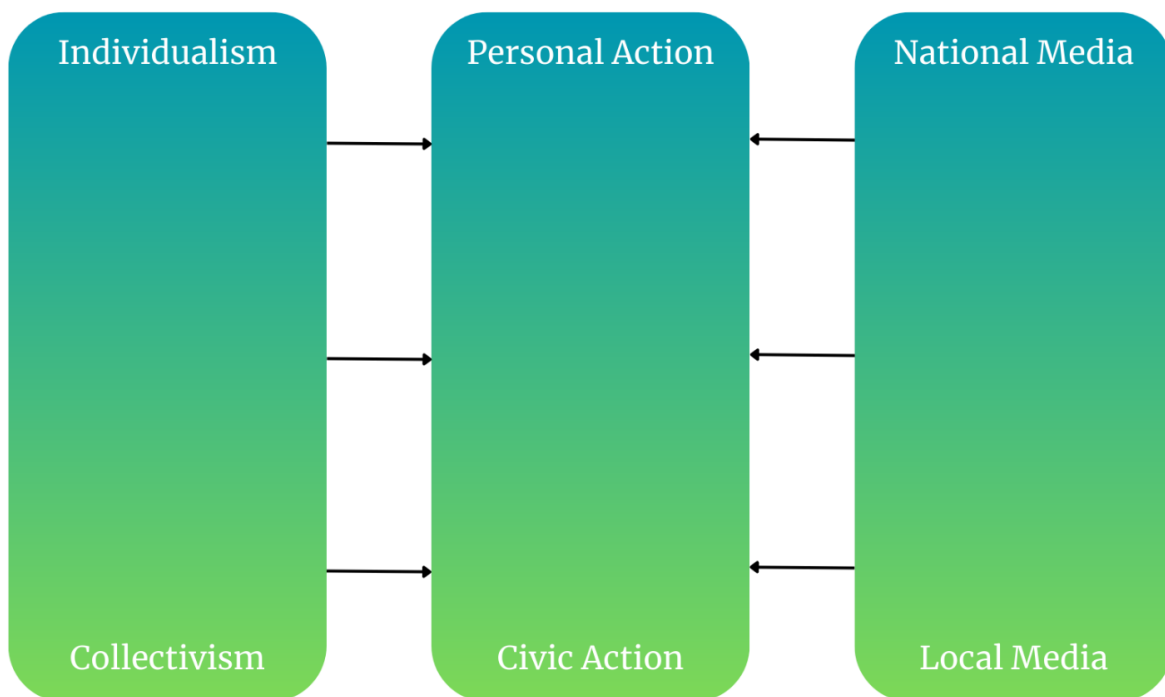
Figure 2: Predicted relationships between rates of cultural orientation/localisation of climate coverage and civic action, based on the literature from subchapters 2.2.2 and 2.2.3

Considering these findings in the context of climate change's belief-action gap, local media's pivotal position in the dynamics of community integration and local civic engagement is meaningful (see figure 2). Previous studies have highlighted: the platform and mediatory role local media can offer for bringing the nuances of regional environmental knowledge to the public it affects (Howarth and Anderson, 2019); the gap in media circulation discerning the infrastructural needs, goals, and impacts of local regions (Howarth and Painter, 2016); and

the difference in climate change framing between local and national outlets (Spradlin, 2020). But, to the best of my knowledge, there is little existing literature on the dynamics between diminishing local media, perceptions of climate tractability, reader values, and climate action. That is the research gap which this paper will aim to fill.

2.3 The Media Needs of Local Communities

With this subchapter I will present some brief contextualisation of the contemporary UK media economy and the local media landscape. I will then introduce Napoli et al's (2017) local media needs model, describing how I will combine it with the theories of the prior two chapters to construct our research questions and hypotheses.

2.3.1 The UK Media Landscape in the 21st Century

It has been widely recognised that the digitisation of the news industry has destabilised and restructured the news media economy, both within the UK and globally. Nelson (2013) describes how the early dreams of the digital revolution flattening global media monopolies rapidly fell apart (p. 88). Instead the opposite occurred, with readership generally filtering up to the outlets most popular prior to digitisation. This exasperation of media centralisation, Nelson argues, is largely caused by the algorithms of tech behemoths like Google and Facebook which bring news content to readers. These algorithms generally show audiences what is already trending and popular, fostering a snowball effect where certain outlets are receiving ever greater attention, and subsequently revenue. This revenue can then be spent on SEO and various other digital innovations which insulate these outlets' algorithmic primacy (pp. 90-96). This centralisation has led to "a news media environment that has grown increasingly desperate for audience growth and revenue" (p. 98).

Numerous scholars have noted how this new media economy has damaged local media's already shrinking ability to produce news content, let alone distribute content (Boyer,

2011; Nielsen, 2015, pp. 18-19) which is significant as in most cases there is no other institutional body producing rich information about what is happening in these localities. As Nielsen notes, local audiences must now often rely on "the local grapevine of interpersonal communication and information from self-interested parties (politicians, local government, businesses) to stay informed about local affairs" (p. 21).

As Boyer highlights from his anthropological studies of local news rooms, many that remain now "openly rely on news agency material not only for basic news information but also for publication-ready texts" (Boyer, 2011, p. 11). These growing "news deserts" (2015) pose a serious problem for civic participation, if the studies on local media and civic engagement in the previous subchapter are considered.

The most recent Reuters Digital News Report (*Reuters,* 2022) solidifies many of these trends in the UK context, highlighting the increased decline of local and regional news outlets, paired with the beginnings of financial stabilisation and steady paying readership for the country's national level legacy media outlets (pp. 62-63). What this report also reveals is the general public's increasing disengagement from media cycles. The number of readers saying that they actively avoid news somewhat or very often has reached 46%, doubling since 2016. These readers cite feelings of overwhelm, powerlessness and anxiety as causes, as well as a growing distrust of media outlets - believing they place financial interests over their reader base (p. 62).

2.3.2 The Local Media Needs Model

Napoli et al (2017) align their beliefs rather closely with those put forward above, believing that the dramatic shift in the economic model of the news industry is leading to the collapse of much of the local media apparatus in both the United States and Europe. They similarly discuss the idea of "news deserts", areas lacking a designated and stable production of

regional information, or a watchdog on local corporate and political corruption - describing how this removes a pre-existing window into the zeitgeist of that local community for the outside world, while the community themselves lose a central facilitator of political participation (pp. 373-374). The authors suggest there is a methodological gap in our understanding of this phenomena. In response, they have created a three-tier method for empirically studying the strength of local media for a region. They argue that through understanding - the available infrastructure (what media outlets exist in this area); the output (how much content these outlets are producing); and the performance (the quality of available coverage, and whether it produces original content about the local area) - we can gain a substantive understanding of whether the information needs of local communities are being met (pp. 376-379). While this model offers comprehensive guidelines for obtaining data for infrastructure and output, the writers suggest the means by which performance can be assessed is far more heterogeneous. For my purposes, ideas of improved climate communication presented by Stoknes (2015) and Moser (2016) would be a suitable fill for this third stage of assessment.

Drawing from the spectrum of ideas presented in this literature review, I will draw out some of the potential relationships between the quality of climate coverage available and readers beliefs and actions. As the subsection on the power of narratives suggested, the narratives available to individuals and communities can have large impacts on their beliefs, values and behaviours. However, as was discussed with the theory of structuration and idea of the belief-action gap, the process by which values and beliefs are transformed into action is dependent on a reciprocal dynamic between agent and structure. Individuals must understand how they connect to something larger than themselves, trust that their community and political structure will also take action, see what actions would be meaningful for the structures immediately tractable to them, and grapple with their own capacity for conscious

action. As past studies on the relationship between media availability and civic action show, the media can help facilitate improvements on these dimensions (figure 3). This brings us to our three hypotheses:

Hypothesis 1: Climate beliefs and cultural orientation will correlate strongly with climate actions and civic participation.

