

Solutions Journalism vs. Solutions-Oriented: Intentionality of Canadian Alternative Media in Building Climate Solutions Frames

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Abstract

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Willow Beck

Alternative media fill a unique role in the Canadian media landscape, reaching marginalized and local communities, and as early adopters of innovative journalism practices such as solutions journalism. Solutions journalism can be an effective tool to combat audience fatigue with problem-oriented news. This is especially relevant for issues like climate change, which often receives “doom and gloom” coverage. This study aims to understand how alternative media in Canada are using solutions journalism to cover climate change and other environmental stories, via an explanatory sequential mixed-methods research design. A content analysis of all climate change and other environmental stories published by six Canadian alternative media outlets in 2022 was conducted to determine the proportion of articles using solutions journalism, and the types of solutions included. This was followed by interviews with authors of selected solutions journalism articles to further understand the frame-building process of solutions journalism. Interviews were analyzed using thematic analysis. It was found that 38% of climate and environmental articles used some degree of solutions-oriented reporting, though only 12% were fully solutions journalism. This was further explained by interview results, which identified internal and external constraints to implementing solutions journalism. Though not all journalists recalled intentionally applying a solutions journalism framework, solutions-oriented reporting is prioritized in alternative media newsrooms, is perceived as beneficial to audiences and engagement, and is made easier through newsroom support.

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I Chapter 1: Introduction

Action on the problem of climate change has become exceedingly necessary. The climate has already warmed by approximately one degree Celsius above pre-industrial levels and is on course to exceed one and a half degrees, resulting in more extreme and frequent weather events with social, economic, political, cultural, and ecological implications (Intergovernmental Panel on Climate Change [IPCC], 2022). Canada's economy is closely tied to natural resource extraction and the country's climate warms at twice the global rate (Bush & Lemmen, 2019). Canadians are already feeling the impacts of climate change. In 2022, the first 10 months averaged a degree warmer than normal, making it the 18th consecutive year of above-average temperatures, and aggregated losses due to major weather events are estimated at \$3 billion (Environment and Climate Change Canada, 2022). Canadians will increasingly need to respond to the impacts of climate change and make changes to mitigate climate change as the climate continues to warm. This means that accurate and engaging climate change reporting is critical to the Canadian public interest, but also to the world.

Although the salience of climate change grew threefold between 1988-1998 and 1999-2007 in Canadian media based on annual averages of climate change articles at two mainstream outlets (Achong & Dodds, 2012), and by nearly 16% globally from 1996-2010 (Schmidt et al., 2013), in the last two decades trends have been inconsistent with coverage tending to peak around significant events like the Paris Agreement and other Conferences of Parties (COPs). The average level of attention to climate change by Canadian media is more than half a percent of all articles in each month (Hase et al., 2021). This coverage, while increasing in scientific accuracy (McAllister et al., 2021), has largely remained abstract and lacking in nuance and context that connects climate change to the everyday lives of the public (Stoddart et al., 2016), and thus media coverage of climate change in Canada has not translated into meaningful policy action (Stoddart et al. 2017).

While climate change has become a growing threat to the everyday lives of Canadians, public trust in media and institutions is at a low, and audiences are growing disillusioned with problem-oriented news (Reuters Institute, 2022). Audience disillusionment has led to decreased engagement, compounded by the rise of the internet, resulting in a crisis in the business of journalism as outlets scramble to find new funding models and attempt new journalistic practices that will attract audiences (Picard, 2016). Decreased trust in media and the crisis in journalism has also coincided with a decrease in local news coverage by mainstream media in Canada (Reuters Institute, 2022; Lindren & Corbett, 2021). This has created a vacuum of coverage that alternative media have filled to serve the interests of communities marginalized or neglected by mainstream media. This is important to climate change reporting because making local connections to climate increases audience engagement (Scannell & Gifford, 2013).

By speaking to a more localized or niche audience (although the nature of online news means these outlets are not necessarily limited by geographic borders) and using its inherent flexibility to implement new journalistic practices, alternative media can address climate change and environmental stories with nuance and context using innovative approaches. One of the tools alternative media in Canada can use to empower their audiences and ensure accurate and robust reporting in their communities is solutions journalism, which has emerged as a way to address audience disillusionment and engage them by providing more context to stories and a more accurate reflection of the world by including potential solutions to problems rather than just focusing on problems (Lough & McIntyre, 2021a).

Most climate change coverage has also largely focused on the problem, which has been important in helping audiences understand the issue and its causes (Leiserowitz et al., 2022), but it is only one part of the story. Climate change is solvable, and audiences are eager for solutions, with 79% of people indicating that they think reporting on solutions is essential or important (Solutions Journalism Network, 2021). A public that is uninformed about how climate change impacts them, and how they can respond to those impacts, does not have the information necessary to make informed decisions on actions they should be taking to both adapt to impacts and reduce emissions on an individual, community, and systemic level.

1.1 Climate Change Reporting Globally and in Canada

The media ecosystem around climate journalism has changed as the crisis in the business of journalism has developed in recent years, with print media declining and online and social media gaining more importance (Schäfer & Painter, 2021). Climate change reporting was mitigation-focused in the 1980s but has since been inconsistent (Swain, 2012). Earlier studies in global climate change coverage indicate that issue attention has increased from 0.2% of total global coverage in the 1990s to 0.62% of all coverage by 2009, with considerable fluctuations throughout that period (Schmidt et al., 2013). This fluctuating trend has largely remained consistent in recent years as global crises compete for coverage, most recently and notably exemplified by an 80% decrease in climate change content sharing on social media during the spring of 2020 when COVID-19 dominated the news cycle (Spisak et al., 2022). Global coverage of climate change seems to have remained relatively steady since 2009, with 0.53% of all articles in a given month focusing on climate change in a study from 2006 to 2018 (Hase et al., 2021) and has shifted from primarily covering science to increasingly including solutions (Swain, 2012).

The role that journalists play in climate change coverage is also important. Globally, there has been a normative role shift for journalists from “gatekeepers” to “curators,” which has been utilized by climate change journalists to report on climate solutions in a specified manner for their audience that may help them make informed decisions (Borth et al., 2022). When looking at how journalists covered the 2019 heatwaves in Europe, Strauss et al. (2022) found that journalists view their role as educators rather than advocates, and newsrooms emphasized making a link between the heatwaves and climate change, without the inclusion of climate deniers. While elite sources are still important, the diversity in sources included in climate change coverage has expanded to include multiple stakeholders, rather than primarily scientists, which has also corresponded to a rise of PR in climate journalism (Schäfer & Painter, 2021), and this is especially relevant to solutions reporting.

On a global scale, the framing of climate change by media varies based on the economic status, climate severity, and governance of each country (Vu et al., 2019). While the number of digital news media sites specializing in climate journalism has increased, specialist reporters are few, especially in the Global South (Schäfer & Painter, 2021). Although the Global North covers climate change more frequently, journalists in the Global South focus more on the social impacts of climate change (Hase et al., 2021). On the international level, coverage tends to skew towards the priorities of developed nations, leading to more stories about mitigation rather than adaptation, and an under-reporting of issues like equity and human rights (Gurwitt et al., 2017).

Canada’s relationship with the United States is a key contextual component to understanding how Canada participates in global environmental governance, in which it has been and continues to be a key player (Stoett, 2018). This close relationship is reflected in

media coverage of climate change with discussion on whether to limit emissions being included in 21% of US coverage and 18% of Canadian coverage, versus 37% of coverage in German media (Tschötschel et al., 2020). Climate change coverage differs between the US and Canada in that the issue is presented with more controversy in the US, with outlets in Germany and Canada emphasizing the political and scientific consensus on the impacts of climate change on humans (Tschötschel et al., 2020). Climate change coverage in Germany is more solutions-oriented than in Canada, but because Canada's coverage focuses less on the controversy between political actors, its coverage is more solutions-oriented than the US (Tschötschel et al., 2020).

In Canada, the media landscape is moulded by the government's role in media policy, the mix of public and corporate media conglomerates, regional differences due to the "two solitudes of Anglophone and Francophone communities," but also the political, social, and economic differences between the provinces (Skinner, 2012, p. 37). Anglophone outlets tend to have a more diverse, compartmentalized climate change coverage. In contrast, Francophone outlets have a narrower range of articles that provide more context and link climate change issues to other themes such as culture, politics, and the economy (Young & Dudas, 2012). While environmental agencies and activists like Greta Thunberg have been centred in media coverage across Canada, the parties most responsible for climate change—fossil fuel companies—have been largely left out of the conversation, shielding them from public scrutiny (Stoddart et al., 2017).

In line with global trends, there has been an overall growth in Canadian news coverage of climate change since the 1990s, but coverage has again been fragmented into isolated peaks over time rather than continuous growth (Davidsen & Graham, 2014; Hase et al., 2021). These peaks seem to be driven by national and international political events like COPs, instead of policy changes or ecological stories (Stoddart et al., 2016). At both the regional and national scales in Canada, climate change is reported as a global problem, and while scientifically accurate coverage of climate change has improved over the last 15 years (McAllister et al., 2021) there is a lack of connections to the daily lives of readers (Achong & Dodds, 2012; Hase et al., 2021).

Climate change is an abstract, complex issue with global impacts that are experienced at the local level in many indirect ways (Schlosberg, 2011). Locally framed messaging around climate change is important as audiences indicate higher engagement with these types of stories, rather than with globally framed stories (Scannell & Gifford, 2013), with some variability depending on the audience (those with a stronger place attachment show higher engagement; women tend to engage more than men.) In Canada, 66% of scientists and 64% of journalists are concerned about the disconnect between scientific findings and how climate change is explained to the public, and "that news outlets are not providing voters with enough information about climate change for them to make informed decisions" (Holman et al., 2021).

In terms of who speaks for the climate in Canada, reporters must rely on sources to learn about an issue and accurately report it to their audience, and the voices that are chosen are legitimized in the public sphere. This goes beyond the issue of creating a false balance by portraying contrarian voices as one side of a problem when they are actually outliers, a practice that is more common in the United States than in Canada (Tschötschel et al., 2020). The lens applied to a story dictates the sources chosen, determining whether an issue like climate change will be covered from a scientific or environmental point of view, or through a political or economic lens. A diversity of sources indicates that more nuance is being applied to an issue to provide more accurate reporting. Young and Dugas (2011) found that the number of sources speaking

on climate issues has declined across all source types (including environmental groups, scientists, politicians, and business representatives) when examining two national newspapers (the *Globe and Mail* and the *National Post*). This has resulted in an overall “banalization” of climate change with more stories losing complexity and context (Young & Dugas, 2011). This banalization may be explained further by a lack of support and resources journalists receive for climate change coverage, with 32% of journalists expressing frustrations on the matter (Holman et al., 2021).

It was also found that members of the public (especially those that are marginalized) do not have a direct role in the discourse around climate change, with a continued reliance on elite sources (Schäfer & Painter, 2020). This suggests that climate change remains framed as an elitist issue exclusive to scientists, activists, and politicians, and not the everyday citizens whose lives are affected by the impacts of climate change. According to democratic participatory theory as a part of a normative theory of journalism, journalism should be used to “promote actively the political involvement of citizens” (Benson, 2008). A failure to make connections to the lives of everyday citizens is a failure of journalism to uphold its role in a free and democratic society by supporting an informed public. When citizens are not shown how climate change and policy impact their daily lives and are thus uninformed, they are unable to participate fully in a functioning democracy. With accurate climate change reporting that provides context to the everyday lives of citizens, the Canadian media can empower audiences to become politically involved in climate change issues.

1.2 Alternative Media and its Role in Canada

The democratic participatory theory suggests that the flexibility of alternative media makes it well suited to promote citizen involvement in politics (Benson, 2008). The definition of alternative media is fluid but can be distinguished from mainstream media by “the objectives they seek, the content they produce, the subjects involved, and the production or regulatory practices in which they engage” (Uzelman, 2012, p. 65). For the purposes of this paper, alternative media refers to independent media outlets that operate outside of the “big five” media conglomerates in Canada (Bell, Shaw, Telus, Rogers, and Quebecor) which accounted for 72.5% of the media economy in Canada in 2019 (Winseck, 2020), or the publicly funded CBC (although some outlets included in the present study rely on funding from the Local Journalism Initiative, which is a government-funded grant program).

Climate change journalism research in Canada has primarily focused on mainstream, national media coverage by newspapers such as the *Globe and Mail* and the *National Post* (Achong & Dodds, 2012; Callison & Tindall, 2017; Stoddart et al., 2016; Stoddart et al., 2017; Young & Dugas, 2011), and has occasionally looked at mainstream regional coverage (Achong & Dodds, 2012; Davidsen & Graham, 2014; King et al., 2019). There is a lack of research examining how smaller media outlets (either local or alternative media) contribute to climate change discourse in Canada. Further, there is a gap in research examining the journalistic methods that alternative media in Canada take in their climate change and other environmental coverage—specifically, whether they apply alternative journalisms such as a solutions journalism framework to these stories or adhere to more traditional methods of journalism.

Due to the ambiguous definition of alternative media, scholarly research on the subject is limited. Much of the scholarly research that does exist on alternative media focuses on why alternative media is practised, rather than what it does or how it is produced (Atton, 2008). Typologies have been introduced, such as the four alternative media approaches described by Bailey et al. (2008) in which alternative media can be distinguished by modes of participation of

community members in content production, as the opposite of mainstream media (large vs. small-scale, state-owned/commercial vs. independent, hierarchical vs. non-hierarchical, dominant discourse vs. non-dominant discourse), counter-hegemonic media as a third voice in society in addition to state and commercial media, or as methods to connect social movements and ideas, and connect the local and global. Fuchs (2010) further theorized that alternative media is critical media, connecting social theory to alternative media theory in that alternative media is the “communicative dimension of the counter-public sphere.”

Although alternative media can vary significantly in terms of the topics they cover and the audiences they serve, these outlets can be understood collectively through an analytical framework describing their structure, their modes of participation, and their values or even activism (Kozolanka et al., 2012, p. 15). Structurally, due to their smaller audiences, alternative media outlets are grassroots organizations that rely on a variety of organizational modes, resources, and revenue streams to operate successfully (Skinner, 2012, p. 41). Operating outside of the mainstream, some alternative media outlets are able to disrupt normative journalistic gatekeeping roles by establishing a participatory, horizontal flow of communication rather than a hierarchical one—though this is not always the case (Uzelman, 2012, p. 67). The access to participation often leads to audiences being viewed as citizens and even co-producers of news before they are seen as consumers, making alternative media outlets “inherently political” and community-centred by their role in “empowering communities according to their specific traditions, values, needs, and desires” through a collaborative flow of knowledge (Light, 2012, p. 145). Alternative media has further been defined by scholars such as Rodriguez (2000, p. 63) as a tool to empower citizens by “opening social spaces for dialogue and participation, breaking individuals’ isolation, encouraging creativity and imagination, redefining social languages and symbols, and demystifying the mass media.” Alternative media can build community by validating personal experiences through the give and take of expressing these experiences with others (Stephens, 2007, p. 14).

Alternative media can play an important role as a critic of mainstream media, acting as a check to keep mainstream media accountable to the public (Cushion et al., 2021). By providing a space for audiences to see themselves, and holding mainstream media powers to account, alternative media may be well situated to correct the declining trust in news media and resulting crisis in journalism.

Gurleyen and Hackett (2016) argue that the news media and governments that helped create the system they operate in has contributed to the crisis in journalism by “selecting and defining certain issues over others.” However, they ascertain that this crisis is not with journalism in itself but with the “associated institutional forms: the regime of objectivity.” Traditional practices of journalism in mainstream Western media have assumed a homogenous core of news values that has led to a normalized way of thinking about journalism, while also marginalizing voices in public discourse (Deuze & Witschge, 2018, p. 169). The reality is that the aggregation of views that make up the public sphere is influenced by societal power dynamics and class systems so that the opinions of those with power are more heavily represented—especially when the people making editorial decisions are also a part of the dominant class. The current public sphere is not the ideal that Habermas (1992) described in which a diversity of voices is included with equal opportunity, and so the public sphere is distorted (Crowther et al., 2016).

Society is complex and diverse, and news is often not an accurate reflection of this diversity. Journalists contour public narratives by choosing which stories are told and how to tell them, which often leads to the amplification of dominant narratives and voices—and therefore

the exclusion of marginalized and minority voices (Linnit, 2020). Society has multiple perspectives and multiple truths—not one unified public sphere—and so it requires multiple journalisms that recognize the shared history of all peoples.