Hypothesis 2: Climate beliefs and cultural orientation will correlate strongly with the availability of quality climate journalism at multiple scales

Hypothesis 3: Climate action and civic participation will correlate strongly with the availability of quality climate journalism at multiple scales.
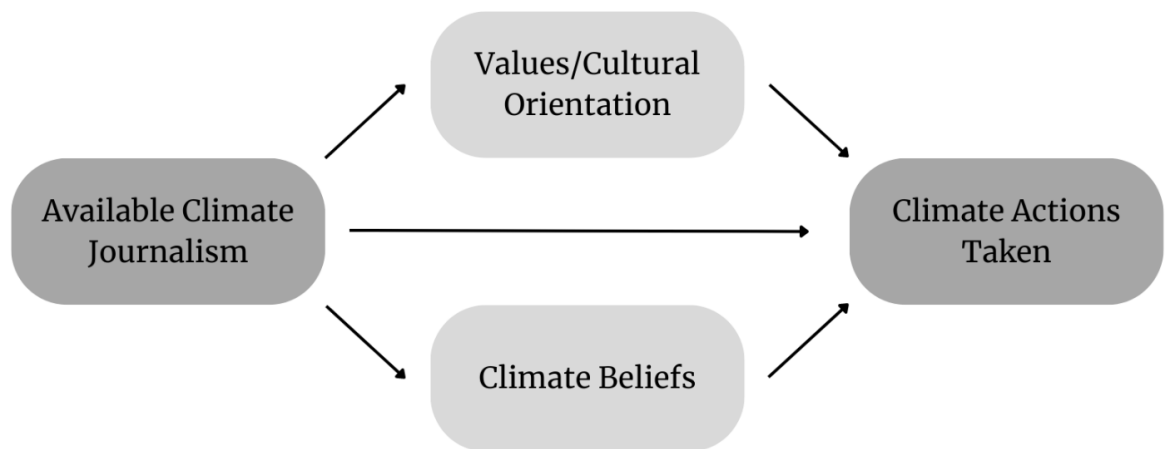
Figure 3: Predicted relationships between available climate journalism, values/cultural orientation, climate actions taken, and climate beliefs

3 - Methodology

This paper seeks to examine the relationships between individuals' perceptions of climate tractability, their level of climate action and the consumption/availability of local/regional climate journalism from Scotland. This will contribute to an understanding of how the recent transformation of the media economy could affect our response to the climate crisis. This study explored these relationships in three phases. First, I distributed a survey across various localities (council areas) in Scotland. This survey gathered data on media consumption, climate perceptions, and cultural orientation. Second, I performed a content analysis on the available Scottish coverage of climate change for the two months prior to the distribution of the survey. This analysis synthesised Napoli et al's (2017) local media needs model with a quantitative narrative analysis. The latter incorporated ideas from Moser's elaboration of Stoknes' five defences model, to produce a code sheet measuring successful climate communication. In the third phase, I then assessed the correlations between the results of the survey and the quantitative narrative analysis, examining the effects narratives had on respondents' perceptions of climate change and levels of climate action.

Through this methodological approach, my hypotheses could be tested. The first phase gathered the data necessary for testing H1, as I had access to individuals self-described cultural orientation, climate beliefs, and the frequency and form of climate action they take. This allowed the hypothesis to be tested in the third phase. By also gathering data on media consumption habits and the outlets people read, I could use the data from the second phase to model the media environment and climate narratives they are exposed to. Through this, I could see what relationships existed between their beliefs/values (cultural orientation, belief in climate change, perceived climate tractability, trust in political representatives, etc), their unique exposure to climate narratives, and their self-described climate actions - allowing me to test H2 and H3.

3.1 Survey

The survey drew heavily from Xiang et al's (2019) study on perceived tractability of climate

change, climate action, and cultural orientation. The metrics taken from this study were

Belief in Climate Change (BCC), Climate Change Risk Perception (CCRP), Perceived

Tractability of Climate Change (PTCC), Climate Change Inaction (CCI), and Cultural

Orientation (CO). Expanding on PTCC we created an additional measure of Perceived

Collective Efficacy (PCE). I also created two questions on Political Trust (PT). The survey

also measured news consumption of climate journalism. This included a measurement of

which outlets respondents read and how often they read climate stories centred on various

levels of scale.

3.1.1 Belief in Climate Change (BCC)

BCC seeks to measure the extent to which respondents view climate change as natural instead

of an anthropogenic phenomena. Respondents were given three items, and asked to grade

each on a scale from -2 (Strongly Disagree) to 2 (Strongly Agree). The mean response was

then calculated. This grading system and mean calculation was performed in the same way

for CCRP, PTCC, PCE, and Cultural Orientation.

3.1.2 Climate Change Risk Perception (CCRP)

This metric seeks to measure respondents' perceptions of the severity of climate change risks,

both globally and at a local level. Respondents were asked about how they perceived the

general threat of climate change, the potential threats in the future globally, and the potential

future threats to them personally.

3.1.3 Perceived Tractability of Climate Change (PTCC)

This metric seeks to measure the extent to which respondents believe they have the capability

to influence climate change through their individual behaviour and action.

3.1.4 Perceived Collective Efficacy (PCE)

Inspired by the metric above, PCE attempts to measure the extent to which respondents believe they can shape their community and local structure, and the capacity of their community to mitigate against climate change.

3.1.5 Climate Change Inaction (CCI)

For this metric, respondents were given the question of "How often, on a scale of 1 (not very often) to 7 (very often), have you taken some kind of action to combat climate change over the last 6 months?". Alongside the seven-point measure, respondents were given the option to self-describe the climate actions they performed. The responses were then categorised. These categories were partially based on the European Commission's 'Citizen support for climate action' survey (2021). However, new categories were created for the various answers that fell outside of the categories this survey offered - for example a 'advocacy/civic engagement/ lobbying' category (see appendix 3 for the full list of categories and their frequency).

3.1.6 Media Consumption Habits

Respondents were given a list of text-based legacy media outlets at multiple levels of scale, including national outlets (UK), Scottish outlets, and regional outlets. They were then given the option to list any local media outlets they read. They were then asked how often they read climate/environmental stories at each of these levels of scale. Finally they were asked whether and where they had read three Scottish climate change stories.

3.1.7 Cultural Orientation

As with other metrics in the survey, cultural orientation was modelled heavily on Xiang et al's study (2019). It similarly used Singelis' (1995) 2-dimensional measure of cultural orientation, which differentiates between horizontal/vertical individualism and collectivism. The respondents were given four sets of questions, each set with either six or seven questions.

The four sets sought to measure horizontal individualism, vertical individualism, horizontal collectivism, and vertical collectivism respectively.

3.1.8 Trust in State Power

Three questions were given to discern respondents' perceptions of their political representatives' power to influence climate change (Political Power - PP), their national representatives' will to create a sustainable future (National Political Trust - NPT), and their local representatives' will to create a sustainable future (Local Political Trust - LPT). No mean metric was calculated for these three questions.

3.1.9 Sampling

The survey was distributed to various Scottish online community boards and interest groups. The survey results were compiled from the initial dataset including incomplete responses (n=122) to a partially complete dataset which excluded the cultural orientation section (n=104) and a fully complete set including the cultural orientation section (n=92). In terms of gender, the sample was bloated in favour of women (n=61) over men (n=41) and non-binary (n=2) respondents. It was similarly bloated towards an older demographic, with respondents over the age of 45 (n=78) making up the majority of the sample. The initial plan to focus the sample on seven discrete localities was discarded, following a poor initial response rate from these regions. The survey was subsequently distributed to online spaces for all localities in Scotland. The resulting sample saw disproportionate representation for a few localities (see figure 4). The City of Edinburgh Council and the Orkney Islands Council saw the highest response rate (n=27 respectively) followed by Fife (n=14) and Midlothian (n=9). What this did mean was that the majority of Scotland was represented by at least one respondent. Finally, the sample was largely composed of respondents with horizontal

collectivist/individualist values, while only a small minority described themselves as having vertical individualist values (see table 1).

Table 1: Average Cultural Orientation results for respondents (n=92)

	Horizontal Individualism	Vertical Individualism	Horizontal Collectivism	Vertical Collectivism
Positive	90.2%	11%	94.5%	29.7%
Neutral	3.2%	3.2%	3.2%	7.7%
Negative	5.4%	84.8%	2.1%	63%

3.1.10 Survey Error

Several steps were taken to to minimise survey error at various levels. Post-survey error was largely minimised by itself as all but two questions in the survey were multiple choice, limiting the risk of coding errors. Similarly, both open-ended questions were requesting simple lists of behaviour rather than fine grained and emotionally rich perspectives. This made coding far more functional. However, there was therefore more room for measurement error at the respondent level with these questions, as respondents may have had different definitions of "climate action" or "local media", meaning they may have performed actions or read outlets they did not list. For the remaining questions response accuracy issues were avoided by testing the survey on five individuals prior to distribution, who gave extensive feedback on the clarity of questions. Respondent selection errors open the most area for risk

Figure 4: Council area of sample, shaded by number of respondents
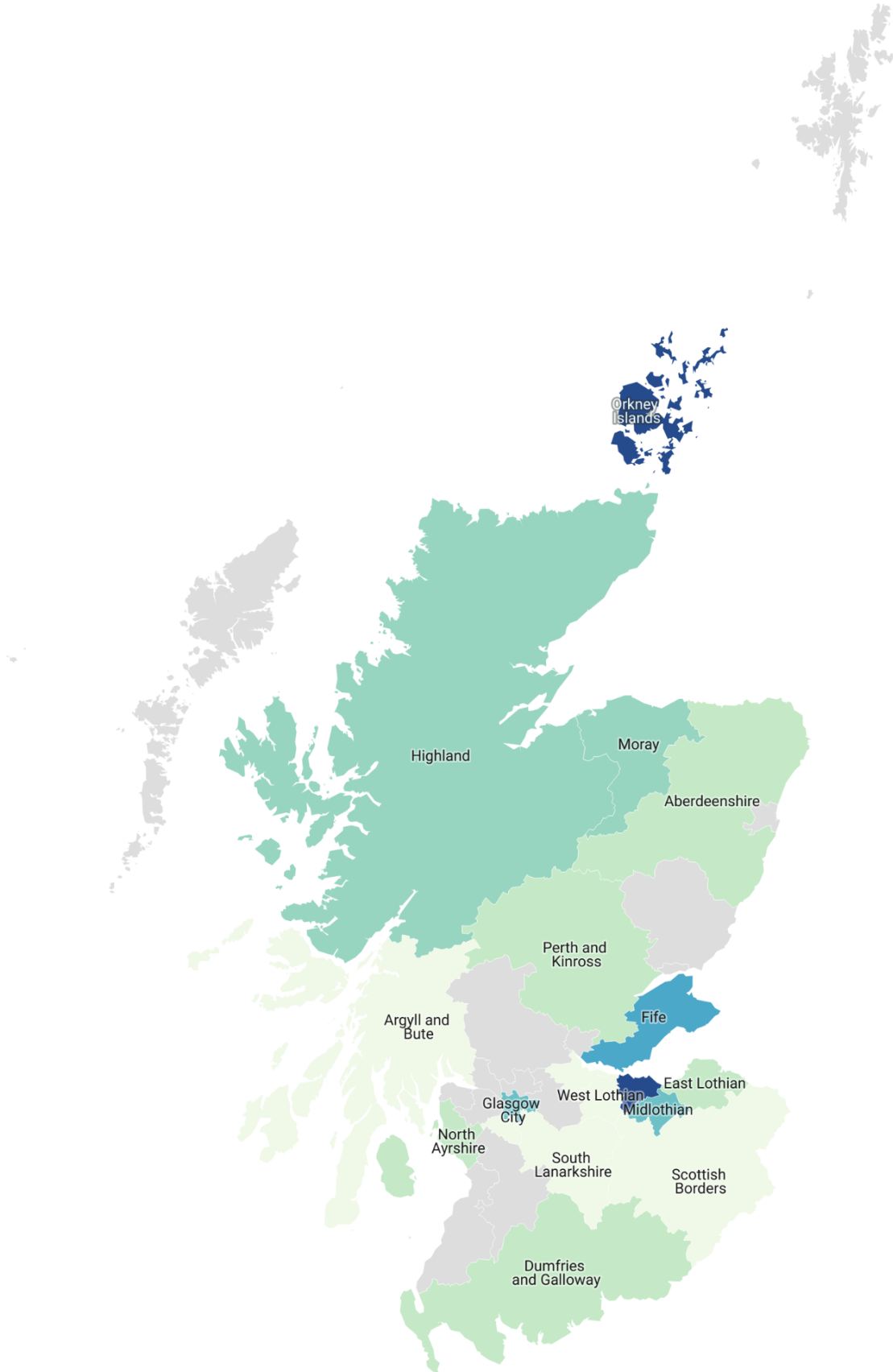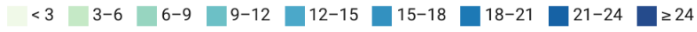
with this survey. As has already been discussed, the initial hope to build a representative sample from a selection of Scottish localities fell through due to non-response at the unit level. The sample subsequently became non-representative, beyond all respondents being residents in Scotland (Weisberg, 2018, pp. 16-24).

3.2 Quantitative Narrative Analysis and Local Media Needs

The quantitative narrative analysis used for this study was inspired by Shanahan and McComas' (1999) study into the shifting of climate change narratives in US news coverage around outlets' issue cycles. They describe how this method can empirically demonstrate differences in dramatic focus and structure between articles and outlets (pp. 38,40). As Metag describes "studies using narrative analysis in the context of climate change communication are investigating what kind of storylines, actors, and themes are predominant in texts on climate change" (Metag, 2016, p. 14). This method is usual for my purposes as it examines how the story of climate change is told, rather than how single events are framed.

The narratives were derived deductively from a variation of Stoknes five psychological defences to climate communication (2015) developed by Moser (2016). As was discussed earlier, these five defences describe forms of narrative employed by climate communicators - and climate deniers - which make it easier for audiences to disengage from the issue of climate change and continue inaction. Moser took these five narratives - distance, doom, dissonance, denial, identity - and explicitly defined how pro-environmental and anti-environmental climate narratives can disengage audiences, also offering guidelines to bypass these psychological blocks (pp. 354-356). The code book (table 2) used to examine the articles in this phase of analysis was built heavily around Moser's definitions. The setting of each article, in terms of narrative, was also coded. The options were: local; regional; Scotland; UK; Europe; and International.

Table 2: Moser/Stoknes 5 Psychological Blocks

Narrative	Description
Distance (Spatial/Social/Conceptual) *Pro-Climate Narrative*	Scientific issue; technical graphs; future problem; distant places; restricted to the realm of nature.
Anti-Climate Narrative	Lack of coverage; naturalise climate variance; divert attention to 'more urgent problems'; suggest 'it won't happen here'.
Improved Narrative	Include people, places and entities where people are; direct readers to locus' of control; reference personal behaviour; human health; stories of community; examples of positive concrete changes.
Doom (Catastrophism, Disempowerment, awaiting technical/political miracle) *Pro-Climate Narrative*	Losses and costs; apocalyptic imagery i.e. 'Climate hell'; focus on sacrifices; describe risks without offering actions.
Anti-Climate Narrative	Turning negative events positive; building fear of solutions rather than problems; cost of transition; ending growth is unpatriotic; making disasters natural or 'divine'.
Improved Narrative	Focus on restoration of what's been lost; focus on near term benefits; focus on improvement on health and quality of life (community/love/family); validate emotionality and be witness to suffering; tell heroic stories of overcoming adversity.
Dissonance (Triggering confirmation bias) *Pro-Climate Narrative*	Either avoiding or overstating uncertainty (encouraging confirmation bias/avoidance); guilt appeals.
Anti-Climate Narrative	Playing up uncertainty; contrarian scientific findings; highlight scientific failures (weather prediction); cherry pick scientific findings; exaggerate scientists' political allegiances.
Improved Narrative	Emphasise scientific consensus; uncertainty as a reason for action; emphasise moral case; make solutions easy and desirable; tell stories of opportunity and discovery.