To uphold a healthy public sphere, media in a liberal democracy like Canada need to inspire civic engagement by helping audiences “identify and respond to challenges in the social, physical, and political environment,” which environmental and climate journalism can help facilitate (Gurleyen & Hackett, 2016). Gurleyen and Hackett (2016) suggest that environmental communication (and by extension, environmental journalism) innately challenges notions of objectivity in the media by questioning the reliance on official sources that may be incentivized against implementing effective climate change policy and challenging “hegemonic cultural values” and “hegemonic institutions” that Western society must reckon with in response to climate change. These include capitalist values of consumption, reliance on carbon-emitting industries, and the logic of endless growth. Environmental journalism can help redefine how objectivity is understood by acting as “an early warning system and a facilitator of dialogue and action,” providing context and solutions to environmental issues, and simultaneously fulfilling the role of informing and inspiring civically engaged citizens (Gurleyen & Hackett, 2016).

Audiences are encouraged by alternative media to participate in civic life through their “local orientation and strong community connection,” which are communicated to audiences by choosing stories that represent audience realities that are not always reflected in the mainstream (Gurleyen & Hackett, 2016). The flexible practices of alternative media also give reporters the space to include a wider diversity of frames, rather than being limited by those accepted by the status quo that mainstream media maintains. A frame-building study by Moernaut et al. (2018) found that mainstream media in Belgium apply anthropocentric subframes to climate coverage while alternative media outlets applied a mix of anthropocentric and biocentric subframes. The study suggested that because alternative media operate outside of mainstream norms, reporters have the flexibility to introduce audiences to a greater variety of perspectives, and can more readily apply other types of journalism, such as solutions journalism. By applying solutions journalism practices and frames, alternative media can play an important role in climate change coverage in Canada by providing contextual climate news to local and marginalized communities (Howarth & Anderson, 2019), and inspiring public mobilization on climate and environmental issues (Gurleyen & Hackett, 2016).

1.3 The Role of Solutions Journalism in Canada

While journalists are still defined and bounded by the ideas that link them—truth-seeking, accuracy, independence, transparency, and accountability—the internet age has democratized access to information and disrupted the traditional gatekeeping relationship journalists have with the public, leading to the innovation of new journalistic practices such as solutions journalism (Lowe & Ferguson, 2021). Alternative media in Canada have been leaders in implementing solutions journalism practices to their stories (Daoust-Boisvert et al., 2023). Daoust-Boisvert et al.'s (2023) research on solutions journalism in Canada found that alternative media with a solutions journalism mandate tend to play the role of what they have coined as a “Critical Community Partner.” Outlets in this category are defined by a mission to serve their community and stand out from other outlets by connecting with and empowering their audiences. There is also an aspect of being critical of mainstream media, and a commitment to journalism’s core values, especially transparency. Alternative media in Canada use solutions journalism as “both a tool to achieve their aims and a way of announcing their values and intentions” (Daoust-Boisvert et al., 2023). Lowe and Ferguson (2021) describe solutions journalism as a practice that “requires a move from the individual to the relational, relies on a population of contributors

outside the boundaries of the organization, assumes societies are in a constant state of transition and believes in the viability of multiple pathways to knowledge.” Solutions journalism rejects normative journalism practice by emphasizing the context of a story (the how and why), rather than focusing on who, what, where, and when (Hopkinson & Dahmen, 2021, p. 173).

Solutions journalism is debated as a branch of constructive journalism, emerging from civic journalism practices that focused on audience engagement and public debate in the mid-1990s to the mid-2000s (Hopkinson & Dahmen, 2021, p. 12). Constructive journalism has been defined as “an emerging form of journalism that involves applying positive psychology techniques to news processes and production in an effort to create productive and engaging coverage while holding true to journalism’s core functions” (McIntyre & Gyldensted, 2018, p. 23). Solutions journalism is embedded in the same values, with a narrower focus on solutions to social problems, whereas constructive journalism may not necessarily include a solution (McIntyre, 2015).

As solutions journalism fits under the constructive journalism umbrella, the two terms are often used interchangeably, with a distinction that appears to be geographical—solutions journalism in the U.S. and constructive journalism in Europe (Lough & McIntyre, 2021a). In the U.S., the Solutions Journalism Network (SJN) was established in 2013 and provides a framework for solutions reporting that states reporting should go beyond the response. Solutions journalism should include whether the response is effective or not, provide evidence-based results, and note any limitations (Solution Journalism Network, 2022). The Constructive Institute in Europe has a similar definition, describing the pillars of its mission as journalism that focuses on solutions, covers nuance, and promotes democratic conversation (Constructive Institute, 2022).

Although Canadian and American media are similar due to the close economic and cultural ties between the two countries, there are journalistic differences that also impact the practice of solutions-oriented reporting. While solutions-oriented reporting has been practised in the United States since at least the 1990s (Benesch, 1998), and solutions journalism has largely been defined in North America by the US-based Solutions Journalism Network, reporting in the United States tends to be more focused on the controversy between political actors, and therefore less solutions-oriented than in Canada (Tschötschel et al., 2020). However, there is a lack of academic research into the practice of solutions journalism in Canada. A systematic review of solutions journalism research found that 41% of academic articles focused on the United States, while only 3% focused on Canada (Lough & McIntyre, 2021a).

In Canada, the practice of solutions journalism has been described as “marginal but emerging” as preliminary results have found 17 Canadian media outlets with solutions journalism initiatives (Daoust-Boisvert & Berard, 2020). Daoust-Boisvert & Berard (2020) found the earliest occurrence of a media outlet claiming to practise solutions journalism in Canada was *The Tyee*, founded in 2003 and explicitly stating in their mission a commitment to reporting on solutions in 2005 (Daoust-Boisvert et al., 2023). Though this is well before the US-based Solutions Journalism Network was founded in 2013, most current solutions journalism initiatives in Canada developed after the Solutions Journalism Network was formed (Daoust-Boisvert et al., 2023).

The frames that dominate the narrative around climate change in Canadian media have largely been focused on national policy, followed by energy and economics (Callison & Tindall, 2017). Most solutions-oriented news stories (not necessarily those practising solutions journalism) have focused on technological and economic solutions instead of diving into a deeper discussion about structural change (Davidsen & Graham, 2014). Solutions-oriented

stories differ from solutions journalism, as they may focus on a solution to a problem but do not fit all the aspects of solutions journalism as defined by the Solutions Journalism Network (2022): 1) the response to a problem is the focus of the story, 2) insights that may be more broadly applicable are included, 3) evidence of its efficacy to solve the problem is included, and 4) limitations are stated.

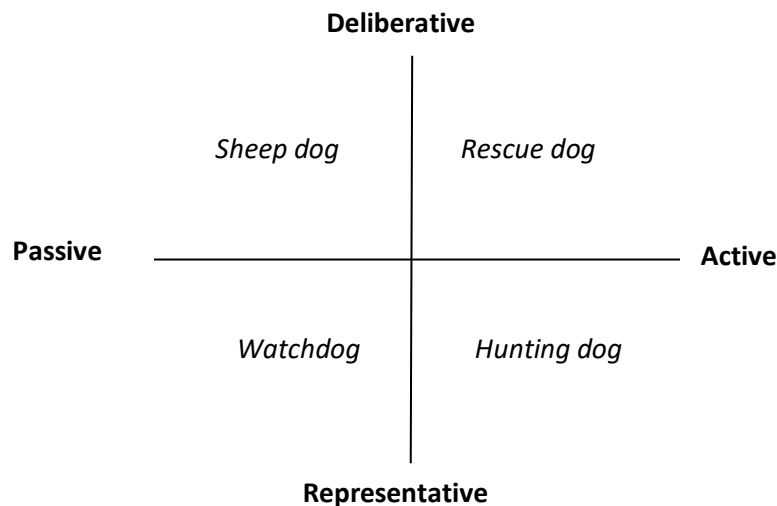
Avoiding the oversimplification of news, solutions journalism aims to portray a more accurate representation of the world, which leads to a more trusting and engaged audience (Hopkinson & Dahmen, 2021, p. 174–175; Lough & McIntyre, 2021b). As an “active and participatory form of journalism” (Lough & McIntyre, 2021a), solutions journalism is a method that can challenge the normative standards of journalism while increasing trust and empowering audiences. Solutions journalism has grown in popularity due to the “dissatisfaction by journalists and audiences of problem-oriented frames for covering community issues” (Hopkinson & Dahmen, 2021, p. 23). Solutions journalism does not mean avoiding conflict—instead, it centres solutions in the story to combat the compassion fatigue that audiences experience when subjected to a constant barrage of conflict-centred media while adhering to the central tenets of journalism by implementing fair and balanced coverage of a problem by including “successes and failures so that audiences develop an accurate view of the world” (Lough & McIntyre, 2021a). Solutions journalism is a method that goes beyond positive news through rigorous reporting that focuses on how a solution is being implemented, providing empirical data that describes the effectiveness of the solution and being comprehensive about the limitations of the solution (Lough & McIntyre, 2021a). The solution must be tangible and replicable to fulfill its purpose of causing a change that betters society.

Proponents of solutions journalism are careful to emphasize the difference between solutions journalism and advocacy, as solutions are covered objectively and are not endorsed by the journalist (Aitamurto & Varma, 2018). Solutions journalism studies have focused on the effects of the practice by measuring audience outcomes, but there is a lack of research testing theory or developing a conceptual framework for solutions journalism, with most studies relying on positive psychology, framing, social responsibility theory, and normative roles (Lough & McIntyre, 2021a).

To further conceptualize solutions journalism theory, Lough & McIntyre (2021a) suggest using Bro’s (2019) Journalistic Compass framework (Figure 1), which situates journalism on a two-dimensional scale between passive (journalists as detached observers) and active (journalists shape the news and have a participatory role) journalism on one scale, intersecting with a scale between a deliberative (relying on private citizens) and representative (relying on authoritative sources) approach.

Figure 1

Journalistic Compass Framework of Normative Dichotomies in News Reporting (Bro, 2019)



This framework can situate solutions journalism within a broader context, as solutions and constructive journalism fall on the active side of the scale, moving between Rescue Dog and Hunting Dog roles. This aligns with the theoretical connections of positive psychology, framing, social responsibility, and normative roles (Lough & McIntyre, 2021a) as all these theories also fall on the active and deliberative side of the scale.

Journalists using solutions journalism have been found to use “interventionist, facilitator, and civic-oriented roles in their coverage” but have underplayed the role of a watch dog (Li, 2021). There have been indications that solutions journalism increases positive sentiments and engagement from audiences (Lough & McIntyre, 2021b), and can positively impact news trust and “story-specific beliefs” (Thier et al., 2021). A study by Zhao et al. (2022) indicated that solutions journalism may be useful in increasing feelings of control and self-efficacy in audiences, as well as improving the audience’s critical awareness, and empowering behaviours such as community involvement. This suggests that solutions journalism may be a good tool to promote civic engagement, but more research is needed to establish the impact on audience behaviours, rather than the immediate feelings that follow reading a solutions journalism piece. Positive psychology theorizes that positive emotions lead to positive behaviours, but research has not established this yet when applied to solutions journalism.

While solutions journalism has not yet been proven to change behaviour (McIntyre, 2019) when communities lack information, they remain apathetic and passive (Kozolanko et al., 2012, p. 76). King et al. (2019) found that less than half of articles in Canada discussing the negative effects of climate change on human health also included climate change solutions, suggesting this may contribute to public inaction to drive climate policy. Solutions journalism can empower audiences to make choices about the most effective ways their communities can respond to climate change since most people don’t read peer-reviewed articles. Instead, people look to the media to make science and policy connections to their daily lives, making the media an essential component of shaping policy around climate change (McNatt et al., 2019). Showing communities what can be done about a problem provides an avenue for action, which is supported by the

postmodern idea of making the personal political (Benson, 2008). Hanitzsch and Vos (2018) further expanded on this idea by arguing for the multifaceted and increasingly influential role journalists have in shaping culture and the identities of the individuals within it by connecting their audience to their communities and providing a sense of belonging to a shared consciousness and identity no longer defined by traditional institutions.

By applying solutions journalism to climate change and environmental stories, alternative media can contextualize the impacts and examine the potential mitigation and adaptation strategies communities must consider as the earth continues to heat up. However, a commitment to journalism's core values remains key when applying solutions journalism to climate and environmental stories. McCann (2019) outlines key takeaways reporters should remember when taking this approach, including giving people agency, not promoting "one-size fits all solutions," taking all causal factors into account, not overstating the role of climate change, focusing on an approach rather than an organization to avoid activism, starting with local examples before linking to a broader trend and using data. Edwards (2022) advises caution when using solutions journalism to cover the climate crisis and to consider whether the solution is a response to a symptom of a problem or if it is directly addressing a systemic issue, especially with stories from the developing world, as people there are already being impacted by negative climate news directly and therefore cannot afford to look away.

1.4 Purpose of Present Study

This study examines solutions journalism articles from alternative media outlets to form a more comprehensive picture of the ways that solutions journalism is taken up by Canadian media, specifically in the context of climate and environmental reporting. As Canada is a country with an economy built around natural resource extraction, one might expect the types of solutions included in climate and environmental reporting to be centred around economic and technological solutions rather than conservation or social transformation.

Though solutions journalism was first conceptualized in the United States, Canadian media differs from the United States. There is more government funding available to support the news media, especially after Bill C-30 was enacted in June 2021 to allow for Canadian media designated as eligible under the Qualified Canadian Journalism Organization (QCJO) to receive tax credits and payroll subsidies. This financial assistance may encourage media outlets to take more risks and try new types of journalistic practices, resulting in more willingness from media editors and managers to support the uptake of solutions journalism in their newsrooms.

While it has been determined that solutions journalism is an emerging practice in Canada (Daoust-Boisvert et al., 2023), with alternative media outlets leading the charge, data is lacking about how these outlets are specifically applying solutions journalism methods to their stories. Research is needed beyond anecdotal evidence to determine if solutions journalism is effective, and how the frame-building process occurs in newsrooms in the context of solutions journalism.

Building on Daoust-Boisvert et al.'s (2023) research, this study proposes to answer the following research question:

RQ1: How do Canadian online alternative media outlets apply solutions journalism to climate change and environmental reporting?

Using an explanatory sequential research design, quantitative data was collected first and then used to further inform and explain in-depth qualitative data. This research design is

necessary to answer the research question because quantitative data alone is insufficient. There is a need to understand the links between news content and the production process to create a fuller picture of news framing because “the outcomes of the frame-building process are the frames manifest in the text” (de Vreese, 2005). The quantitative data provides a general picture of what is happening in alternative media coverage of climate and environmental stories, how they are reported, and how solutions-oriented news frames end up in climate and environmental articles. Qualitative data is necessary to give more detail about the news-making and frame-building process—how and why alternative media publish these stories.

In the first stage of this study, a content analysis of six web-based, English alternative media outlets in Canada with a solutions journalism mandate was conducted. This corpus includes *The Tyee*, *The Discourse*, *The Sprawl*, *The Narwhal*, *The National Observer*, and *Indiginews*. These outlets were chosen because their coverage is ongoing, they publish online, they are Anglophone alternative media, and they have included a solutions journalism initiative in their mission or toolkit, and thus were expected to be practising some amount of solutions journalism.

All climate and environmental stories published in 2022 were collected from each outlet to build a corpus that analyzed the proportion of stories implementing solutions journalism. The proportion of stories analyzed provides an understanding of how often alternative media use solutions journalism in their climate and environmental reporting versus other types of journalism, and whether journalists perceive solutions journalism to be effective in communicating a climate or environmental story. Climate and environmental stories that were determined to be using solutions journalism were further analyzed for the types of solutions discussed, including whether the solution is individual or systemic in scope if it was an example of mitigation (a solution to reduce emissions) or adaptation (a solution in response to the impacts of climate change), and what other issues the story is linked to through content analysis.

In the second stage of this study, results from the content analysis guided questions for qualitative interviews with reporters of selected articles from each of the included outlets. The articles selected were from the pool of stories that were identified to be using solutions journalism in the content analysis from the first stage of the study. Using case-reconstruction, open-ended questions rooted in framing theory asked participants what factors in the frame-building process lead to different news frames in climate reporting, to help explain the content analysis results. A thematic analysis was applied to the interviews to situate the data within de Vreese’s (2005) process model of framing and Shoemaker and Reese’s (1996) hierarchy of influences model. By examining the cognitive frames of journalists, who are perceived as “the central link in the news production chain” (Boesman et al., 2017), as well as reconstructing the news-making process to understand the other internal (editorial policies) and external factors at play (sources), links can be made to the news frames present in the content analysis.

Climate change is an overarching and growing issue with impacts that society is currently facing and will be increasingly facing in the coming decades. Traditional news tends to focus on the problem, and this negative framing is leading to audience disengagement, which is why the framing of climate stories matters. Solutions journalism is an innovative journalistic practice that can be used to engage audiences and inspire action, but research beyond anecdotal evidence to determine the effectiveness of solutions journalism, and how the frame-building process occurs in the context of solutions journalism is needed. Alternative media are structured in a way that allows for more flexible journalism practices and have been found to be leaders in implementing solutions journalism in Canada based on analysis of their missions and mandates, but not yet of their content.