Denial (Threats to social standing) *Pro-Climate Narrative*	Unnecessary polarisation; tap into fear/guilt; avoid divisive topics; villianise climate deniers.
Anti-Climate Narrative	Politicise science; demonise activists/politicians/scientists; us vs them; claim scientists/activists are heavy emitters; dismiss reality of warming; make fossil fuels essential.
Improved Narrative	Tap desire to be better and work together; tell stories of discussion and reconciliation (not necessarily unity of opinion).
Identity (Resistance to change 'who we are') *Pro-Climate Narrative*	Insist on positions the opposition find unacceptable (government intervention); use untrusted messengers; offer no vision of the future; devaluing other causes.
Anti-Climate Narrative	Claim change is at odds with national identity/individual freedom/desire for no government intervention; spur anti-government/science sentiment.
Improved Narrative	Appeal to deeply held values (family, responsibility, community); illustrate new social norms; open space to discuss wide varieties of policy; tell stories of positive transformation; create a sense of the collective; tap into local patriotism/pride; offer new identity of compassionate and innovative community members.

3.2.1 Data Collection

The first step of the content analysis involved assessing the overall climate coverage about, and from, Scotland in the two month period prior to the distribution of the survey. Wherever possible, articles were collected from Factiva using the search terms of sustainability, environment, and climate change. When outlets were not present on Factiva, data was collected on their own websites. When looking at coverage from UK outlets, articles which did not mention Scotland were filtered out. Articles written in the Gaelic language were also

excluded from the data collection. The total figure was 746 articles, of which 91 came from UK outlets, 356 came from Scottish national outlets, 86 came from regional outlets, and the remaining 213 came from local outlets. One in every three articles were then selected by random for further analyses and coding (figure 5). While outlets at the UK, Scottish, and regional scales covered all the large legacy outlets existing to the best of the author's knowledge, the local outlets selected for analysis were based on the outlets listed by the survey respondents.

	UK	Scottish	Regional	Local
Total	91	356	86	213
Sample for Analysis	31	119	29	48

Figure 5: Quantity of articles sampled from each scale of outlet reach

3.2.2 Coding

The entire text of each article was then examined, including the headline and subheading. In other words whole articles were both the sampling unit and context unit of analysis (Franzosi, 2010, p. 86). If a narrative was present, it was coded as "true". If it was not, it was coded as "false". It was entirely possible - particularly for articles with multiple competing voices - for both the pro-climate narrative and anti-climate narrative to appear within one defence category. Below is an example of my coding process for an article (further examples can be found in appendix 4).

The article I will describe comes from the National. It is titled "Jeremy Leggett: Meet the man aiming to break the rewilding mould". It marked true for all five types of improved communication. This article told the story of Jeremy Legett, an early pioneer of solar energy

technologies who has recently joined the ranks of Scotland's 'Green Lairds', the millionaire landlords buying up Scottish land for various sustainability projects, and for carbon offsetting. Using Legett's story, the article unravelled the problematic aspects these land purchases can have, exasperating inequalities between rural and urban communities as traditional livelihoods are swept away and replaced against the will of local communities. It describes Legett's enterprise as different, showing how he has bought up huge swathes of land to then cheaply sell to local residents, thereby creating mass-ownership programmes. In tandem, Legett is described as using his funds on projects the regional communities have themselves negotiated for. What makes this powerful as a climate narrative is it gives readers a positive vision of the future, giving them something to strive towards. This story included the improved narrative for: Distance by focussing on various local communities and offering concrete changes and actions; Doom by emphasising the renewal of what has been lost and the near term benefits; Dissonance by telling stories of opportunity and discovery; Denial by including the frustrations of locals resistant to change but pointing towards possible consensus and reconciliation; and Identity by offering a positive vision of the future, creating a sense of the collective, and offering a new identity for the articles readers.

It is important to note that by using this coding instrument, the results tell us more about which of the articles were good examples of climate communication, rather than which articles were good pieces of journalism or investigative reporting. Given that this thesis is investigating the impact of the available Scottish climate coverage, and the climate narratives within that coverage, on Scottish readers' perception of climate tractability and their levels of climate action, I do not think this is a problem. However there were some cases where strong and nuanced pieces of reporting were marked as poor climate communication because they did not fit the criteria of the code book. I will return to this in the further research section.

3.3 Correlations

The final phase of analysis involved finding correlations between both the survey and the quantitative narrative analysis using SPSS. These datasets were divided into four categories, climate beliefs, climate actions, characteristics of news coverage, and cultural orientation. The correlations I was most interested in were those found between these groups rather than within them. The mean presence of each of the 15 climate narratives was calculated for every news outlet, alongside the mean setting and the overall number of articles. These means were expressed in a value between 0 and 5. For example, if four out of eight articles in an outlet used the pro-environmental doom narrative, that outlet would get a score of 2.5 for pro-environmental doom. Each individual respondent was then assigned an overall score for each of these metrics based on their news consumption. Different gradings were given for overall UK, Scottish, regional, and local news consumption. For example, if a respondent read two UK news outlets, one with a mean of 2.5 for the pro-environmental doom narrative, and one with a mean of 4 for the pro-environmental doom narrative, that reader would get a mean score of 3.25 for the mean presence of the pro-environmental doom narrative in their UK news consumption (4+2.5 is 6.5 : 6.5/2 is 3.25). This created a total of 84 new variables, and meant I could create a comprehensive estimation of the type of climate narratives every respondent was exposed to, based on their individual media consumption habits.

I then conducted Kendall's Tau correlation tests on the relationships between the types of narrative readers are exposed to and their climate beliefs, climate actions, and cultural orientation.

4 - Results

Before examining the correlations between the survey response data and quantitative narrative analysis results, I will examine the relationships within these datasets.

4.1 Relationships within survey results: Belief ⇔ Action ⇔ Cultural Orientation

Across the belief categories - PTCC, PCE, BICC, CCRP, PCCRP, PP, NPT and LPT - there were strong positive correlations. Perceived tractability of climate change, perceived collective efficacy, and belief in climate change were all strongly related to all other beliefs. Asides from CCRP and PP, there were no relationships between either metrics for climate change risk perception and forms of political trust. PP, NPT and LPT were also all strongly, positively related to each other (appendix 2).

There was only one relationship between beliefs and actions, with BICC having a slight negative correlation on with respondents taking action by changing career (-0.168* with a significance of 0.047). There were also no relationships between belief and cultural orientation.

Horizontal individualism had a negative correlation with overall action (-0.208** with a significance of 0.005), conscious consumption (-0.192* with a significance of 0.022) and changes to transport (-0.170* with a significance of 0.043). Otherwise cultural orientation had no significantly significant impact on actions.

Although there were no statistically significant correlations to explain this, respondents who read no news (n=40) had the highest means for horizontal individualism and individual climate tractability, and the lowest means for horizontal collectivism, climate tractability, advocacy/civic engagement/lobbying and career change. This was found in a comparison between all subdivisions of consumption habits i.e. means across variables for all respondents who read a local, regional, Scottish, and UK outlet, all respondents who at least read a local outlet, all respondents who at least read a UK and Scottish outlet … etc.

4.1.1 Local Media Needs and Quantitative Narrative Analysis

Regarding the availability of local media outlets to audiences, only two regions represented in the survey sample - Midlothian and Aberdeenshire - had no designated local media. This only

accounted for eight respondents. Of those eight, only two did not read any news media. While I did perform a correlation test between the presence and absence of local media, it yielded no significant results. The mean results of the quantitative narrative analysis, including the total number of articles, can be seen on figure 6-9, or as a table in appendix 3.

Figure 6: Dominant climate narratives by outlet (UK)

Figure 7: Dominant climate narratives by outlet (Scottish)

Figure 8: Dominant climate narratives by outlet (Regional)

Figure 9: Dominant climate narratives by outlet (Local)

4.2 Effect of News Consumption on Climate Belief

The first Kendall's Tau correlation test was performed between the metrics measuring various

beliefs about climate change - BCC, CCRP, PTCC, and PCE - against the various

individualised scores of the quantitative narrative analysis. This was done four times, once

for respondents who read any UK, Scottish, Regional and Scottish outlet respectively. The

results were then examined for statistically significant correlations, or results with a

significance below 0.05.

Neither the Regional or Scottish correlation tests yielded any significant results

between climate beliefs and the news coverage narrative analysis results, but there were

multiple statistically significant correlations within the results. The statistically significant

results of the UK and local tests can be seen in table 3 and 4 below.

Table 3

Effects of Coverage on Climate Beliefs - UK	Correlation Coefficient	Significance
Belief in Climate Change		
- *Distance Improved Narrative*	-0.234*	0.027
- *Setting: Local*	-0.241*	0.023
- *Overall Quantity of Coverage*	-0.267*	0.011
Climate Change Risk Perception		
- *Identity Improved Narrative*	-0.206*	0.046
- *Setting: Local*	-0.206*	0.046

*Correlation is significant at the
0.05 level (2-tailed)

Table 4

Effects of Coverage on Climate Beliefs - Local	Correlation Coefficient	Significance
Trust in Political Representatives		
- *Doom Pro-Environmental Narrative*	0.653**	0.008

*Correlation is significant at the
0.05 level (2-tailed)
**Correlation is significant at the
0.01 level (2-tailed)

4.3 Effect of News Consumption on Climate Action

The second Kendall's Tau correlation test was performed between CCI and the various

self-described pro-climate behaviours, against the individualised scores to the quantitative

narrative analysis. The results of this test yielded many more cases of statistically significant

correlations. Again, there were no correlations found during the Scottish and regional tests,

with results instead bloated in UK and local coverage. See table 5 and table 6 for the results.

Table 5

Effects of Coverage on Climate Action - UK	Correlation Coefficient	Significance
Frequency of Climate Action		
- *Doom Anti-Environmental Narrative*	-0.251*	0.022
- *Doom Improved Narrative*	0.259*	0.017
- *Dissonance Improved Narrative*	0.214*	0.048

-	*Denial* *Pro-Environmental* *Narrative*	0.256*	0.022
-	*Denial* *Anti-Environmental* *Narrative*	-0.264*	0.017

Conscientious Food
Consumption

-	*Doom Improved* *Narrative*	0.297*	0.017
-	*Dissonance* *Anti-Environmental* *Narrative*	-0.285*	0.023
-	*Dissonance* *Improved Narrative*	0.258*	0.034
-	*Denial* *Pro-Environmental* *Narrative*	0.278*	0.027
-	*Setting: Scotland*	0.251*	0.046

Changes to Means of
Transport

-	*Dissonance* *Improved Narrative*	0.32**	0.009
-	*Denial* *Pro-Environmental* *Narrative*	0.258*	0.036

Changes to Career

-	*Dissonance* *Improved Narrative*	0.278*	0.023

*Correlation is significant at the
0.05 level (2-tailed)
**Correlation is significant at the
0.01 level (2-tailed)

Table 6

Effects of Coverage on Climate Action - Local	Correlation Coefficient	Significance
Conscientious Food Consumption		
- *Doom Improved Narrative*	0.528*	0.045
Conscientious Product Consumption		
- *Doom Improved Narrative*	0.616*	0.015
- *Setting: Local*	-0.532*	0.049
- *Setting: Europe*	-0.532*	0.049
Changes to Means of Transport		
- *Distance Anti-Environmental Narrative*	0.573*	0.031
- *Setting: UK*	0.682**	0.01
- *Setting: Europe*	0.714**	0.01
- *Overall Quantity of Coverage*	0.619**	0.014
Changes to Career		
- *Doom Improved Narrative*	0.532**	0.043
Advocacy/Lobbying/Civic Engagement		
- *Doom Improved Narrative*	0.616*	0.019

*Correlation is significant at the 0.05 level (2-tailed)
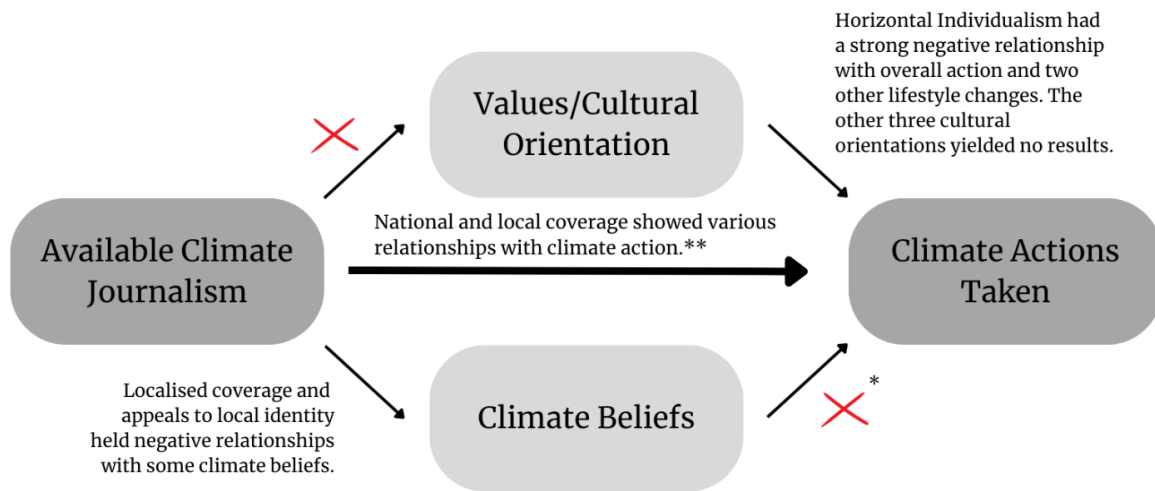**Correlation is significant at the 0.01 level (2-tailed)

5 - Discussion

Figure 10: Relationships between variables as highlighted in the findings

✕ Represents the absence of statistically significant relationships.
* Belief in climate change had a small negative relationship with the likelihood of respondents changing career. Otherwise there were no statistically significant relationships.
** Various improved climate narratives from national and local outlets had positive relationships with various climate actions, while the inverse was true for anti-environmental narratives. Advocacy/Lobbying/Civic Engagement were only affected at a local level. The pro-environmental denial narrative held relationships with various actions at a national level. This was in contrast to the assumptions of the literature. There were no statistically significant relationships between Scottish/regional outlets and climate action.

This thesis has been seeking to understand the relationships between individuals' perceptions of climate tractability and climate beliefs, their level of climate action and the consumption/availability of local/regional climate journalism from Scotland. It sought to do so by answering the following research question:

Research Question: Is there a relationship between the availability of localised climate coverage and individuals perceptions of climate change, levels of climate action, and cultural orientation?

Drawing on the theoretical perspectives of social ecology, structuration theory, and narrative theory, paired with the existing literature on local media's relationship to civic engagement, climate action, values, and cultural orientation, I arrived at the following three hypotheses:

Hypothesis 1: Climate beliefs and cultural orientation will correlate strongly with climate actions and civic participation.

Hypothesis 2: Climate beliefs and cultural orientation will correlate strongly with the availability of quality climate journalism at multiple scales

Hypothesis 3: Climate action and civic participation will correlate strongly with the availability of quality climate journalism at multiple scales.

Through a combination of quantitative narrative analysis and a survey gathering data on climate beliefs, cultural orientation, climate action, and news consumption, I was able to test these hypotheses.

Regarding H1, I found that climate beliefs - which encapsulated belief in climate change, climate change risk perceptions, perceived tractability of climate change, perceived collective efficacy, and trust in political elites to create a sustainable future - held statistically significant positive correlations between one and other on nearly all accounts (see appendix 2 for figures and exceptions). What this means is that respondents who saw climate change as tractable, were statistically more likely to have more positive perceptions of collective efficacy, more trust in the political establishment, more likely to see politicians as powerful, and more likely to perceive climate change as a threat. This relationship was not statistically significant between political trust and climate change risk perception.

There were also no statistically significant relationships between climate beliefs and cultural orientation, or between different cultural orientations.