This study aims to inform Canadian alternative media managers, editors, and reporters about how they can cover climate and environmental stories, and determine what benefits and roadblocks exist in implementing solutions journalism in this context. Mainstream media managers may also look to the results of this study and implement strategies in their newsrooms that alternative media have tested. Scholars can use this research to better understand the frame-building process in Canadian alternative media and how that connects to solutions journalism news framing in the context of climate change and environmental stories.

Chapter 2: Theoretical Framework

The theoretical foundations of this study are based on framing theory. Framing theory was first introduced as a concept by Goffman (1974), in which he asserted that people interpret data from the outside world through a primary framework to understand their experiences in a wider social context. However, Goffman's definition of framing theory is related to how individuals behave in day-to-day situations, and not how frames are used by the media (D'Angelo, 2019). Entman (1993) was a central contributor to applying framing theory to the media, describing framing in news and journalism as a "fractured paradigm" without a unified theory, leading to scholarly research studying framing "from multiple paradigms—cognitive, constructionist, and critical" (D'Angelo, 2002). Theory integration of news framing is generally based on either how "audience frames shape political preferences or how journalist frames shape issue agendas" (D'Angelo, 2019).

Framing theory is related to agenda-setting theory, in that both theories describe how the media directs public attention, thus setting an agenda. But while agenda-setting theory explains the salience of an issue, telling audiences what is relevant now, framing explains how certain aspects of an issue are picked for reporting and tell the audience how to think about and interpret it (Weaver, 2007). Agenda setting theory was developed by McCombs and Shaw (1972) when they found that issues perceived as important by the public are correlated with what issues are covered by the media. This perceived importance is referred to as object salience, and it is assumed that the volume of news coverage an object receives increases its salience. Theory around agenda-setting has further been expanded to include second-level agenda setting that examines the influence of attribute salience: the characteristics describing news objects and the tone of those attributes, rather than the influence of issue salience in first-level agenda setting (McCombs et al., 1997). Scholars debate whether framing theory falls under second-level agenda theory (McCombs & Ghanem, 2001), or whether the two are distinct as they operate through different cognitive processes and have different outcomes, with agenda-setting relating more to perceptions of issue importance and framing relating to interpretations of news issues (Scheufele, 2000).

Entman (1993) further described framing as selecting "some aspects of a perceived reality and make them more salient in a communicating text, in such a way as to promote a particular problem definition, causal interpretation, moral evaluation, and/or treatment recommendation for the item described." When journalists are covering a news event, they decide what to include and what to exclude, meaning that there are many ways that an event can be framed. While salience has typically been measured as the amount of coverage an issue receives over time, Chyi and McCombs (2004) use the theoretical link between agenda setting and framing by looking at how specific attributes about an event are used by the media to maintain salience over time through a practice called "frame changing." In this sense, frames are considered attributes of an object, and thus news can be framed in various ways by focusing on differing attributes. This can be measured by thinking about media frames in the dimensions of space and time, space referring to the scope of coverage ranging from individual to international, and time referring to a news article focusing on a present event versus the past by providing historical details or the future by making predictions. With this measurement scheme, framing can be examined as "a process in journalistic practice" (Chyi & McCombs, 2004). Chyi and McCombs (2004) argue that by changing the frame through space and time, media use this practice as a narrative strategy to maintain salience. This can be applied to maintaining climate change salience through frame-changing such as moving from a problem-focused framing to a solutions-framing.

De Vreese (2005) argued there was a lack of consensus in the literature about the definition of framing and how to identify frames in the news, and proposed defining framing as a process that includes “production, content, and media use perspectives” by building on Entman’s (1993) description of frames being located in “the communicator, the text, the receiver, and the culture.” This resulted in the construction of a process model of framing, in which framing is separated into frame-building—the internal and external factors in the newsroom that determine how journalists and news organizations construct news frames—and frame-setting, which is “the interaction between media frames and individuals’ prior knowledge and predispositions,” or the ways in which news frames have framing effects on the audiences by impacting their “learning, interpretation, and evaluation of events.” As the outcomes of frame-building are the news frames that manifest in the text, the goals of the present study are to focus on the frame-building aspect of alternative media when the result is a solutions-oriented news frame.

The internal constraints described by de Vreese (2005) build upon Shoemaker and Reese’s (1996) hierarchy of influence model, in which the factors that shape news content are located on a continuum from the individual level to the systemic level. These include influences from the individual journalist (their specific background and characteristics, personal values and beliefs, and professional roles and ethics), influences at the routine level that are “embedded in the immediate environment of their work” (news values, audience appeal, external sources), organizational influences (policies and economic priorities), the socio-institutional or extra-medial level in which media as an institution interacts with other institutions such as politics and economics, and the ideological or social system level in which all of “the levels work together to produce a predictable ideological result”. Reese (2019) asserts that the direction of influence between the levels is unclear and that in a media landscape that has been disrupted by technology, the importance of interactivity has grown, as “the audience is no longer a passive recipient but an active agent in the journalistic process.” Furthermore, especially as the traditional boundaries around journalism have faded resulting a more networked practice, Reese and Shoemaker (2016) make a distinction between structure and agency. That is, on the individual level journalists make decisions based on their cognitive attributes but are still operating under the constraints of the structures around them. The present study is located at the individual, routine, organizational, and socio-institutional/extra-medial levels while considering how the levels interact based on self-reports from journalists. While the study can only directly measure the individual and routine levels as these are the levels of influence journalists are directly connected to, they can also speak to how they are impacted by organizational and extra-medial (such as sources and audiences) level of influences.

McIntyre (2019) suggests that “solutions journalism can be conceptualized in part through framing theory” due to the active role a journalist has when framing a story—in the case of solutions journalism, framing the story as a problem with solutions, where the solution is highlighted. Framing theory suggests that the way something is presented to the audience will influence the choices people make about how to process that information (Entman, 1993). By applying a solutions frame to climate and environmental stories, the media can influence people to think about climate change and the environment as solvable problems rather than abstract concepts outside of their control and can invoke positive emotions in audiences that lead to increased intentions to act on an issue (Curry & Hammonds, 2014). Moser and Dilling (2007) discuss how climate change has largely been viewed through scientific framing and Gurleyen and Hackett (2016) point to the need for localized framing to contextualize the crisis of climate change. Applying localized frames to climate coverage allows the content to resonate with audiences more strongly as it is specific to local values. Pairing localized and solutions framing

to climate change reporting may help the audience resonate more with the issue and increase their intentions to act on it.

Though further solutions journalism research is needed to verify that solutions journalism leads to action, audiences who read a solutions story have been shown to have more positive attitudes after reading the story—both about the news story and the potential to solve the problem—than those who read stories without a solution (McIntyre, 2019). Readers did not feel more confident in their own ability to contribute to the solution or change their behaviour, however.

The idea of seeking to produce positive emotions in audiences is founded in positive psychology. Positive psychology was developed in the early 1990s to emphasize an individual's strengths rather than weaknesses to overcome difficult emotions (Seligman & Csikszentmihalyi, 2000). Theories of positive psychology were first applied to journalism by Gyldensted (2011), contributing to the development of solutions journalism. For example, providing audiences with “productive ways to engage and act on what they read” (McIntyre, 2015) is a positive psychology technique.

McIntyre and Gyldensted (2018) further outline techniques drawing on positive psychology theories that can be applied to constructive (and by extension, solutions) journalism. This includes an argument for more balanced reporting by applying the positive psychology model of well-being to news reporting, rather than focusing reporting on the disease model of the world. For example, this can be done in the reporter's interview process by carefully selecting questions that won't bias toward negatively charged responses. McIntyre and Gyldensted (2018) also recognize social responsibility theory, which describes journalists' responsibility to consider society's best interest, as supportive of including solutions to help audiences make decisions.

Bornstein and Rosenberg (2016) suggest that declining trust in news media requires journalism to reevaluate its methods, instead of perpetuating a negative feedback loop that paralyzes collective action. Alternative media's flexibility in adhering to traditional journalistic norms, experience in adopting a variety of reporting and operational practices, and propensity to serve the community suggest that utilizing solutions journalism may be a way for alternative media to sustain their operations in a precarious media landscape. In the context of climate change reporting, solutions journalism can utilize positive psychology to invoke positive emotions in audiences that may lead to behaviour changes. By framing an overwhelming, multi-faceted problem like climate change through the lens of solutions, journalists can play a role in shaping the political will for action.

Chapter 3: Methodology

3.1 Research Design

This study builds on an explanatory sequential mixed-methods approach to understand how solutions news frames manifest in the text through content analysis and an examination of the frame-building process via interviews with alternative media reporters. The characteristics of mixed methods research are to combine methods, philosophy, and research design to collect and analyze both qualitative and quantitative data and mix the two forms of data either by merging them, embedding one within another, or having one to build on the other (Creswell & Clark, 2017). This type of research is used when one data source is insufficient, and the results must be explained by another data type to fully answer the research question. Collecting both quantitative and qualitative data allows the strengths of each data type to offset the weaknesses of the other (quantitative can be too general to apply to individuals, and qualitative can be too specific to apply to a larger population). In an explanatory sequential mixed methods design, the research includes two distinct interactive phases in which quantitative data is collected first, informing the qualitative data collection, followed by a sequential analysis and mixing of the two forms of data.

The phases of the present study are depicted in Figure 2. In Phase 1, a corpus was created through the collection of all in-house articles from six Canadian alternative media outlets. A Boolean query was then conducted to identify the proportion of stories that could be identified as climate or environmental stories. Once the proportion of environmental and climate stories was determined, a subsample was used for the content analysis to determine the proportion of stories using solution-oriented elements, and the types of solutions these solutions-oriented stories used. After the stories using solutions-oriented elements had been identified, it was necessary to conduct interviews with the reporters of those stories to get a better idea of how and why the identified solutions news frames manifested in the text.

In Phase 2, six stories that received a high score in “solution-ness” were purposely selected to include reporters from as many of the alternative media outlets included in the study as possible. Ultimately, only five of the six outlets were represented, with two reporters from one outlet for a total of six interviews. Interviews were conducted using a case reconstruction method, to better understand the frame-building process. Reich and Barnoy (2020) describe news-making reconstructions to retrospectively record how news is made using the testimony of “key newsmakers.” This methodology is helpful in determining aspects of news making that cannot be observed from the published output alone, such as how “different sources, technologies, and news practices” impact the news-making process, and the “judgments and evaluations” reporters, editors, and managers make before publishing (Reich and Barnoy, 2020).

The goal of these interviews is to develop a better understanding of the decisions and motivations behind solutions journalism outputs in the context of reporting on climate and the environment. This includes a better understanding of where the solutions being reported on come from and the decision-making process leading up to a solutions article being published. Case reconstruction interviews help “shift the emphasis from the interpretations and observations of the researcher to the perspective of the journalists” (Boesman et al., 2015).

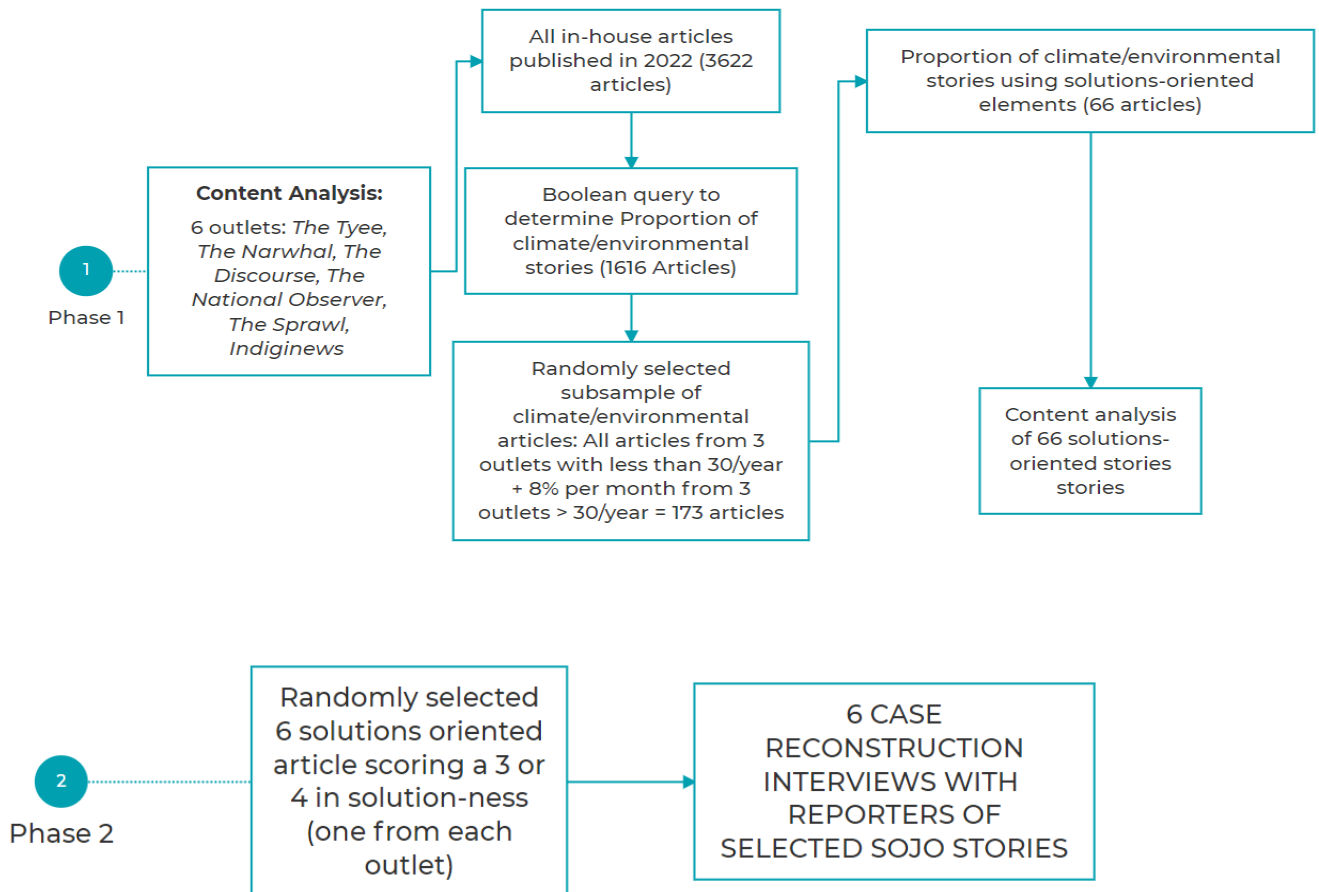
Following Boesman’s et al. (2015) methodology, interviews were semi-structured, in which participants were asked to recall as precisely as possible how the selected story was

written from start to finish. Questions were determined using Brüggemann's (2013) empirical reconstruction model of how ideas for articles are generated. This includes four components. The first is the occurrence or starting point that triggers the story—whether this event happens inside or outside the newsroom. The second is the trigger source, which is the method of how the occurrence gets into the newsroom to start the news-making process. The third is the evaluation, in which the incoming information is assessed for newsworthiness by newsroom decision-makers. Finally, the editorial context describes how article initiatives are turned into articles based on the use of limited newsroom resources, editorial policy, and the individual interests of journalists. These questions help inform the gap in the literature about how innovation is adopted in newsrooms, and how alternative media outlets play a role in introducing new journalism practices (and frames), such as solutions journalism, that may be adopted later by the mainstream. The results also help establish whether solutions journalism is used as a tool to improve trust between the media and their community.

A thematic analysis was applied to the interviews using the process model of framing (de Vreese, 2005) and the hierarchy of influences model (Shoemaker & Reese, 1996) to determine the internal and external constraints reporters identified in implementing solutions journalism for climate and environmental stories. By providing a deeper understanding of the reporter's experiences writing solutions stories, Phase 2 was essential to the significance of the study. Including the perspectives of alternative media reporters make the results more practical and useful for other outlets considering implementing solutions journalism methods, and how they can report on climate and environmental stories.

Figure 2

Phases of the Present Study's Mixed Methods Explanatory Sequential Design



Mixed methods research has gained prominence over the last few decades (Cresswell & Clark, 2017), including in journalism studies research. The use of mixed methods techniques in journalism studies often involves quantitative content analysis, followed by qualitative methods just as discourse, sentiment, or thematic analysis, either of news articles or through interviews with journalists. For example, Kenix (2008) used a content analysis followed by a discourse and narrative analysis to compare both the quantity and quality of climate change coverage between a mainstream media source and an alternative media source. Parratt-Fernandez et al. (2022) combined a quantitative content analysis with semi-structured interviews in a case study to determine strategies in climate change coverage and how journalists perceive these strategies. Similarly, Powers and Curry (2019) used mixed methods research techniques to investigate how journalists practising solutions journalism define and view its purpose and impact. In another case study, Lough and McIntyre (2021b) used mixed methods to determine changes in audiences' impacts before and after a newsroom shifted to a solutions journalism perspective in their work.