The relationships between climate beliefs/cultural orientation and climate action were also limited. Horizontal individualism had a negative correlation with overall action, conscious consumption and changes to transport. Belief in climate change also had a negative correlation with the likelihood of respondents changing careers. This latter finding is hard to reconcile with the literature. However, the finding regarding the impact of horizontal individualism could be explained by the idea, presented by Gunster (2018) and others, that individualism can encourage people to opt out of collective action problems. Paired with the finding that the segment of the survey sample least likely to engage in advocacy/civic engagement/lobbying or to change their career, and who had the highest mean of horizontal individualism, were those who did not read the news at all - we could take this assumption further. This would be a fruitful area for further research. However, overall my findings do not offer a resolution to H1 as there were very few correlations between climate beliefs/cultural orientation and climate action.

Looking now at H2, some statistically significant correlations were found, though not in the ways that were expected. Looking at the effects of climate narratives on UK media reader's beliefs, there are a handful of statistically significant *negative* correlations. First, belief in climate change was seen to have negative correlations with the presence of the improved distance narrative, the number of stories set in local Scottish areas, and the quantity of coverage. Second, climate change risk perception had statistically significant negative correlations with the presence of the improved identity narrative, and the number of stories set in local Scottish areas. Looking at the effects of climate narratives on local media readers' beliefs, there was only one strong correlation. This was between respondents' trust in their political leaders to plan a sustainable future for Scotland, and the pro-environmental doom narrative. Both of these findings are surprising, and the overall shortage of correlations likely discredit H2. However, with regards to the findings at a UK level, they could be explained by

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the literature. In contrast to Liverani (2009), Stoknes (2015), and Moser's (2016) idea that

successful climate communication should attempt to connect its audience to the possible

collective action and power of their immediate community, Gunster suggests this localising

form of coverage could incubate a certain inward looking individualism. By this logic,

focussing stories on small communities in Scotland - a country yet to feel the severe impacts

of climate change - and by stirring up patriotic sentiments and local community spirit, this

could in fact cut people off from their interconnection with the wider world. This would be

expressed by a lower belief and perception of risk towards climate change. This should be

another area for further research.

H3 was the most successful with regards to volume of correlation and predictions

being met. Examining the relationships between climate narratives in UK level outlets and

readers action, there were numerous correlations. Frequency of climate action, conscientious

food consumption, changes to means of transport, and changes to career were all positively

correlated with various improved climate narratives and negatively correlated with various

anti-environmental narratives. The only finding which stands out from this trend was the

positive correlations the pro-environmental denial narrative had with frequency of climate

action, conscientious food consumption, and changes to means of transport. It is worth

reiterating that 'pro-environmental' here means stories which unwittingly disengage readers

while trying to inform them on climate change. This finding could perhaps be explained by

the way articles were coded for this narrative. If you examine table 2, you will see that this

narrative captured stories which politicised climate science, villianised climate deniers, and

turned the climate crisis into a human conflict with a clear 'us vs them' set-up. It is entirely

plausible that this narrative could push people *towards* action, rather than *away* from action

as Stoknes (2015) and Moser (2016) predicted. Otherwise, the findings from the UK level

were entirely in fitting with their expectations. For the full results see table 5. Looking at the

correlations between climate narratives in local level outlets and readers action, there were also numerous correlations. Notably the improved doom narrative had positive statistically significant correlations with advocacy/lobbying/civic engagement, career change, conscientious food consumption, and conscientious product consumption. A handful of other unexpected correlations emerged, such as a positive correlation between changes to means of transport and stories set in the UK, Europe, the anti-environmental doom narrative and the overall quantity of coverage. For the full results see table 6.

Despite these stray figures, H3 seems to quite accurately predict our findings. The improved communication narratives positively correlate to an increase in various actions, and the anti-environmental narratives negatively correlate to a decrease in various actions. Strikingly, at a national level actions were centred around lifestyle changes, while at a local level actions also included career change and civic engagement. This would fit with the predictions that local media access can encourage local civic action, more so than national media access can. It should also be noted that there is no clear explanation for the lack of relationships between coverage and action/belief on the regional/Scottish level. Taking these findings uncritically, I can say that H1 and H2 were not confirmed, and H3 was overall confirmed. This would mean, within the limits of my sample, that the following is true:

- Neither beliefs, nor cultural orientation meaningfully impact climate action. The exception is the effect of horizontal individualism on climate action.
- Neither beliefs, nor cultural orientation are meaningfully impacted by the narratives present in the sampled media coverage. The exception is the effect of localised coverage on belief in climate change and climate risk perceptions.
- Climate action is meaningfully impacted by the availability of quality climate coverage at a local and national scale.

This would fit in with the idea that news media, specifically localised media, can have a role bridging the belief-action gap for climate change action. Through the lens of structuration theory, it would suggest that the narratives journalists produce create an important inhibitory/facilitatory structure, which can help enable individuals' desired behavioural change. This would recontextualise the decline of local media in the UK and Scotland. If local media can function as an orientation device for communities, guiding them towards civic engagement and action aimed at building a sustainable future, the loss of that media infrastructure would be damaging for the green transition - and could solidify the political overwhelm, isolation, and anxiousness felt by the public. The question for the media industry would then be how they substitute that structure.

This will be particularly relevant for a country like Scotland which has a strong will to move towards a sustainable future but whose public currently appears to lack the drive to take concrete action. Exploring ways to bolster public political engagement through localised climate journalism is prescient considering the country's close ties to the oil and gas industry, its ample unused wilderness, and its relative insulation from the near-term impacts of climate change.

Before we could begin to make recommendations, a more extensive and refined version of this project would need to be produced - upping the scale of sampling and the breadth of coverage examined. It would also be important to understand the impacts of UK and Scottish news coverage which looks beyond the island's borders, to understand how a fusion of global and local knowledge can spur action.

5.1 Limitations, and recommendations for further research

The largest limitations I see in this study stem from the survey sample. While the overall size of the sample (n=104) was adequate for making correlations in the third stage of the methodology, this process lost some validity as I moved to more fine-grained analysis of

smaller subsections of the sample. This could be remedied by a repeat of this study with a

larger pool of respondents. The demographics of the sample also pose some potential

problems. The respondents were generally female, and above the age of 45. This latter fact

may in fact benefit the study, as audiences for legacy media are generally older than those for

digital-born outlets. However, this points to another limitation of the study which was the

absence of news published through social media, by non-traditional news outlets. This type of

news content is popular amongst the younger demographic who were missing from this

survey. A follow-up study could attempt to incorporate this type of content into the

methodological framework, as was done in Napoli et al's (2017) study, creating a

comprehensive image of the available media to a locality. If I had been working as part of a

larger team, I would have had ambitions to do exactly this. Finally, the relative homogeneity

of cultural orientation within the sample, while not necessarily problematic or

unrepresentative of the Scottish public, likely lowered the potential for seeing more

statistically significant correlations between cultural orientation and climate actions/climate

beliefs. Again, this could be remedied by a larger sample size.

　　　　With regards to areas for future research, I will return to some ideas raised in previous

sections. First, the potential positive impact of divisive and anger-inducing narratives, and

how this relates to quality investigative climate journalism production. As I discussed when

giving examples of the coding process, some articles which could easily be considered strong

pieces of investigative climate *reporting*, were considered bad climate *communication* within

this study's coding system. By interrogating the espoused effectiveness of the Scottish

government's climate solutions, or by giving nuanced accounts of the competing voices and

power dynamics within the discourse surrounding the 'just-transition', some articles were

graded poorly. When this is paired with the finding that the pro-environmental denial

narrative actually correlated to greater climate action - and the finding that perceptions of

climate tractability were synchronised with trust respondents trust in political elites - this points towards the merit in greater explorations over whether nuanced conflict narratives in localised climate journalism may spur action rather than hinder it as many of the scholars cited had suggested.

International Climate Coverage
Conveys the urgency of climate change to readers, and the need for collective action.

Localised Climate Coverage
Connects readers to the possibilities of collective transformation in their immediate surroundings.

The Belief/Action Gap

Climate Beliefs/Values
Individuals are convinced of the urgency of climate change, but cannot see a way to change the exterior world they inhabit.

Civic Climate Action
Individuals work with their communities to change the politics, infrastructure, and ethics of the society around them.

Personal Climate Action
Individuals act as isolated consumers who can change what they eat, what they buy, the transport they use and their general lifestyle, but who cannot change the larger structures around them.