In fact, Thurman (2018) found that in a small case study of research methods in journalism studies, 70% used a mixed methods approach to take advantage of the benefits of

both quantitative and qualitative research. This has become especially popular in the digital age, with quantitative internet data (about audiences in particular) being so prevalent and accessible. Thurman (2018) also noted the value of mixed methods techniques in longitudinal media research studies. Mixed methods research has been proven useful in understanding the intersections between online and offline social networks, as noted in Robinson and Anderson's (2020) mixed methods network ethnography study. In the era of big data, mixed methods research is beneficial to journalism studies, as quantitative methods "can help pin down more concretely something like a fickle and fluid, yet also highly structured and hierarchical ecosystem" that is the online world and qualitative methods "can help capture an ephemeral, constructed knowledge" by capturing nuance and depth beyond what quantitative results can convey (Robinson & Anderson, 2020).

3.2 Assumptions

Pragmatism is often seen as the philosophical foundation for mixed methods research, as this type of research prioritizes practicality by using all methods available to address a research problem (Creswell & Clark, 2017). Pragmatism assumes a worldview that is concerned with what works at the time rather than focusing on what is objectively "true," focusing on the research problem rather than the methods and drawing on both quantitative and qualitative assumptions (Creswell, 2014), such as in the present study.

In thematic analysis it is assumed that patterns—what is common in the data—are meaningful (Braun & Clarke, 2012). Thematic analysis can be approached either inductively (codes and themes are determined from the data itself), or through a deductive approach, in which codes are determined by drawing on theoretical constructs and applying those concepts to the data. The present study uses a top-down deductive approach in the content analysis of articles in Phase 1 and in the thematic analysis of interviews in Phase 2. In Phase 1, the concept of solutions journalism, based on the theoretical construct of framing and as defined by the literature, was applied to each story included in the corpus to determine the degree of "solution-ness," the scope of the solution, whether the solution was an example of mitigation or adaptation, and what other issues the solution was linked to. In Phase 2, codes and themes derived from the participant interviews were based on how the participants' experiences fit into the construct of framing theory, specifically frame building. Participants' answers were coded as an internal or external constraint (de Vreese, 2005), based on the hierarchy of influences model (Shoemaker & Reese, 1996).

While a deductive approach was applied to the present study, Braun and Clarke (2012) note that realistically, it is not possible to only use an inductive or deductive approach. In an inductive approach, the coder will always bring some predetermined bias to the data when analyzing, and in a deductive approach, it is not possible to completely ignore semantic content to code for a theoretical construct.

3.3 Phase 1: Corpus Creation and Content Analysis

In the first phase of this study, six alternative media outlets were selected based on previous determinations that they include a solutions journalism initiative, are Anglophone outlets, and publish all their content online. These outlets are *The Tyee*, *The Narwhal*, *The Sprawl*, *The National Observer*, *The Discourse*, and *Indiginews*. All articles from 2022 for each outlet were collected, either using online Eureka's online database or by manually downloading directly from the outlet's website. Eureka is an online database that provides full-text access to

French and English language Canadian media at the local, regional, and national levels. Of the outlets included in the study, only *The Tyee*, *The Narwhal*, and *The National Observer* stories are referenced in the Eureka database. For articles collected via Eureka, a test was run for each outlet comparing the number of articles returned on Eureka for one month versus the number of articles manually counted on the outlet's website, showing a concordance of 95%. For *The Tyee*, the metadata for the stories from January 1 to December 31, 2022, was exported from Eureka into a CSV file and imported into a spreadsheet. Data from *The Narwhal* and *The National Observer* was only available in Eureka from July 2022 onwards, so metadata from the year's first half was collected manually directly from the websites. The metadata included the publication name, author name, article title, URL link to the article, and date of publication.

Eureka does not reference *The Sprawl*, *The Discourse*, or *Indiginews*. However, the number of stories these three outlets publish is much lower (from 3%-13% of the total number of stories published by the first three outlets), so metadata was copied manually directly from each website and copied into a master spreadsheet (title of the article, author name, date, article URL).

Once all stories' metadata from 2022 was collected into a spreadsheet, the data was cleaned using OpenRefine, removing duplicates, any articles that weren't news, analysis, features, or editorial pieces (sponsored pieces, outlet announcements, podcasts), and creating new columns for analysis such as the month of publication. Stories obtained by a wire service such as the Associated Press or the Canadian Press were removed, as this study strictly analyzes articles written and published by alternative media in-house. Stories that were written by an in-house or freelance reporter with files from the AP or Canadian press to support the full story were kept.

The total number of stories for each outlet was tallied. A Boolean query using climate and environmental-related keywords (see Appendix A) was used to code each story and filter the total results for climate and environmental stories. The keyword list was developed by brainstorming words related to climate and the environment, monitoring the news cycle for common wording in these types of stories, and familiarizing with the entire corpus as articles were added. Manually downloading articles was helpful to the familiarization process, and common keywords were noted as articles were added to the corpus, particularly for the smaller outlets. These keywords were then tested across articles collected from Eureka for the larger outlets to ensure that they could be applied across the entire corpus. The proportion of climate and environmental stories relative to all stories published in 2022 was calculated for each outlet to determine the salience of climate change and environmental stories. Data were also examined by month to determine if salience differed throughout the year.

Articles were determined to be climate or environmental stories if they approached the story from a climate or environmental angle. This included stories about the impacts of natural disasters such as wildfires, hurricanes, inundations, and other environment-related disasters. Stories about individual pro-environmental choices, such as gardening and education, were also included. Natural resources stories were included if climate change or environmental impacts were a part of the story. Stories from a business or financial angle, food angle, Russia's invasion of Ukraine, or about Indigenous rights, that did not explicitly mention any intersections with climate or the environment in the text of the story were not included. For example, some Indigenous rights stories were being told from a social impact or health lens such as the housing crisis or access to clean water but didn't make explicit connections to climate change or the environment within the text of the article, and so were not counted as a climate change or environmental story.

3.3.1 Assessing Article “Solution-ness”

Once the proportion of environmental and climate change articles was determined, a subsample of all climate and environmental articles were evaluated using Daoust-Boisvert’s et al. (2023) Solutions Journalism Inclusion/Exclusion Code Book based on its adherence to including the four essential qualities of solutions journalism determined by the Solution’s Journalism Network (2019): 1) the response to a problem is the focus of the story and is present in the lede or first two paragraphs of the story, 2) insights that may be more broadly applicable are included, 3) evidence of its efficacy to solve the problem is included, and 4) limitations are stated. Each quality was coded as 0—not present or 1—present. At this point, the full text data for all articles included in the subsample was collected by saving the webpage as a pdf.

Each article’s degree of solutions orientation was ranked on a Likert scale from 0 to 4 (see Appendix B). A zero rating means the article did not include any of the above criteria or the solution was not included until the end of the story, and therefore not included in the subsequent thematic analysis. Level one articles included one out of four criteria and were categorized as “somewhat” solutions-oriented, level two included two out of four criteria and were categorized as “moderately” solutions-oriented, level three included three out of four criteria and were categorized as “very” solutions-oriented, and level four included all criteria and were determined to be “totally” solutions-oriented. The proportion of solutions articles in each category was calculated.

The subsample included all environmental or climate stories from *Indiginews*, *The Discourse*, and *the Sprawl* as they each makeup less than 2% of the total number of environmental or climate stories (47 articles total). For *The Narwhal*, *The Tyee*, and *The National Observer*, 8% of all environmental or climate stories were included, for a total of 126 stories. This was done so that the number of stories analyzed was manageable in the given time frame for data collection and analysis, and still include a strong representation of articles published by each outlet. Altogether, 173 stories were included in the subsample. To ensure a relative distribution of stories across the whole year, 8% of articles published in each month for *The Narwhal*, *The Tyee*, and *The National Observer* were included in the subsample. The stories were picked using a randomizing function in Excel for each month. This was done to ensure the representation of each outlet based on the number of articles they produce each year remained accurately represented in the subset.

3.3.2 Solution-Oriented Article Content Analysis

After the subsample of environmental and climate change stories was evaluated for “solution-ness,” a content analysis was applied to the articles that were determined to be solutions-oriented (received a score from level one to four). The content analysis coded stories based on a scale evaluating the social scope of action to evaluate how the solutions stories are framed through the dimension of space, adapted from Chyi and McCombs (2004) frame-changing measurement scheme. Solutions at the individual level received a score of 1, community or regional solutions received a score of 2, and national or systemic solutions received a score of 3. Full descriptions of each criterion can be found in Appendix C.

Each story was also coded for the linkage to one or more other issues (agriculture, defence, education, energy, health, international cooperation, land and water management, economy, research and development, social transformation, and Indigenous Knowledge) adapted from the methods of Achong and Dodds (2012) with the addition of Indigenous Knowledge. Finally, each story was also coded to determine whether the solution was an

example of mitigation (efforts to reduce or prevent emissions), adaptation (efforts to reduce the negative impacts of climate change), both, or neither.

In summary, the data collected and analyzed from the content analysis included:

- All stories published in 2022 by each outlet;
- The proportion of climate or environmental stories published by each outlet in 2022;
- A subsample to determine the proportion of climate and environmental stories using solutions-oriented elements for each outlet in 2022;
- A thematic analysis of each solutions-oriented climate and environmental story to determine the degree of solutions orientation, the scope of solutions included, and types of solutions included based on other intersecting issues, and whether the solution was an example of mitigation or adaptation.

3.4 Phase 2: Qualitative Interviews with Reporters

3.4.1 Participants

The results from Phase 1 helped construct an understanding of how alternative media in Canada use solutions journalism to report on climate and environmental stories. Phase 2 attempted to deepen that understanding by providing context as to why alternative media newsrooms make decisions that lead to the Phase 1 results.

Purposeful sampling is a qualitative research technique used to select individuals with specific knowledge and experience of the phenomena being studied (Creswell & Clark, 2017). This technique was necessary in this study to select for reporters that had experience writing a solutions-oriented story, as evidenced by the results of the content analysis. It was also necessary to ensure a reporter was selected from each of the outlets studied so that each outlet is represented in Phase 2 as well, and therefore results from Phase 2 can be extrapolated to explain the results in Phase 1. A reporter from each outlet included in the study was recruited to participate in qualitative interviews. However, a reporter from *the Narwhal* was not available to participate during the time frame allotted for interviews. Instead, two reporters from *Indigenews/The Discourse*, and one reporter from each other outlets were interviewed for a total of six interviews. Prior to recruitment, ethical approval was obtained to study human participants via certification from Concordia University's Human Research Ethics Committee. Participants were chosen out of the stories in the subsample that scored a 4 and therefore meet all the criteria to be determined solutions journalism. In cases where a score of 4 was not possible, because the number of 4-rated stories was limited or the reporter who wrote the story was unavailable, participants that wrote stories that scored a 3 were chosen, as those stories were strongly solutions-oriented.

3.4.2 Interviews

In thirty to forty-five-minute semi-structured interviews, taking place and recorded over Zoom, participants were asked open-ended questions about how and why they decide to allocate resources to climate and environmental stories, and in what situations they decide to apply solutions journalism methods to these stories. Case reconstruction questions were used to outline the frame-building process for the reporters selected solutions story, followed by broader questions about the reporter's experience using solutions journalism in general.

Following the protocols identified by the ethical approval to research human participants, interviews were anonymized by removing any identifying details such as the participant's name and place of work and replacing the participant's name with a code that only the researcher knows. Interviews were then transcribed verbatim using the transcription tool Descript and lightly edited for brevity by removing any words not essential for understanding the overall meaning (stumbles, stutters, and repeated phrases where applicable).

Steps in the qualitative analysis included a preliminary exploration of the data by reading through the transcripts and summarizing answers in memos, coding the data by segmenting and labelling the text, and developing themes by aggregating similar codes using frame-building theory, by sorting codes into two main categories of Internal and External constraints, and subcategories within each category. This was built off de Vreese's (2005) process of framing model, focusing on the frame-building aspect. These constraints were identified by adapting Shoemaker and Reese's (1996) hierarchy of influences model by identifying constraints at the individual, routine, and organizational levels as self-reported by the journalists. The routines level subcategory was further subcategorized into six news values determined by Shoemaker and Reese (2013): proximity (local events are more interesting to an audience), timeliness (the news event has happened recently), human interest (interest in human dramas that have no direct impact on the audiences lives), the unusual (interest in oddities and exceptions, but also events that are underreported on), conflict and controversy, and prominence and importance (measured by the number of lives impacted). The extra medial level of the hierarchy of influences model was used to determine the external constraints such as sources and audiences, although these also impact the routines level.

Although most codes could be directly pulled from the hierarchy of influences of model, a couple of codes including Intentionality (an internal constraint) and Complex Problems (an external constraint) were intuitively developed as stand out codes that do not fit neatly into any of Shoemaker and Reese's (1996) categories. The highest level of the hierarchy of influence model, ideology, was not measured directly or included in the codes beyond the knowledge that these organizations operate in a Western liberal democracy.

3.4.3 Mixed Methods Analysis

Mixed methods data analysis procedures were implemented to link the themes from the interviews to the data from the content analysis. Data was reduced by producing descriptive analyses of the quantitative data and summaries of the qualitative data and displayed via the creation of charts and tables. The qualitative data was used to help further explain the quantitative results. This included using the narratives constructed from the interviews with journalists to explain the proportion of solutions journalism stories found, as well as the proportion of the different scopes of solutions included in reporting, and the proportion of intersecting issues. Meta-inferences were made to determine whether the qualitative interviews provide a better understanding of the research question than the content analysis results alone.

3.4.4 Limitations of Mixed Methods Research and the Present Study

Mixed methods research was chosen to receive the benefits of both qualitative and quantitative research, and ideally mitigate the disadvantages of each by one method making up for the other (quantitative research allowing for a larger sample size and ability to generalize the results, qualitative research allowing for in-depth information and experiences of individuals). However, the limitations of both quantitative and qualitative approaches cannot be completely

dismissed, and mixed methods research requires skills in both qualitative and quantitative methods. Separate data collection phases require more time and resources.

In the present study, it is assumed that all articles for 2022 were found and included in the corpus and that the Boolean query successfully returned all climate and environmental stories. The study was limited by time because only a subsample of all stories in 2022 was evaluated for the proportion of solutions journalism, so it must be assumed that the results can be generalized for the entire corpus. It is assumed that the reporters selected for the interviews accurately remembered and were honest about their experiences. It was also limited by the availability and willingness of reporters to participate in interviews.

The study is limited by participant bias, in which reporters may respond inaccurately to be socially accepted or provide the same answers to similarly worded questions. This was addressed by leaving the questions open-ended, phrasing the questions to remove any language that might make the participant feel judged, ensuring the questions were worded differently, reminding the participant that the results would be anonymized and that they were not being tested. Researcher bias was avoided by continually reevaluating impressions and responses to avoid confirmation bias, including asking follow up questions for clarity to ensure the participants response was properly understood, structuring the interviews so that the questions were standardized and ordered suitably, and avoiding leading questions.

Chapter 4: Results and Analysis

4.1 Phase 1: Content Analysis

4.1.1 The High Salience of Climate and Environmental Articles in Alternative Media

Phase 1 of this study consisted of a content analysis of climate and environmental articles published by Canadian alternative media. All articles published in 2022 from each outlet included in the study (*Indiginews*, *The Discourse*, *The Narwhal*, *The National Observer*, *The Sprawl*, and *The Tyee*) were collected in a corpus. Once wire service and non-news stories were removed, the total number of in-house articles published by the six media in the corpus was 3622. Environmental and climate change stories represented 44.6% of the total (1616 articles) across all six outlets (Table 1).

The outlet with the highest proportion of climate change or environmental coverage for 2022 was *The Narwhal* (100%), which was expected as *The Narwhal's* mission is to cover stories about the natural world exclusively. *The National Observer* also turned out proportionately more climate and environmental articles than the rest of the outlets, at 59.2% of all in-house articles. *The Tyee*, *The Sprawl*, and *The Discourse* all produced a relatively similar proportion of climate or environmental articles, at 17.7%, 20.7%, and 16% respectively. *Indiginews* produced the lowest proportion of climate or environmental articles, at 11.4% of their total coverage.