Figure 11: Proposed framework for the hypotheses of future studies

Another area for further research is the relationship between overly localised media and climate inaction. As Gunster suggests, too much focus on readers' immediate locale could facilitate a more self-interested, individualistic outlook towards climate change. Readers may begin to ask questions like "...if I'm not going to be drastically affected soon, why should I act now?". Further research in this area could allow for a more fine-grained understanding of the benefits of localised media for crossing the belief-action gap. Perhaps it is the case that a

more global outlook could help articulate the urgency of climate change, and elucidate how the smaller systems individuals inhabit are linked into the more drastic problems happening right now elsewhere. With this understanding, localised media could instead be seen as a mobilising force towards action and civic engagement, rather than the trigger for a shift in consciousness (see figure 11 for a visualisation of this new framework).

6 - Concluding remarks

This paper sought to understand how the presence of quality localised climate journalism affects readers' beliefs about climate change and the extent to which they take climate action. The study centred on media in Scotland, looking at climate coverage from UK outlets about Scotland, and at Scottish national, regional, and local coverage. Through a survey distributed across the country, I looked for correlations between the quality of climate coverage, as defined by Stoknes (2015) and Moser (2016), and respondents' climate beliefs, climate action, and cultural orientation.

The study found that beliefs were only marginally affected by the content available to readers, and that some of the effects on belief shown went against the expectations of my hypotheses. Readers appeared to be less likely to perceive climate change as a risk or even a reality as coverage focussed in closer on events in Scotland. However, climate actions were positively correlated with quality climate coverage at a local and national level on many metrics. The improved climate narratives this study was looking for led to more climate action, and civic action at a local level, while the anti-environmental and climate sceptic narratives correlated with less. This might suggest that localising climate coverage can spur climate action only once: a) individuals already appreciate the urgency of the climate crisis and are actively looking to understand how they can make a difference in their immediate surroundings or b) if the coverage also articulates how that locality is tied to events

happening in far-flung corners of the globe, or to events that will impinge on the locality in the future. The means of testing this further are laid out in the further research section above.

At a time when many readers are disconnecting from news cycles, and local media has been in steady decline, this study would suggest that more work needs to be done by the media industry - and perhaps by the climate movement - to explain to smaller, discrete localities how they connect to global phenomena like climate change, using stories to build conceptual bridges between peoples' locally lived experiences and the global structures shaping their lives. This could help channel the desire for change that exists in countries like Scotland, and many other countries across the globe, taking individuals out of a place of political anxiety and empowering them to take part in something larger than themselves.

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Appendices

Appendix 1: Survey Template

Demographics

1. Age
   18-24; 25-34; 35-44; 45-54; 55-64; 65+

2. Gender
   Female; Male; Non-binary; A gender not listed here; Prefer not to say

3. Education
   Lower-Secondary education; Upper-Secondary education; Bachelor's education; Master's education; Doctoral education; Vocational education; Vocational apprenticeship

4. Region
   Aberdeen City Council; Aberdeenshire Council; Angus Council; Argyll and Bute Council; City of Edinburgh Council; Clackmannanshire Council; Comhairle nan Eilean Siar; Dumfries and Galloway Council; Dundee City Council; East Ayrshire Council; East Dunbartonshire Council; East Lothian Council; East Renfrewshire Council; Falkirk Council; Fife Council; Glasgow City Council; Inverclyde Council; Midlothian Council; North Ayrshire Council; North Lanarkshire Council; Orkney Islands Council; Perth and Kinross Council; Renfrewshire Council; Scottish Borders Council; Shetland Islands Council; South Ayrshire Council; South Lanarkshire Council; Stirling Council; The Highland Council; The Moray Council; West Dunbartonshire Council; West Lothian Council

5. Length of Residence in Council Area
   Sliding Scale

Climate Change Beliefs and Actions

Belief in Climate Change (BCC):

1. Climate change is an unstoppable process; we cannot do anything about it.
2. The seriousness of climate change has been exaggerated.
3. Emission of greenhouse gases has only a marginal impact on climate change.

Climate Change Risk Perception (CCRP):

1. How concerned are you about global warming?
2. How serious of a threat do you believe global warming is to non-human nature?
3. How serious are the current impacts of global warming around the world?

   How likely do you think it is that each of the following will occur during the next 50 years due to global warming?

4. Worldwide, many people's standard of living will decrease.
5. Worldwide water shortages will occur.
6. Increased rates of serious disease worldwide.
7. My standard of living will decrease.
8. Water shortages will occur where I live.
9. My chance of getting a serious disease will increase.

Perceived Tractability of Climate Change (PTCC):

1. My individual action would likely do little to aid the fight over climate change.
2. Climate change couldn't be relieved by my day-to-day behaviour.
3. In my everyday life, I can bring a fundamental change to climate change..

Perceived Collective Efficacy (PCE):

1. I can contribute to changing how my local community organises itself.
2. Changing the structure of my community would likely do little to aid the fight over climate change.
3. Transforming my local region could expand into larger societal change.
4. If Scotland, and the wider UK, fully shifted to sustainable food and energy, it would do little to tackle global climate change.

Climate Change Inaction (CCI):

1. "How often, on a scale of 1 (not very often) to 7 (very often), have you taken some kind of action to combat climate change over the last 6 months?"

Media Consumption

1. Which of the following outlets do you read (at least) weekly? If unlisted, please specify.

   National (UK): The Guardian; The Financial Times; i; The Morning Star; Metro; The Daily Telegraph; The Week; The Daily Mail; The Times; The Daily Mail

   National (Scottish): The Scotsman; The National; The Herald; The Daily Record

   Regional: The Press and Journal; The Courier

2. Please list any local news outlets you read, at least, weekly.

3. How often do you read climate or environmental stories about…
   a. Your council area (daily/weekly/monthly/never)
   b. Scotland (daily/weekly/monthly/never)
   c. The UK (daily/weekly/monthly/never)
   d. Other specific countries in the world (daily/weekly/monthly/never)
   e. Multinational issues (daily/weekly/monthly/never)

4. Below are a series of local climate related stories from the last months. Please specify how you read these stories (from local, regional and/or national outlets). If you did not read or hear about any of the stories leave the relevant line blank.

   The announcement that construction of Scotland's 'Green Freeports' will take place in the Firth of Forth and Inverness and Cromarty Firth - *Local/regional/national*

   Winter flooding in areas across the country - *Local/regional/national*

   Developments of the Island's Growth deal in Orkney, the Shetlands and the Outer Hebrides - *Local/regional/national*

Cultural Orientation

Horizontal individualism (H-I)
1. I often do "my own thing".
2. People should live their lives independently of others.
3. I like my privacy.
4. I prefer to be direct and forthright when discussing things with people.
5. I am a unique individual.
6. What happens to me is my own doing.
7. When I succeed, it is usually because of my abilities.
8. I enjoy being unique and different from others in many ways.

Vertical individualism (V-I)
9. It annoys me when other people perform better than I do.
10. Competition is the law of nature.
11. When another person does better than I do, I get tense.
12. Without competition, it is not possible to have a good society.
13. Winning is everything.
14. It is important that I do my job better than others.
15. Some people emphasise winning; I'm not one of them.

Horizontal Collectivism (H-C)
16. The well being of my co-workers is important to me.
17. If a co-worker gets a prize, I would feel proud.
18. If a relative were in financial difficulty, I would help within my means.
19. It is important to maintain harmony within my group.
20. I like sharing little things with my neighbours.
21. I feel good when I cooperate with others.
22. My happiness depends very much on the happiness of those around me.
23. To me, pleasure is spending time with others.

Vertical Collectivism (V-C)
24. I would sacrifice an activity that I enjoy very much if my family did not approve of it.
25. I would do what would please my family, even if I detested that activity.
26. Before taking a major trip, I consult with most members of my family and many friends.
27. I usually sacrifice my self-interest for the benefit of my group.
28. Children should be taught to place duty before pleasure.
29. We should keep our ageing parents with us at home.
30. Children should feel honoured if their parents receive a distinguished award.