Table 1

Number and Proportion Environmental or Climate Related Articles Compared to All In-House Articles Published in 2022 for Each Outlet (Indiginews, The Discourse, The Narwhal, The National Observer, The Sprawl, The Tyee)

Outlet	Number of All In-House Articles	Number of Environmental/Climate Change Articles	Proportion of Environmental/Climate Change Articles
Indiginews	176	20	11.4%
The Discourse	131	21	16.0%
The Narwhal	349	349	100.0%
The National Observer	1,688	999	59.2%
The Sprawl	29	6	20.7%
The Tyee	1,249	221	17.7%
Total	3,622	1,616	44.6%

4.1.2 Varied Levels of “Solution-ness” in Environmental/Climate Coverage by Alternative Media

After the proportion of environmental and climate change articles was determined, a subsample was selected to assess articles for their degree of “solution-ness.” *The National Observer* and *The Narwhal* produced significantly more stories than the rest of the outlets. *The National Observer* articles make up 61.8% of all climate and environmental articles included in the sample, while the number of articles produced by *The Narwhal* makes up an additional 21.6%. *The Tyee* follows with 13.7% of all environmental articles included in the sample, while the other three outlets combined make up less than 3% of all environmental and climate articles in the sample. To ensure that these three outlets were represented accurately in the subsample, all stories from *Indigenews*, *The Discourse*, and *The Sprawl* were included. For outlets that produce many more stories (*The Narwhal*, *The National Observer*, and *The Tyee*), 8% of all stories from each month in 2022 were collected. This proportion was chosen so that the size of the subsample was manageable, while still providing an accurate reflection of the overall coverage from each outlet. The total subsample included 173 stories (Table 2).

Table 2

Number of Articles for Each Outlet (Indigenews, The Discourse, The Narwhal, The National Observer, The Sprawl, The Tyee) in the Subsample to be Analyzed for “Solution-ness”

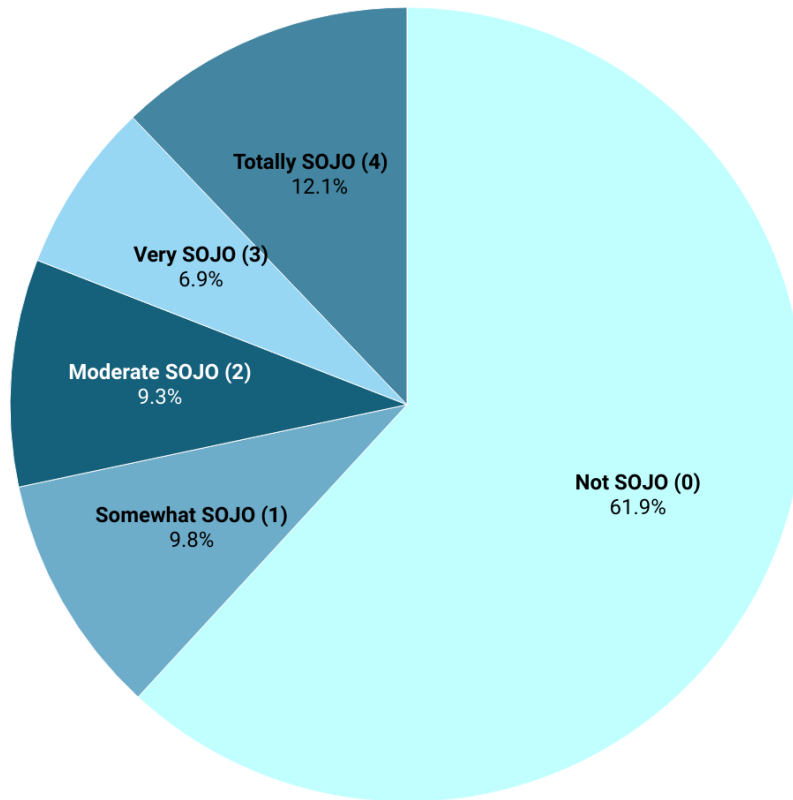
Outlet	Number of articles included in subsample
Indigenews	20
The Discourse	21
The Narwhal	28
The National Observer	80
The Sprawl	6
The Tyee	18
Total	173

The total number out of the subsample determined to include some degree of solution-ness was 66 (38%). Of these, only 12%, or 21 articles, received a score of 4 (Figure 3), indicating that the article included all criteria required to be determined solutions journalism (SOJO). The other 26% received a score between 1 and 3, indicating a prevalence of solutions-oriented stories that don’t meet the full criteria of solutions journalism. Most articles (62%) do not include any degree of solutions orientation. *The Narwhal* had the lowest proportion of solutions-oriented articles overall, at 14% (7% received a rating of 4), while *The Sprawl* had the most articles rated as a 4 on the scale of the solution-ness (33%). *The Sprawl*, *Indigenews*, and *The Discourse* had about half of all environmental and climate stories including some degree of solutions orientation, while *The Tyee* had solutions-oriented coverage in a third of all climate and

environmental stories. *The National Observer* included solutions-oriented frames in 40% of all climate and environmental stories.

Figure 3

Degree of “Solution-ness” of Climate/Environmental Articles from 0 (Not SOJO) to 4 (Totally SOJO)



4.1.3 Types of Solutions Included in Climate/Environmental Articles

Once the articles were assessed for the degree of solution-ness, all 66 articles that scored above 0 (had some degree of solution orientation in the reporting) were further analyzed for the types of solutions they included. First, they were assessed for whether they were an example of mitigation (a solution to reduce emissions), adaptation (a solution to adapt to climate impacts), both, or neither (in the case of environmental stories that were included but aren't directly related to climate change, such as wildlife conservation articles). The majority (62.1%) of solutions articles discussed an example of mitigation, while 7.6% discussed an adaptation solution, 7.6% discussed an example of both, and 22.7% discussed an example of neither (Figure 4).

All solutions-oriented articles were also assessed for the scope of the solution included. Solutions were categorized based on whether they focused on a solution at the individual or consumer level (rating of 1), the local community or regional level (rating of 2), or at the national or systemic level (rating of 3). Most solutions articles received a rating of 2 (56.1%) and thus

were an example of a solution with impacts at the community or regional level. This was followed by 34.9% of stories with a national or systemic solution, and 9.1% of stories with an individual scope of solution (Figure 5).

Of all solutions-oriented stories examined, 20 (30.3%) are examples of mitigation at the community level. This result is more pronounced when focusing on articles that received a score of 4, meeting all solutions journalism criteria. Of those 12% of articles, 52.3% are mitigation solutions at the community level.

Finally, all solutions-oriented articles were assessed for what other issues the article was linked to. This was included in the analysis to determine in which sectors climate/environmental solutions are more commonly presented in climate/environmental solutions reporting. Articles were often linked to more than one sector, but the most common issue linkage was land and water management, included in 27 (40.9%) of all solutions stories (Table 3). Table 3 indicates the number of stories linked to each sector. Articles can have multiple linkages. For example, over half (55.6%) of all land and water management solutions also included a link to Indigenous Knowledge solutions (not depicted in Table 3).

The majority of stories (73.3%) that include a link to both land and water management and Indigenous Knowledge are community-level solutions, which is to be expected because articles about Indigenous Knowledge typically focus on knowledge from a specific Indigenous community, and are primarily covered by *Indiginews* or *The Discourse*, which are sister outlets that prioritize Indigenous coverage (especially *Indiginews* where all coverage is focused on Indigenous communities). The remaining (26.7%) land and water management x Indigenous Knowledge articles were at the national/systemic level. These stories were primarily articles focused on federal government funding for Indigenous communities as a solution to climate change, such as Indigenous Protected and Conserved Areas. A fifth (20%) of land and water management x Indigenous Knowledge articles met all of the criteria of solutions journalism.

The next most prevalent issue linkage for climate or environmental solutions was energy (36.4%). Of all energy solutions articles, 54% are also linked to the economy. Most energy x economy solutions articles (76.9%) cover solutions from the national/systemic level, with the remaining 23.1% focused on the community level. This is not surprising, as Canada's economy is so dependent on the energy sector. Over a third (38.5%) of economy x energy articles met all the criteria required to be considered totally solutions journalism.

Figure 4

Proportion of Climate/Environmental Solutions-Oriented Articles that Include an Example of a Mitigation or Adaptation Solution

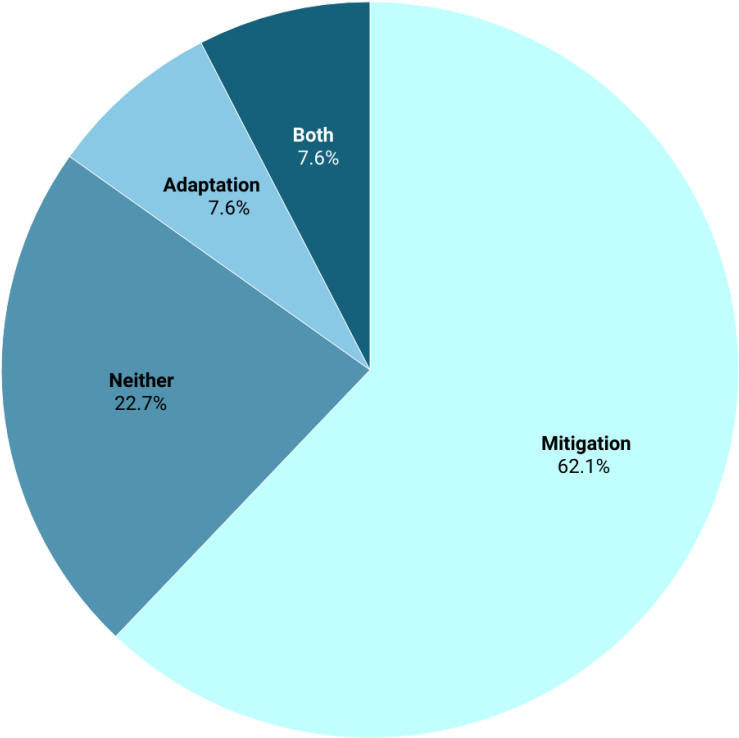


Figure 5

Proportion of Climate/Environmental Solutions-Oriented Articles that Include an Example of an Individual, Community, or Systemic-level Solution

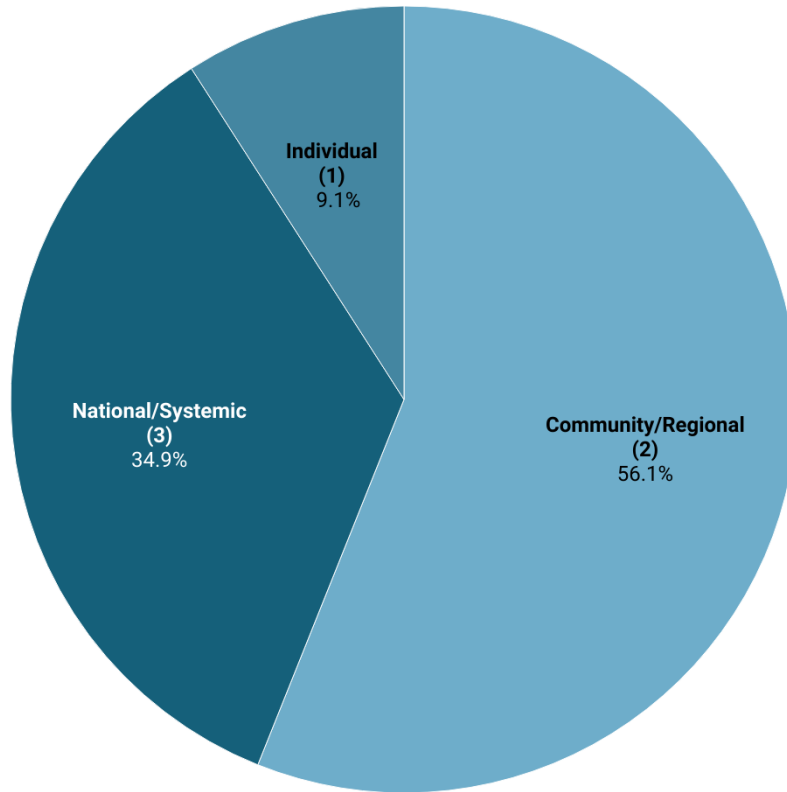


Table 3

Number of Climate/Environmental Solutions-Oriented Articles Focusing on Solutions Linked to Different Sectors

Sector	Number
Agriculture/Food	9
Health	7
R&D	6
Education	15
Energy	24
International Relations	5
Land and Water Management	27
Social Transformation	16
Economy	18
Indigenous Knowledge	19

4.1.4 Summary

The alternative media studied make a point to cover climate change and the environment. Climate and environmental stories account for nearly half (44.6%) of all articles across six alternative media outlets in Canada in 2022. While a significant number of stories are solutions-oriented, indicating a priority for solutions-oriented reporting, a small proportion met all the criteria to be considered solutions journalism. For example, over a third of articles (38%) include some level of solution-ness in the reporting, although only 12% can be fully classified as solutions journalism. Most solutions stories are examples of mitigation solutions, and most stories are examples of community-level solutions. Most climate or environmental solutions included (40.9%) are linked to land and water management. Over half (55.6%) of solutions related to land and water management also include a link to Indigenous Knowledge. The next most prevalent issue linkage was energy solutions at 36.4%. Of all energy solutions stories, 54% were also linked to economic solutions.

4.2 Phase 2: Interviews with Reporters of Solutions Articles

The content analysis in Phase 1 of the study identifies the categories and qualities of solutions news frames in climate and environmental reporting produced by the alternative media studied, but it does not provide data or insight into how those news frames were developed.

Phase 2 is necessary to gain insight into the frame-building process that results in solutions journalism for climate and environmental articles in alternative media newsrooms, and fully answer the research question of how alternative media in Canada use solutions journalism in climate and environmental reporting. The reporters who wrote the articles with a score of 3 or 4 in “solution-ness,” indicating they met all or almost all the criteria necessary to be determined solutions journalism, were selected for a semi-structured, case reconstruction interview. Interviews were coded using a thematic analysis approach. An overview of the themes is provided in the following paragraphs, followed by a more detailed look at each theme. Due to the ethical considerations of this study, reporter names were coded and any identifying information, such as the name of the organization they work for, has been redacted to keep their identities anonymous. Quotes have also been edited for clarity, when necessary, with clarifying or contextualizing words or phrases placed in square brackets within direct quotes.

Interviews were analyzed to determine how the frame-building process works in alternative media newsrooms in the context of climate and environmental solutions reporting. The categories used to analyze the interviews were applied from de Vreese’s (2005) process model of framing, in which the frame-building process is determined by Internal and External Constraints (Figure 6). These constraints were developed by de Vreese (2005) from Shoemaker and Reese’s (1996) hierarchy of influences model, which was adapted in this study to fit the codes from the interviews into the two main frame-building categories of Internal and External Constraints.

Through the process of coding, the theme of Intentionality stood out across all interviews in the context of whether the journalists intentionally used solutions journalism or came to a solution framing via other processes. Intentionality is one of the main assumptions of the hierarchy of influences model where “some influences on content are intentional and others occur as a result of other actions” (Shoemaker & Reese, 1996, p. 252) and thus can be applied throughout all levels of influence. Thus, the intentionality of journalists is key to the frame-building process of solutions journalism and is impacted by all levels of influence (both external and internal constraints). Frame-building constraints determined whether a journalist was implementing solutions journalism with high, medium, or low intentionality, resulting in the need for coding intentionality on this spectrum to assess the level of intentionality for each journalist, and the constraints related to that level of intentionality.

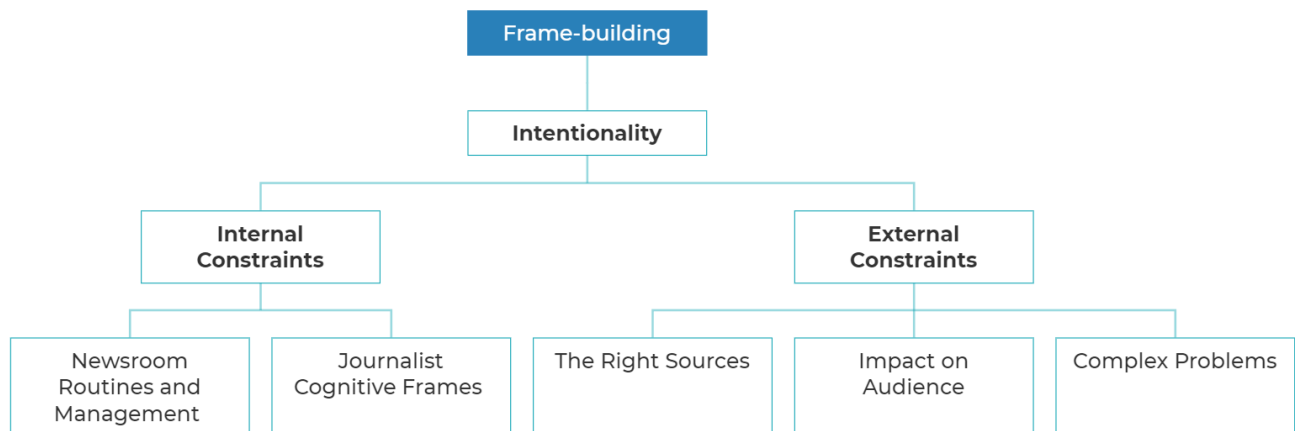
Internal Constraints included the subcategories of Newsroom Routines and Management (news values, resources, and support), and Journalist Cognitive Frames (personal values and beliefs, and professional background). Newsroom Routines and Management constraints were pulled from the hierarchy of influences model, to encapsulate both routine level influences (news values, editorial support) and organizational level influences (organizational resources and support). News values were further categorized into prominence and importance, conflict and controversy, the unusual, human interest, timeliness, and proximity (Shoemaker & Reese, 2013). The constraint of Journalist Cognitive Frames was also adapted from the hierarchy of influences model, to represent the individual level of influence on media content. This includes how the journalist’s personal values and experiences influence what they cover and how they cover it, from their belief systems to their professional background.

External Constraints were subcategorized into The Right Sources, the Impact on Audiences, and Complex Problems. The Right Sources and Impact on Audiences subcategories are derived directly from the hierarchy of influences model. Shoemaker and Reese (1996) describe external sources as influences on the routines level of media, as well as on the extra-media level in the hierarchy of influences, as selecting the right sources is something journalists

must consider in order to be cognizant of interest groups and public relations teams that have their own narratives to push, while also relying on experts to explain the meaning of the news the journalist is reporting on. The Impact on Audiences is an External Constraint that influences the routines level of journalism in the hierarchy of influences model, as journalists must consider what stories to select based on audience appeal and to “present it in ways designed to meet audience needs” (Shoemaker & Reese, 1996, p 109). The Impact on Audiences is also an External Constraint at the extra medial level, as journalism exists in a marketplace in which the stakeholders funding media outlets (sometimes the audiences themselves) influence what content journalists produce to meet all the needs and wants of a target audience. The subcategory of Complex Problems does not fit directly into the hierarchy of influences model but came up in the interviews as a specific constraint to solutions journalism reporting and can be considered an External Constraint as it is the topic itself that can make solutions reporting difficult.

Figure 6

Alternative Media Frame-Building Constraints For Intentionally Applying Solutions Journalism New Frames With Internal and External Categories Applied From the Process of Framing Model (de Vreese, 2005) and Subcategories Adapted From The Hierarchy of Influences Model (Shoemaker & Reese, 1996)



4.2.1 Internal Constraints

Newsroom Routines and Management (News Values, Support, and Resources).

Participant interviews indicated that newsroom routines and management practices are a key internal constraint in implementing solutions journalism. These include news values (at the routine level) and support and resources (at the organizational level). All newsrooms included in the study include a mandate for solutions-oriented priorities, and this was confirmed by the reporters in the interviews. Reporters often mentioned that their editorial team suggested the solutions framing for the story, and prioritized stories they thought had the potential to be solutions-based. For example, Reporter A said:

“We’re trying to have it as the year of solutions reporting in the newsroom ... There’s lots of talking about it. There’s lots of meetings that we have about it. Lots of different ways

where we look at solutions reporting that really worked and trying to chew out what worked about it and how we could reasonably adopt that into our everyday practices.”

The Unusual. This prioritization of solutions reporting was implemented in newsrooms by adhering to other prominent news values such as stories that fit under “the unusual” category, in the sense that these organizations prefer to report on topics that are unusual because they are underrepresented or overlooked in mainstream media coverage. For example, Reporter C said that their editors “like things that are outside of the ordinary” and that “sound like the counter-narrative of what we’re always hearing.” That same reporter also values “the unusual” by using overlooked topics to drive what they report on, including in the solutions story they were being interviewed about, saying the solutions angle “changes the narrative a little bit” and is “not super mainstream.” Other reporters agreed, saying that they follow stories that don’t “get enough attention” or that “someone else doesn’t already have the resources to cover.” The organizational structure and news routines of alternative media newsrooms are inherent to valuing “unusual” topics, as described by Reporter A:

“I think a really helpful part of what guides me is that we are an independent newsroom, and so we’re not necessarily focusing on breaking news or just making sure that we produce something every day. It’s much more what isn’t being talked about, what is overlooked, what has a different point of view that we could dig into?”

This preference for “the unusual” is a justification for using a solutions frame in these newsrooms, because the solution framing provides an alternative way to approach a story as opposed to using a traditional problem-focused framing. For example, Reporter D explained how their outlet chose a solution framing as a counter-narrative to how Indigenous people are often portrayed in mainstream media, which is often in a negative context through the use of stereotypes or through focusing on trauma, and instead choosing a solutions lens to platform things the community is doing well that the mainstream may overlook:

“[The outlet] really wanted to not only write about Indigenous people in the light of sadness and in the light of trauma, because when you see Indigenous peoples in the headlines, oftentimes it is largely focused on trauma and residential schools and addiction ... so I think that was part of the reason how we evaluated it, is this a story of victory that we would want to read [about ourselves as Indigenous people].”

Proximity. Solutions journalism news routines also focused on providing value to the audience as well as supporting the news value of “proximity.” Reporters specifically thought about the value to the audience when thinking about the scope and types of solutions they report on, finding “individual [level] stories are a little more compelling.” By looking at a solution from the individual level, reporters thought that their audience could get an immediate value out of the information provided, and later building to systemic solutions that the reporters viewed as more impactful. As Reporter B explained, “It felt a bit more appropriate to take it to the individual level and let people know more about what is available despite the fact that maybe it’s not enough at this time.” Other reporters agreed that individual level solutions are useful as a hook that can then be used to build out to the systemic impacts of a solution, such as Reporter E saying:

“You try to hook [at the individual level] ... initially, okay, I’ll just talk to some local farmers, but then we talked to groups who are involved on a larger scale ... you don’t want to limit just to these individual stories. You want to get a sense of larger activity going around.”

The idea that stories at the individual or community level are more valuable to the audience also made reporters think that solutions stories about an adaptation lend more easily to solutions journalism because they are easier to connect to the individual or community level. That made them recall that they focus more on adaptation than mitigation solutions in their reporting, as Reporter A noted:

“Almost all, if not all of my solutions reporting is focused on adaptation, rather than mitigation. My hard news reporting is focused on mitigation, so how we should be reducing our emissions, where emissions are coming from, how we’re saying we’re going to cap that ... and then solutions are much more, look over there. We’re pretty screwed. So, what are we going to do about it?”

Other reporters agreed, saying adaptation “is probably where more of the solutions stories are found” and that “there’s probably more appeal for adaptation than mitigation, which kind of seems to some people, I think, to involve sacrifice and things and bigger policies that might be more controversial.”

Timeliness and Prominence/Importance. Although the news value of “timeliness” was brought up as a reason for solutions reporting, this was mainly due to stories about how people are responding to recent natural disasters (made worse by climate change) such as floods, drought, and wildfires. Reporter F said, “We were just coming out of a pretty crazy wildfire season that summer ... so I knew that the timing was right to pursue that.” Reporter E said, “It just seemed like an important way to talk about the extreme weather that was going on.”

In these situations, the news value of “prominence/importance” was seen as a constraint to solutions reporting because solutions stories take longer to report on and can compete with other prominent stories, as Reporter A said:

“It can definitely slow me down, and then I will sometimes feel anxious because I’m not producing enough, or I’ll have been working on a feature for too long, or I’ll feel like there’s other news things happening and I can’t get to the solutions piece.”

Overall timeliness was not seen as a major news value in the alternative newsroom context, as Reporter F said, “I’m spending some time with it. I’m not rushing to get the story out... I took some real time and care with that one to make sure I got the history and the details of the practices right.” Reporters mentioned that solutions pieces tend to “require extra research and analysis,” and therefore can take more time to report on. Newsrooms seem to have dealt with time constraints by providing reporters with flexible deadlines, with an emphasis on getting the story done right rather than quickly, as Reporter A said:

“The [outlet] is a little different where we really don’t have hard deadlines in the same way as a lot of other news places. Sometimes there will be breaking news, we’ll try and get it out earlier. Sometimes we’ll miss that, and then we can take a step back and turn it into a bigger analysis piece.”

Reporter C agreed, saying:

“It took me a long time... I got a deadline extension and that was also so good, when I was working with that publication because [the editor] trusted me. So, if we want the story to be good, I need another week, and that sort of thing.”

Support and Resources. Actions such as providing flexible deadlines indicate that solutions journalism can more easily be implemented in the newsroom when there is support for it. In general, reporters described a “supportive and collaborative newsroom,” where they had positive relationships with their editors, and “editors were really happy” with the results of their solutions stories. Editors provide support for solutions journalism, as Reporter A said, “There’s a lot of support for it. There’s a lot of encouragement for it. There’s a lot of desire for it.”

These positive relationships and the culture of collaboration and trust in the newsroom meant that the reporters included in this study had “pretty free rein” to pursue the stories they wanted to, despite the fact that these smaller outlets produce a limited number of stories and that the extra time required results in a lack of fair compensation, especially for freelance reporters. Reporter C said, “It’s time-consuming for sure, and I can tell you that I don’t get compensated properly for that, and yes, it is a challenge” but ultimately, “doing tons of research for the story turned out to be a good thing because I did like how it turned out, so I don’t think I would change anything.”

While all reporters cited having a supportive newsroom and editorial team that prioritized solutions stories, only two reporters had attended a formal solutions journalism workshop, while the rest had no formal solutions journalism training. Instead, it was “more informal” and “just part of [the reporters] education somewhat briefly.” This lack of formal training led to the next key internal constraint in implementing solutions journalism—the cognitive frames of the journalist.

Journalist Cognitive Frames. The second subcategory under Internal Constraints is the journalist’s cognitive frames at the individual level, that are influenced by their personal values and beliefs, and professional background. Reporters frequently cited their own personal values and experiences (or sometimes the experiences of their editors) as reasons for implementing solutions journalism. For example, Reporter B said, “My editor suggested it and mostly because she’s trying to retrofit her home, and our readers would be the same.” Reporter C suggested that their reporting starts with individual observations and then establishing a pattern. Story ideas were often generated based on the personal experiences of reporters, and later bolstered by further research that validates their own experience:

“Research seemed to match my observations. I always feel like a lot of that is also personal experience ... it was basically a hunch and then just reading about it and being like, okay, so this is a thing, and this is what’s being done about it.”

Stories can be chosen based on the journalist’s own interest in the subject, and the solutions framing can develop out of a personal desire to seek a more positive framing to benefit the reporters own mental health and well-being, not just for the audience, as Reporter A said, “I seek out solutions reporting when I’m just feeling down because the climate beat, believe it or not, is depressing sometimes.”

Solutions-oriented reporting can also be generated out of personal writing styles and approaches to journalism that naturally lend themselves to a solution-oriented approach, as Reporter D said:

“In general, I try to look at writing as a supportive thing, as opposed to something that is just reporting on the news. So, I think maybe that approach also changes the outcome into a more of a solutions-based approach.”

Journalists perceived the personal approaches took to implementing solutions journalism, particularly the necessity to put time into building relationships with their sources, as techniques are not typically represented in mainstream media, as Reporter F said:

“I just don’t see a story like that being published nowadays, and well in the mediascape here at least. Just because it takes time to form that, relationship building is really, was really important to the work I did here. Because you have to earn that trust, right?”

While the personal values and experiences of journalists drove much of their solutions reporting, they also felt constrained by their professional backgrounds and perceptions of their own expertise on the subjects they cover, feeling limited to cover solutions for topics that they felt they were uneducated on, as Reporter C said:

“That’s why I focus on what I focus on, right? Because those are the topics I know about. So, I do feel that there’s a component of responsibility because you might be pushing forward some sort of solution ... but is it really a solution... What if I don’t know, what if I point out a solution that I’m not really qualified to?”

Personal feelings of having inadequate levels of expertise to cover a subject was perceived as a limiting factor for implementing solutions journalism, and a contributing factor to why solutions journalism tends to take longer. Many reporters saw a way to implement solutions journalism is by making a comparison to something working somewhere else, but their lack of expertise makes that difficult, saying, “I feel uncertain of my ability to get that comparison right.”

The professional background of reporters and uncertain feelings of expertise is particularly relevant in the context of climate and environmental reporting, because many reporters said, “I wouldn’t say I’m a climate reporter.” Rather, these reporters typically tend to centre social justice and human impacts, and the solutions stories chosen were the stories where the human impacts interacted with climate solutions. For example, one reporter said: “I was seeing it as more of a social issue. And then the environmental focus and solutions seem to be what pulled it together and make it tight.” The personal experience of the reporters came into play here, as Reporter C stated: “when I read that research, I was like oh, okay. This reflects the way I feel about things.” Reporter D agreed that personal experiences are a driving factor behind their environmental reporting:

“It needs to be something that I care about. And not that I don’t care for the environment, but there needs to be that connection that goes beyond just the environment. Because otherwise I always ask myself, am I the person to write the story?”

Ultimately, all reporters said that they were personally happy with both the experience in writing and the results of their solutions stories, regardless of the amount of time require to write them or if they received good feedback online.

4.2.2 External Constraints

The Right Sources. Related to journalists’ professional backgrounds and feelings of expertise as an internal constraint for implementing solutions journalism, finding the right sources to report on a solution was a key external constraint. If the reporter did not feel like an expert in the solution they were reporting on, they also felt like it was harder to find sources for the topic because they didn’t have those pre-existing relationships with sources that they rely on

for their traditional reporting, with Reporter B saying, “Before I had more of a beat, it was harder because you don’t know the right experts.”

In general, solutions reporting was thought to take more time to produce, in part because of the extra analysis (including extra time spent finding sources) required to produce a good solutions story compared to traditional problem-oriented news where reporting is typically centred around a specific event that has occurred. For example, Reporter B said, “You don’t necessarily have time to talk to the experts, maybe get that extra analysis or spend that extra hour.” Reporter A agreed, comparing solutions journalism to traditional reporting:

“A hard news story, you get a couple of voices on it, voices are authoritative enough, ideally, they have different points of view. Good. Put it together. Solutions is a bit more, who should I be talking to for this? Why should I be talking to them? And then waiting around for that interview to be able to come together.”

Sometimes the right source would come up in their research and help them focus their reporting with a proposed solution, as Reporter C said:

“I thought it was going to be like 20 hours and it ended up being more like 50 hours long because I had not come across that research, that expert when I started looking at the topic. So, I went through a lot of stuff before I could put together a cohesive argument, right? Because I could have gone in different directions, and I would have needed to interview even more experts to make that argument. And it was until I read, I did so much research that I came across this guy who had to be only one person who could answer all of my questions.”

Alternatively, sometimes a source would bring the proposed solution to their desk, as Reporter A said, “Someone from [an expert organization] contacted the newsroom.” In some cases, starting with the problem and then finding the right expert sources reveals the solutions angle. The solution doesn’t always need to be something new, but something that we already know about that isn’t being used, or an examination of a solution that might not be the best choice, such in this case described by Reporter A related to government accountability:

“We reported on [the problem] and then at that time when we were reporting on that, the government said, yes, we are aware of this problem, and we want to talk about how to tackle it. And while the government was saying that, we had an environmental lawyer with a PhD in environmental law, pretty knowledgeable, talking about the provincial laws around pollution and remediation that we have in [their province].

And he’s like, the government doesn’t need to talk about anything more. It doesn’t need new taxes; it doesn’t need new strategies. It has all of the tools ... it just needs to implement them ... what the problem is, is a lack of political will to go after large corporations. So, we were aware of that from the previous story.

And then when the government said, we’re thinking of bringing in this new tax, then we could say, OK so the government is saying now it’s got a new strategy but then we can look at all of this background information on this latest update because we’ve been reporting on it. So, the government says, here’s this new strategy, and we had this lawyer saying we don’t need new strategies. We just need you to do what you already said you would do under your existing legislation... I think that helps contribute to the solutions piece of it ... we could balance out [the proposed solution from the government]

with all of these other things and different strategies and different ways that we knew different people across the province were calling for.”

In short, Reporter A used an expert source to further examine a solution being proposed by the government and used information from that source to hold the government accountable and criticize the proposed solution, while offering a better solution in the article. Sometimes solutions journalism can be used to examine government policies that are proposed solutions that may not actually be the best use of resources according to experts.

In the context of climate change, finding the right source, and approaching sources in the right way can also be difficult, especially if the source in question is not necessarily from a demographic that is typically supportive of climate change solutions due to the politicization of the subject, or people who felt climate change solutions could have negative economic impacts on them. As Reporter E said, “They never use the word climate change, I don’t think, but when you talk to them about adapting to extreme weather, you just have to know your audience, the other person you’re talking to [as a source].”

Complex Problems. Another external constraint related to finding the right sources, and the internal constraint of journalists’ cognitive frames and professional background, is complex problems. Good solutions journalism is difficult because problems, especially those as large and nuanced as climate change, are complex, as Reporter B explained:

“I think topic can also be a constraint ... [for some issues] it’s easy to find people, individuals, who care about this issue. I think it can get harder when you get to some more abstract stuff or with the oil sands, for example ... there’s nothing really like the oil sands anywhere else in the world. So, it’s a hard case study to compare, what do we do with all the tailings, when there’s really no known solution for what we can do with tailings. And so, in some ways the topic can make it difficult.”