## Appendix 2: Correlations between beliefs

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Key:

- PTCC: Perceived tractability of climate change

- PCE: Perceived collective efficacy

- BICC: Belief in climate change

- CCRP: Climate change risk perception

- PCCRP: Personal climate change risk perception

- PP: Political power (power of elites to affect climate change)

- NPT: Trust in national political establishment to plan towards a sustainable future

- LPT: Trust in local political establishment to plan towards a sustainable future

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		PTCC	PCE	BICC	CCRP	PCCRP	PP	NPT	LPT
PTCC	Correlation Coefficient	1.000	,593**	,424**	,342**	,226**	,503**	,319**	,300**
	Sig. (2-tailed)		0.000	0.000	0.000	0.002	0.000	0.000	0.000
	N	104	104	104	104	104	96	100	103
PCE	Correlation Coefficient	,593**	1.000	,482**	,399**	,242**	,514**	,386**	,302**
	Sig. (2-tailed)	0.000		0.000	0.000	0.001	0.000	0.000	0.000
	N	104	104	104	104	104	96	100	103
BICC	Correlation	,424**	,482**	1.000	,403**	,189**	,513**	,221**	,187*

	Coefficient								
	Sig. (2-tailed)	0.000	0.000		0.000	0.010	0.000	0.005	0.017
	N	104	104	104	104	104	96	100	103
CCRP	Correlation Coefficient	,342**	,399**	,403**	1.000	,664**	,300**	0.121	0.036
	Sig. (2-tailed)	0.000	0.000	0.000		0.000	0.000	0.111	0.637
	N	104	104	104	104	104	96	100	103
PCCRP	Correlation Coefficient	,226**	,242**	,189**	,664**	1.000	0.147	0.051	-0.057
	Sig. (2-tailed)	0.002	0.001	0.010	0.000		0.066	0.512	0.463
	N	104	104	104	104	104	96	100	103
PP	Correlation Coefficient	,503**	,514**	,513**	,300**	0.147	1.000	,422**	,365**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	0.066		0.000	0.000
	N	96	96	96	96	96	96	95	96
NPT	Correlation Coefficient	,319**	,386**	,221**	0.121	0.051	,422**	1.000	,671**
	Sig. (2-tailed)	0.000	0.000	0.005	0.111	0.512	0.000		0.000
	N	100	100	100	100	100	95	100	100
LPT	Correlation Coefficient	,300**	,302**	,187*	0.036	-0.057	,365**	,671**	1.000
	Sig. (2-tailed)	0.000	0.000	0.017	0.637	0.463	0.000	0.000	
	N	103	103	103	103	103	96	100	103

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Appendix 3: Categories of climate action and percentages of sample performing actions

Percentage of Sample Performing Action (n=104)
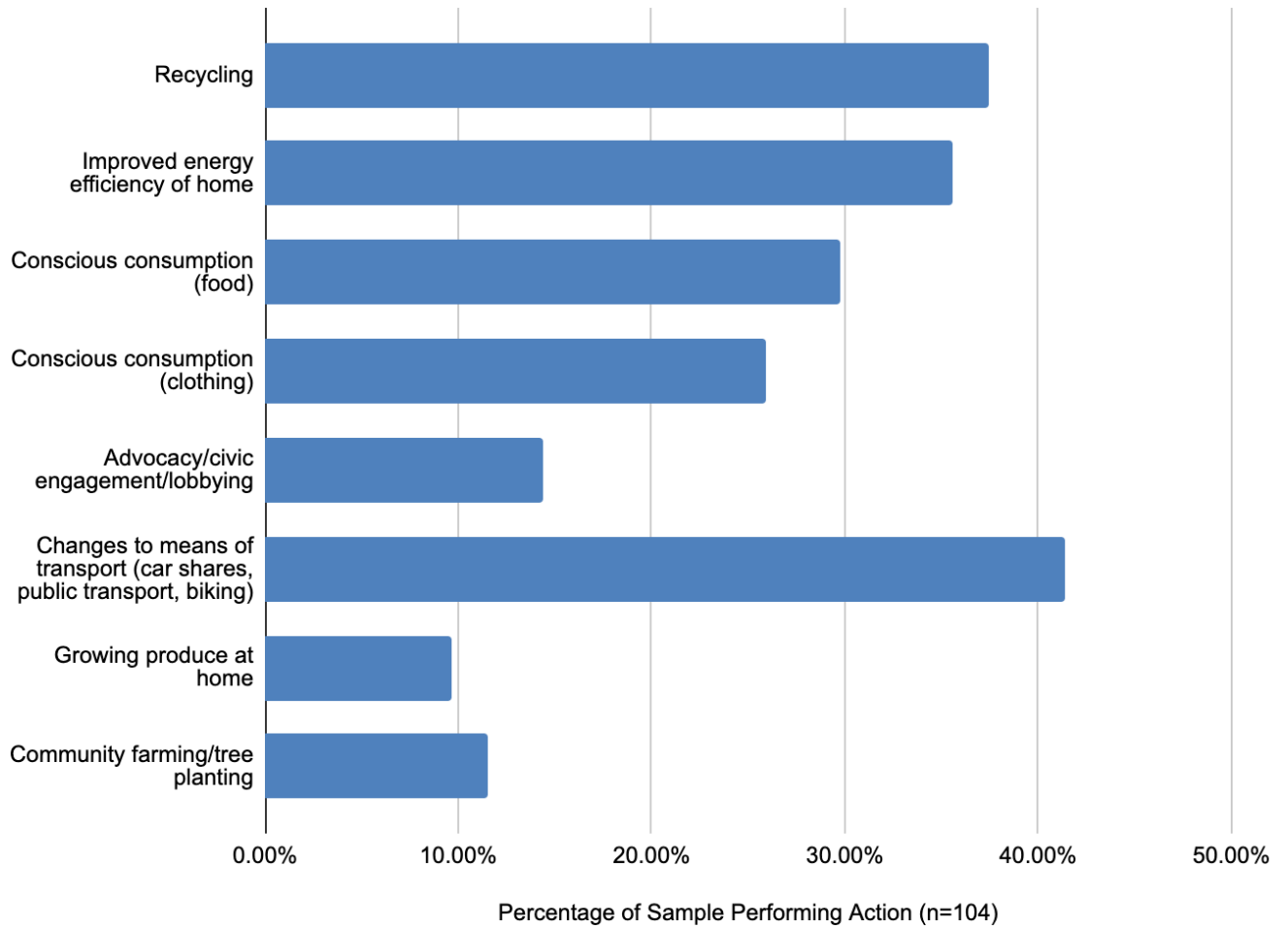
Appendix 4: Coding procedure for one positive and one negative article.

Climate positive article:

The Scotsman's article "Sustainable Scotland: New native trees and wildlife restoration to get under way near historic Bannockburn battlefield" provides a strong example of a well graded text, marked true for four of the five types of improved communication. It focussed on a small community near the city of Stirling and their large scale rewilding project, describing both the extent of woodland in the area/wider country prior to industrialisation, and the positive impacts of renewed forests for carbon-capture. The story was set against the backdrop of the regional history of this location. This story included the improved narrative for: Distance by focussing on a community, in the audiences country, working together to make concrete changes; Doom by emphasising the potential for renewal of what has been lost; Dissonance by highlighting both the positive environmental opportunities and the opportunity for tourism; and Identity by telling a story of collective action and by placing the story into the larger sweep of Scottish history, thereby rousing patriotic sentiments.

Climate negative article:

An example of an article which included many of the negative narratives was the Week's "Global stilling: where has all the wind gone?". This article describes the phenomena of 'global stilling' whereby winds over continental Europe and the UK have become less predictable and generally slower due to a growing balance between oceanic and mainland temperatures. The article claims this will lower the energy production of wind farms making them less reliable. In terms of climate narratives, the article uses; Distance's pro-environment narrative, focussing on technical details and predominantly remaining in the realm of nature; Doom's pro-environment narrative by painting a catastrophic vision of the future, and Doom's anti-environment narrative by building fear of solutions; Dissonance's

anti-environment narrative by heavily emphasising the scientific uncertainty around future weather patterns, making solutions less viable; and thereby using Denial's anti-environment narrative, emphasising how traditional energy sources will remain essential.