While reporters are interested in pursuing solutions stories because of the value to their audience, they are also wary of how to present solutions, without falling into public relations (PR) or “feel-good stories” as described by Reporter A:

“I set boundaries for myself to make sure that I’m not just always chasing what could be a fanciful feel-good story, because sometimes solutions reporting, it’s harder to quantify its value. Rather than yes, we know what happened and so we wrote about it ... or we’re going to do an analysis on it. Those are very easy to measure the value of versus I’m going to put all this time towards this one thing that no one’s really paying attention to.”

The nuance of most social problems means that it’s unlikely that the entire problem can be addressed in one solutions journalism piece, which is why limitations should be included, with Reporter C suggesting, “You do have to be careful about how you’re presenting these things.”

Abstract problems that have evidenced-based results can be difficult to find solutions for. For problems like climate change, many proposed solutions are still theoretical because they have not been put into practice yet, as Reporter A said, “Sometimes there’s a challenge when really, things are very bleak and you can’t really find any really good solutions or something that’s been put into practice, sometimes it’s hard to find a solution.” To minimize the harm by reporting on a solution, this again requires more thorough research and time than traditional reporting does.

Although problems are complex, solutions journalism can also be used as a tool to tie a story together. Reporters mentioned that stories that are “naturally a solutions story,” such as a story about Indigenous wildfire mitigation practices are easier to report on. When the story is focused on how a problem is impacting people—the social aspect of the problem—then the response to the problem follows naturally, and the story can be framed around the response rather than just the impacts, as Reporter E said:

“It’s the choice and the topic, which is different. So, choosing to do the story where you’re going to focus on solutions... I think that [even if they started with a problem lens], it still would’ve led to not just the impacts, but what [people] were doing about it ... that’s just how I [typically] would [approach] stories.”

Impact on Audience. All other constraints, both internal and external, connected to the external constraint of providing journalism that is valuable and impactful for their audience. This is especially prevalent in the context of solutions reporting. The perceived reception from the audience to solutions journalism by the interviewed journalists was mixed. On one hand, the value to the audience was frequently cited as a reason to frame a story from a solutions lens, as a means to “give a lot of hope” or “provide a story of victory” and also provide “news you can use” that is approached by “thinking about how we can give something to the readers that they can turn around and immediately apply in their life” or tangible actionable steps the audience could take away from the article. Reporters use solutions journalism to have a positive impact on their audience, as Reporter A said:

“How do we still cover the news while also not stepping away from hard news reporting, but also trying to lift people up a bit more rather than just showing them how broken the world is. Suggesting or showing ways that we could fix it.”

Reporters felt that there was an appetite for solutions from their audience, especially if the audience was already climate-minded. For example, Reporter B said, “I looked at really big government-wide policies and then zoomed in on the more individual stuff because that’s also something we know that our readers will be interested in as very climate-minded people.” Several of the reporters recalled the solutions piece performing well online.

On the other hand, particularly in cases where the article did not perform well online in the recollection of the reporter, they cited a lack of interest in climate from the audience, saying, “I just think a lot of people are in denial or they’re just not interested.” They also suggested a lack of engagement due to “audience fatigue,” or a lack of incentive to implement solutions. Reporters suggested that solutions stories are “not controversial enough” to generate online engagement, and that when there is online engagement, it can be negative. This connects to the Complex Problems subcategory, where solutions reporting is difficult because there isn’t a one-size-fits-all solution to climate change, and reporting needs to reflect that, despite the perceived idea that audiences are looking for a “silver bullet” solution, as described by Reporter A:

“Every time you’re like, look at this cool thing we can do, everyone just wants to yell at you because everyone seems to feel like unless there’s a silver bullet, they don’t want to hear about it. So, you come up with this solution and it’s really exciting and it’s here’s how we could improve this thing and then everyone’s like, but it won’t fix everything.”

Again, reporters used their personal values and beliefs and wariness of their own expertise when implementing solutions journalism, because ultimately, they don’t want to platform a solution that could have a negative impact on the audience, as Reporter C said:

“I’m giving a platform to a solution that might have some unintended consequence I didn’t think about. So that part, it’s scary. It has to fit with what I experience, and that seems, okay, this is not going to harm anyone.”

Regardless of the audience reactions, all reporters said that one of the biggest things driving their solutions reporting is the impacts on people, with Reporter A saying, “It’s not just that the environment is being polluted and that is important, but it’s that people are being poisoned... at the end of the day, I care about people the most.” Reporters suggested that they are most pulled to stories that “felt more like a social justice angle” or stories about environmental justice and environmental racism in the context of climate change reporting. For example, Reporter A said:

“I do really like talking about social justice. And I think environmentalism, because it’s not really social justice, but maybe environmental justice, I also get really inspired by because I think it’s very wrong, the harms we are inflicting on the world ... environmental racism, I really want to chase those stories when they come up because we really don’t talk about it enough. And so, I really like going after stories that explain environmental racism because that’s something that readers don’t seem to understand is a problem.”

When asked if they would change anything about their story, reporters suggested they would have focused even more on the human impacts by getting “more in-depth commentary” as well as “highlighting more of the history” behind the solution being reported on.

4.2.3 Intentionality

All internal and external constraints impacted how intentionally solutions journalism is applied by journalists and alternative media newsrooms in the frame-building stage of developing an article. Although all the reporters interviewed were selected based on having written a story that score a 3 or a 4 in “solution-ness,” not all the journalists reported using solutions journalism intentionally. They may not have received formal training for solutions journalism but were instead informally aware of the practice through their professional life, saying “solutions journalism was on my radar, but it wasn’t something I was actively practising” and “I remember a few years ago reading articles about it and through some other work, but I guess maybe it’s more informal... I know I have read something about it, but I didn’t use that necessarily as a guideline.” As noted above, solutions framing result of their story was instead due to their own personal values and style, prioritizing positive or supportive reporting rather than solutions journalism per se.

This resulted in some uncertainty about the full definition of solutions journalism, and a proclivity to prioritize “solution-ness” in a story, rather than hitting all the markers of good solutions journalism (leading with the solution, including limitations, evidence of results, communicating broader insights):

“With solutions journalism, one thing I was never entirely clear on is, because it’s just about having a solution included, it’s also a bit about the framing and framing it through the lens of the solutions. So, I think there are stories I’ve done where it does include solutions journalism aspects, but I don’t know that it would cross that threshold into being solutions journalism because it’s still framed through more of the problem lens.”

A focus on prioritizing “solution-ness” rather than solutions journalism was evident for reporters that had a medium level of intentionality in implementing solutions journalism. These reporters actively strived to include solutions elements but weren’t totally dedicated to providing a bread-and-butter example of solutions journalism. Meeting the full criteria of solutions journalism was not the priority for these reporters, and instead they focused on providing solutions in a way that would provide a benefit to their audience. Instead, there was a focus on including solutions elements in a way that worked best for the particular story and could vary based on the complexity of the topic, and the scope of the solution included, saying, “I just do what makes sense to do [for the particular story]” and “I try when I can to integrate solutions. But it depends on the story really.” and:

“We got good feedback on it and so it did make me realize that when you give people just a bit of the solution, even that is helpful. Yes, it would be great to have it all spelled out perfectly, but doing something is better than doing nothing in terms of trying to inject a bit of that into your work ... sometimes perfect is the enemy of good.”

Where intentionality was high, in several cases the reason for writing a solutions story was because they had already covered the problem as a part of a larger series of stories, as one reporter said: “It was because I was following it. It was an update on the story ... we’ve been reporting on the problem, and this played into the solutions bit of it.” Another reporter expressed similar reasoning saying: “It was part of a larger series. I think I’d done a couple of articles before, focusing on different aspects of it, which is what helped build a bit of the expertise to be able to do this.” Newsroom routines and support were also linked to higher intentionality in cases where journalists were told to find a solutions angle by their editors:

“They wanted me to frame it as a solutions-based story. They wanted me to highlight the different, one of the solutions to [story topic] here ... it was something that they wanted me to do, I think it was part of their series that’s dedicated just to solutions-based journalism.”

Regardless of intentionality, all reporters gave an accurate definition of what good solutions journalism is, even if they weren’t fully cognizant that is what they were describing. For example, they all described solutions journalism as reporting on the response to a problem, emphasizing the need to provide clear limitations and provide evidence of successful results, such as:

“Highlighting problems, but through the lens of what people are doing to solve those problems. Not in a really rosy way that overlooks the great nuance that every problem presents, but in a way where you can take away lessons learned.”

And:

“Solutions journalism is pointing out how we could fix a problem rather than letting everyone know about a problem. That can be done in several ways. It can say, look at this small group that is doing this thing, which is working here. Could we scale up this thing that is working? You could say, look at that place over there that is doing that thing that is working. What would it look like and what would it take to bring it here? Basically, finding an example of something that is making a difference.”

4.2.4 Summary

The reasons for implementing solutions journalism can be analyzed using frame-building theory, in which frames are chosen due to internal and external constraints. These constraints can be further defined using the hierarchy of influences model. The internal constraints include newsroom routines and management (news values, support, and resources), which are influenced at the routines and organizational levels, and journalist cognitive frames (personal values and beliefs, professional background, and intentionality), which are influenced at the individual level. The external constraints include finding the right sources, the impact on the audience, and the complexity of problems, which are influenced at the extra medial level.

The most important news values in the alternative media newsrooms studies were found to be stories that fit under “the unusual” category. Alternative media are defined by their reporting on stories commonly overlooked by the mainstream media, and their mission to serve the communities that make up their audience. Solutions journalism is reporting that centres on a response to a social problem, leading to a social or human angle applied to climate and environmental stories. Reporters indicated a proclivity for caring about the impact their stories have on their audience but did not always intentionally apply solutions journalism guidelines even though their reporting was solutions oriented. The solutions framing that manifested in the article they wrote was instead the product of their personal values and professional background, prioritizing positive, supportive reporting and providing value to the audience. When journalists were intentional with their use of solutions journalism, it was also due to their personal values and professional background, but these values were further supported by organizational support and resources that were provided by editors and managers that actively prioritized solutions journalism in the newsroom.

Solutions journalism is made more difficult due to the complexity of problems, which both make it difficult to find the right sources and interacts with the journalist’s cognitive frames which are shaped by their personal values and professional backgrounds. Solutions journalism is made easier by the newsroom routines of the alternative media studied, especially the level of support and resources the reporters receive to implement solutions journalism confidently and intentionally.

4.3 Convergent Analysis

The results from the quantitative data and qualitative data in both phases of the study indicate some gaps between what journalists actually do and how they perceive what they do, particularly in the types of solutions they report on.

First, the journalists interviewed indicated that most of their solutions reporting was centred around examples of adaptation solutions, while the quantitative data indicates that most of the stories included in the study (62%) are examples of mitigation (solutions that reduce emissions). As many reporters did not identify themselves as climate reporters and were therefore wary of their level of expertise to report on climate solutions, this may be a reason why there is a disconnect between the results of the content analysis and the participants’ responses in the interviews. If they did not identify as climate reporters, they may not have had a clear understanding of the differences between mitigation and adaptation solutions, which is linked to the constraint of Complex Problems and The Right Sources. There is also some overlap between adaptation and mitigation solutions, in that sometimes (or in 8% of the articles included in the content analysis) a solution is both a response to the impacts of climate change, while also reducing emissions. An example of this type of solution would be planting more trees in

cities. Trees sequester carbon (therefore reduce carbon in the atmosphere) and provide shade during heat waves (therefore are a response to the impacts of climate change).

There was also a gap between the number of individual-level solutions found in the content analysis versus the scope of solutions journalists recalled including in their solutions reporting. Less than 10% of articles focused on an individual level solution, although reporters said they thought individual level solutions had a greater hook for the audience. It should be noted that often individual level solutions can be expanded to the community or community-level solutions can be expanded to the systemic or national level, but articles in this study were coded based on the focus of the story. Though reporters said they preferred finding systemic solutions, as they have a greater impact from a wider social justice lens, only 35% of articles focused on a systemic solution. An example of a systemic solution is a story about carbon taxes, while a community-level solution could be a story about a community garden, and an individual level solution could be a story about climate-friendly home retrofits. Most stories in the content analysis (54.6%) were found to focus on a community-level solution, rather than individual or systemic. Most reporters indicated their solutions-reporting tended to focus on a mix between individual and systemic but did not specifically prioritize solutions at the community level. This indicates a disconnect between Journalist's Cognitive Frames, and Newsroom Routines and Management, as working for a regional outlet means that the newsrooms would prioritize stories with a focus on the community level, as that scope aligns best with newsroom values.

A focus on community-level solutions as observed from the content analysis and constraint of providing the value to the audience found in the interviews with reporters supports the proportion of issue linkages found in the content analysis. Issue linkages with more of a national-level orientation, such as defence and international relations, were included in a relatively low proportion of stories. Although reporters indicated that they felt systemic or national level solutions were most impactful, they did not report on issues at the national level as much as issues at the community level. For example, issue linkages with regional impacts, such as land and water management and Indigenous knowledge, were relatively high.

Quantitative data from the content analysis did align with the Journalist Cognitive Frames and Newsroom Routines and Management identified from the interviews where journalists emphasized prioritizing social justice, "the unusual" and counter-narratives. This resulted in a relatively high number of climate solutions stories linked to social change or transformation, such as articles focused on changing the way society views suburbs, articles discussing a degrowth economy, or articles representing marginalized communities such as Indigenous communities through a positive, solutions lens rather than a negative, problem-oriented lens.

Another zone of convergence between the qualitative and quantitative data in this study is the prevalence of solutions-oriented stories versus the proportion of stories that meet the full criteria of solutions journalism. The content analysis from Phase 1 resulted in only 12% of stories that fully met all criteria of solutions journalism, as defined by the Solutions Journalism Network (2022). The rest of the stories that partially met the criteria (receiving a score between 1 and 3 in "solution-ness") made up 26% of the subsample. This can be connected to the intentionality of journalists and newsroom routines and management prioritizing solutions-oriented stories. Meeting the full criteria of solutions journalism was not the priority for these reporters. Rather there was a focus on including solutions elements in a way that worked best for the story and could vary based on the complexity of the topic, and the scope of the solution included. As reporters still valued the central tenants of journalism, the result was still a strong solutions journalism story, even if the criteria of solutions journalism were not necessarily actively followed.

Chapter 5: Discussion and Conclusions

The results of this study provide insights into how Canadian alternative media outlets apply solutions journalism to climate and environmental reporting. This chapter will reflect on the limitations and implications of the results and provide recommendations for future research.

The results indicate that journalists in Canadian alternative newsrooms use solutions-oriented framing in over a third of all climate and environmental articles, but only meet the full criteria of solutions journalism in 12% of their climate and environmental reporting. Most of the solutions they report on are mitigation solutions, at the community-level, and most commonly intersect with land and water management, Indigenous Knowledge, energy, and the economy. As most of the outlets included in the study are small, regional outlets, intended to serve the interests of specific communities, it is expected that most solutions are at the community level. Interviews with journalists that produced solutions-oriented articles indicated that the building of solutions journalism frames is constrained by the complexity of topics which may be difficult to find the correct sources for, valuing the impact the solutions-framing will have on the audience, the level of newsroom support and resources journalists receive, and journalist's personal values and professional backgrounds. These constraints all contribute to the journalist's intentionality in implementing solutions journalism, which may be low, medium, or high depending on how the constraints impacted them.

5.1 Solutions Journalism in Climate and Environmental Reporting

In the first phase of this study, a content analysis was conducted to determine the proportion of climate and environmental articles published by six Canadian alternative media outlets in 2022 that use a solutions-oriented framing. The types of solutions included in these stories were also examined, based on the scope of the solution, whether the solution was an example of mitigation or adaptation, and in what sectors these solutions are linked. The results indicate that the alternative media outlets included in this study report on climate or other environmental issues in 44.6% of all articles. While the averages across the included media outlets range from 11.4% to 100%, all outlets cover climate and the environment significantly more than mainstream coverage on the global scale, which is generally around 0.53% (Hase et al., 2021). This may be due to the role and ability of alternative media outlets to cover niche topics more frequently, while mainstream media coverage is implicitly more generalized.

As these outlets were chosen due to their existing initiatives, missions, and mandates to include solutions journalism in their reporting, the results of over a third of climate and environmental stories including some degree of solutions orientation was expected. This result is higher than in mainstream coverage, where media (in the US) has been found to mention a solution to climate in only one out of five climate stories (Macdonald & Hymas, 2019), though Guenther et al. (2022) have found that news frames in climate coverage globally are shifting away from negative coverage or a "Global Doom" frame towards more solutions-oriented coverage, or a "Sustainable Futures" frame. The prevalence of solutions framing the alternative media articles studied can be interpreted in tandem with results from the interviews in phase 2 of the study, as the news values of a newsroom impact the news frame that manifest in the text.

Reporters interviewed in this study indicated strong news values for stories that are out of the ordinary and felt constrained by the impact their stories have on their audience, in that they felt strongly about providing value to their audience. Solutions journalism could be a

powerful tool in reaching audiences and inspiring them to act on climate change, rather than playing into the compassion fatigue and the disengagement that results from an overemphasis on negative coverage (Reuters Institute, 2022). While presenting social problems as solvable versus unsolvable have both been found to increase the audience's willingness to take action (Kogen & Dilliplane, 2017), a solvable framing is more ethical as it does not rely as heavily on eliciting sympathy by exploiting the trauma of the particular group or individuals faced with the problem. As such, the proportion of solutions-oriented climate and environmental stories in the study sample was relatively high compared to mainstream media (38% in this study vs. 20% found in American media by Macdonald & Hymas (2019)), which may be attributed to the ability to use solutions journalism to provide a counter-narrative around an issue that is commonly presented through a negative lens in mainstream media, as well as a way to uplift marginalized communities.

The alternative media outlet with the lowest proportion of solutions-oriented stories was *The Narwhal*, which may be because much of the focus of *The Narwhal's* reporting is investigative journalism according to their mission statement. This type of journalism is very close to solutions journalism, but the complex problems covered may be difficult to apply a solutions lens to because, as reporters indicated in the interviews, there may not be any existing solutions with evidence of results for the reporters to frame a story around.

The most common sectors linked to climate and environmental solutions are energy and land and water management, followed closely by economic solutions and solutions that involve Indigenous Knowledge. Economic and energy solutions were often presented together in the same news story. This was expected, as Canada is a country with an economy built around natural resource extraction, and so it is understandable that the types of solutions included in climate and environmental reporting are primarily centred around economic and technological solutions. This is consistent when looking at climate change coverage (not just solutions reporting), where the focus is primarily on policy at the national level, followed by energy and economics (Callison & Tindall, 2017; Davidsen & Graham, 2014). However, the prevalence of land and water management stories, often linked with solutions that include Indigenous Knowledge, indicates that alternative media also prioritize solutions related to conservation and social change. The relatively large proportion of solutions stories linked with Indigenous Knowledge is largely due to the inclusion of *Indigenews*, which centres all its stories around Indigenous issues. Stories about Indigenous knowledge were often tied to land and water management stories, to present alternative solutions to land and water management other than Western strategies.

The types of solutions included in terms of issue linkages may also be understood by the scope of solutions included. For example, contrasted to the issue linkages found in Achong and Dodds's (2012) study of mainstream media coverage of climate change, the alternative media in the present study linked climate solutions to international relations far less than mainstream media (8% of stories vs. 29%-36%). The lack of focus on international relations by alternative media is probably due to the regional scope of most outlets included in the study, which lends to more stories at the community level as those would be of the most interest to their audience. For example, *The Sprawl* focuses its coverage on Calgary, while *Indigenews*, *The Discourse*, and *The Tyee* primarily focus on British Columbia. *The Narwhal* and *The National Observer* have a national scope but also include regional stories. A greater number of community solutions rather than individual solutions may also be due to the Canadian context. While solutions journalism has origins in the United States, and Canada is closely tied ideologically to the United States, Canada tends to have more socialist policies. This suggests that solutions reporting in Canada

may differ from the US by having a stronger focus on community-level actions rather than individual ones.

Another difference from the issue linkages in Achong and Dodds's (2012) study of mainstream media coverage of climate change is that the alternative media in the present study included far more solutions related to social order/transformation (24% vs. 0.27%). The greater amount of focus on solutions that require social change aligns with the role that alternative media play as disruptors of the status quo and focuses on non-dominant discourse (Bailey et al., 2008). Alternative media are better positioned to comment on social change because they are reporting from the margins of society and bringing in alternative viewpoints.

Finally, the solutions included in the content analysis were predominantly examples of mitigation or solutions that reduce emissions, rather than adaptation, which are solutions responding to the impacts of climate change. As Canada is one of the top 10 emitters of greenhouse gases contributing to climate change (Friedrich et al., 2023), it follows that most of the climate solutions heralded by the media would be solutions related to mitigation as Canada needs to take part in a significant economic and cultural shift to get to net-zero emissions by 2050. Though Canada has started to feel the impacts of climate change, it has been less so than in other countries so far (Eckstein et al., 2021), and so the focus has not yet had to be on adaptation solutions, although these will become exceedingly necessary as communities begin building resilience to climate impacts.

5.2 Journalist's Perspectives on Solutions Journalism Frame-Building Processes

Following the content analysis, journalists from the alternative media outlets included were interviewed to gain a deeper understanding of the frame-building process that leads to a solutions-oriented article. The journalists selected were those that had written a strong solutions-oriented article that was included in the content analysis. Interviews were coded using thematic analysis using de Vreese's (2005) process model of framing and adapting Shoemaker and Reese's (1996) hierarchy of influences model. This led to identifying the internal (News Routines & Management and Journalist Cognitive Frames) and external (The Right Sources, Complex Problems, and Impact on Audience) constraints. All these constraints were found to impact the intentionality of journalists in implementing solutions journalism during the frame-building process.

Internal constraints include individual, routine, and organizational levels of influence. In the context of this study, routine and organizational levels of influence are categorized under News Routines & Management, and individual levels of influence are categorized under Journalist Cognitive Frames. The solutions journalism frames in the text were implemented due to news values that prioritized a solutions angle to provide a counter-narrative and unique angle to a story as an alternative to how a story is portrayed by mainstream media. Journalists described solutions journalism as requiring more time to implement, so it was necessary to have newsrooms that were supportive by allowing for flexible deadlines and providing resources such as training for solutions journalism so that journalists in their newsroom could more confidently implement solutions journalism. Reporters described collaborative newsrooms where they had free rein to pursue stories. The circumstances of alternative media may make solutions journalism easier to implement because the missions of these newsrooms already prioritize alternative methods of journalism and exist to fill a gap in mainstream media coverage. As early adopters of solutions journalism (Daoust-Boisvert et al., 2023), alternative media have also had

more time to normalize solutions journalism routines in their newsrooms compared to mainstream media. However mainstream media are starting to experiment with solutions journalism in an effort to remain competitive (Daoust-Boisvert et al., 2023), and therefore could learn from and adopt strategies implemented by alternative media to produce better solutions journalism articles.

The personal beliefs and values of journalists were also key to the frame-building process of solutions journalism. As Engesser and Brüggemann (2016, p. 827) suggest, the cognitive frames of journalists are especially important to “the media coverage and public understanding of climate change.” Journalists pursued stories based on their personal experiences and connections to the subject, choosing a positive, solutions-oriented framing to uplift their audience. Their audience was often a community that they themselves were a part of and so choosing a solutions angle was also done to uplift themselves. These results suggest that in addition to implementing alternative forms of journalism such as solutions journalism, reporters are less beholden to the normative journalistic value of objectivity, and instead allow their subjective experience to guide their reporting, while still adhering to other journalistic values such as transparency, accountability, and independence. This does not mean that they neglect to report on facts or only report on “feel-good” stories. By practising strong solutions journalism, which requires including limitations and evidence, reporters use the positive, solutions framing to balance out problem-focused reporting and provide a more accurate reflection of the world and empathizing with the experiences of their audience.

The professional background of journalists also influenced how they reported on climate and environmental topics, with many of the reporters feeling a lack of expertise to confidently report on climate solutions from a strict climate angle. This is consistent with the literature, as Strauss et al. (2022) found that reporters covering climate change in Europe were primarily made up of generalist reporters rather than specialists. Many of the reporters in this study were not identifying as climate reporters specifically, but rather focusing on a range of issues, citing social justice as the main driver of their work. The solutions angle tied the social justice and climate pieces together. These results suggest that solutions journalism can be used as a tool to implement climate stories across many beats, and not just relegate climate solutions to the science or environmental sections of news websites.

The external constraints represent extra-medial levels of influence, including sources and audiences, with the addition of complex problems. While reporters indicated that the value and impact on their audience were important to their reporting, the reliance on and access to expert sources was still a key determinant identified by journalists as a constraint for good solutions journalism, rather than allowing members of the public to have a more direct role in climate change discourse. This is supported by results from Schäfer and Painter (2020), which suggest that climate change remains framed as an elitist issue exclusive to scientists, activists, and politicians. However, the community-level solutions provided in over half of the solutions stories indicate that members of the public play a greater role in shaping climate discourse for alternative media. For example, one of the stories written by a reporter included in the interviews was about how local farmers are adapting to climate change, therefore centring non-elite voices of the community.

The focus of reporters on valuing the impact on their audience in their solutions reporting can be further examined through framing theory. Framing includes both frame building (the actors constructing how information will be portrayed, such as journalists) and frame effects on the recipients of that information (de Vreese, 2005). The cognitive frames of specific actors in the news-making process (various interest groups in the form of sources, journalists, and

audiences) help individuals process information. These frames manifest themselves in the structure of news stories as news frames, which can be explained as “the product of professional collaboration and represent a mixture of different social and cultural frames, actor frames, editorial frames, and journalist frames” (Engesser & Brüggemann, 2016, p. 828). All these frames influence each other via feedback processes because journalists and audiences are pulling from the same cultural reservoirs to construct their frames (Scheufele, 1999). This means that journalists influence how audiences process information by framing a news story in a particular way based on their own cognitive frames, newsroom frames, and the cognitive frames of expert sources. Audiences can reciprocally influence journalist’s cognitive frames and newsroom frames via their response and engagement with content, and the journalist’s interest and feeling of responsibility and ownership over how they impact their audience. Thus, internal and external constraints on frame building are equally important in the development of a news frame because of these interacting stimuli impacting frames at both the individual and cultural levels. In the context of this study, this means that journalists are constructing a solution framing to satisfy their own desire for positive news, and due to the perceived value of solutions-oriented news to their audiences. In turn, they perceive audiences as looking for and engaging more with solutions-oriented stories.

Much of the results from the interviews with reporters aligned with Lough and McIntyre’s (2018) research on journalist perceptions of solutions journalism. Journalists in both studies perceive solutions journalism as requiring extra analysis, similar to investigative reporting, and is made easier with less complex topics. Lough and McIntyre (2018) also found that journalists continuously cited audience impact and engagement as a justification for implementing solutions journalism and that newsroom support was a key factor in journalists’ ability to implement solutions journalism. A key difference between the studies, however, is that Lough and McIntyre (2018) recruited journalists directly from the Solution Journalism Network’s database, and therefore all journalists interviewed had thorough knowledge and training in solutions journalism, unlike the reporters in the present study. This difference brought in the concept of intentionality as being key to the solutions journalism frame-building process.

The intentionality of journalists to implement solutions journalism was impacted by all external and internal constraints in the frame-building process. Journalist cognitive frames influenced intentionality in how their beliefs and professional backgrounds set them up to pursue solutions journalism. News routines and management impacted intentionality based on the level of support and resources to implement solutions journalism provided by editorial teams and management. Sources impacted intentionality by providing the idea for a solutions angle to the journalist. Intentionality was impacted by the complexity of problems in that the topic was seen as a constraint where it was either a “natural” solutions story (a story about wildfire management strategies) or didn’t have an existing solution to apply (a story about government accountability). Audiences are also central to the intentionality of applying solutions journalism in that a solutions angle was chosen to provide value to the audience, and audiences were perceived as wanting to see more solutions-oriented articles.

All these constraints resulted in varying levels of intentionality that were apparent in the interviews with reporters of solutions-oriented articles. Regardless of intentionality, solutions journalism was still the result for all reporters that were interviewed. Low intentionality can lead to a solution framing because a solutions-oriented article can arise out of many different methods of journalism that are similar to solutions journalism in that they prioritize audience impact. These include peace journalism, constructive journalism, and trauma-informed journalism. The personal style of the journalist can lead to a solutions-oriented piece without using solutions journalism guidelines, if the journalist is still adhering to the central tenants of

journalism (accuracy, transparency, accountability, independence). Journalists who applied a medium-level of intentionality were prioritizing solutions-oriented reporting, but in a way that was most practical to the topic they were writing about, rather than worrying about meeting the benchmarks of solutions journalism (2 reporters). That's not to say that following solutions journalism guidelines is not beneficial and important, but providing a framework may be more beneficial in an academic sense rather than in practice, especially due to the limited time and resources reporters have and the extra time that solutions journalism takes. Journalists who applied solutions journalism with a high-level of intentionality had either received formal training in solutions journalism (one reporter), or informal training through newsroom discussions and editor priorities (one reporter) and applied solutions journalism to provide balanced coverage of an issue after reporting on the problem as part of a larger series of coverage.

5.3 Implications for Applying Solutions Journalism to Climate and Environmental Stories

The results of this study have implications as to how media can implement solutions journalism in climate and environmental stories, and how scholars think about how the frame-building process occurs in the context of solutions journalism. The results are significant to the frame-building side of the process model of framing, as they include the addition of intentionality as a key part of how internal and external constraints influence how frames manifest in news stories. Internal and external constraints in the frame-building process can impact how intentionally a reporter applies a frame. Regardless of the intentionality of the reporter, a similar framing can result in the text due to myriad factors inside and outside the newsroom. This finding supports a key assumption to Shoemaker and Reese's (1996) hierarchy of influences model, in which it is stated that "some influences on content are intentional and others occur as a result of other actions" (Shoemaker & Reese, 1996, p. 252). The results of this study indicate that this assertion is also relevant when applying solutions journalism.

The early adoption of solutions journalism by alternative media in Canada may also be significant to the results of intentionality present in this study. Formal definitions of solutions journalism are still emerging in literature and in practice. The outlets included in this study all have solutions initiatives that may be better described as solutions-oriented rather than indicating a strict commitment to the constraints of solutions journalism definitions. Thus, while solutions-oriented frames are prioritized and present in reporting, journalists may not have received enough training to intentionally implement bread-and-butter solutions journalism. Instead, the emergence of solutions framing in texts was due to a journalist's personal preferences of prioritizing positive, supportive reporting on the communities they cover, and approaching stories from personal experience rather than prioritizing objectivity. This follows postmodern critiques of the public sphere in which the personal is considered political, and arguments that journalism, and alternative media in particular, should be "open to the widest range of narrative styles and perspectives, especially those emerging from the margins of society" (Benson, 2008).

Though alternative media are leaders in this regard, several of the journalists that were interviewed said that many of the people that make up alternative media audiences are already climate-minded people that don't need to be convinced of the science of climate change and are at the point where they are already looking for solutions. Alternative media often act as leaders of platforming new ideas and implementing innovative journalism practices, but for meaningful societal-level changes to occur, mainstream media also need to be adopting these practices as they have a much wider reach. Climate change coverage has increased, and the alternative

media in this study have a relatively high proportion of stories dedicated to climate and the environment, but this has not been enough to incite meaningful action, as emissions are still increasing (International Energy Agency, 2023). Vu et al. (2019) suggests that beyond salience, the way the media frames climate change is also important.

Solutions journalism could be an important tool to further engage audiences in the issue of climate change, regardless of a reporter's beat. McCluskey (2008) suggests that the frames journalists produce differ depending on their specific beat, meaning that science journalists will frame a climate story different than a political journalist. However, the journalists included in this study did not have a unified beat that all of them reported from, and yet all of them constructed a solution framing. As solutions journalism is defined as reporting on a response to a social problem, and climate change intersects with all aspects of society, solutions reporting can be used to talk about climate across many intersecting issues. This suggests that solutions framing may transcend beat and could be used as a tool to integrate climate reporting across all types of news stories, rather than being relegated to a science or environment beat that may not reach as many people (Covering Climate Now, 2023).

This study also indicates that the types of solutions reporters choose may also be significant to engaging audiences. Reporters indicated that they believed individual-level solutions are easier to report on as they are more compelling to the audience, while they believed systemic solutions were the most impactful. They suggested that sometimes an individual-level solution could be used as a hook, and then the story can expand to include wider reaching community or systemic-level solutions. While systemic solutions to climate change are necessary to reduce the bulk of emissions and mitigate the effects of climate change, Ivanova et al. (2020) indicate that a substantial amount of emission reductions can be achieved by changing individual consumer behaviours. Kukowski et al. (2023) found that there is considerable behavioural plasticity in "high-impact behaviours" indicating a potential to change individual behaviours that have previously been untapped. As using constructive (and by extension, solutions) journalism can illicit higher levels of positive and inspirational responses and engagement from millennial audiences in particular (Hermans & Prins, 2022), climate journalists may have the opportunity to tap into this potential by focusing more on individual-level solutions that are directly relevant to the audience's lives, and that journalists already perceive as having a greater value to the audience. Scannell and Gifford (2013) have also suggested that relevance to people's lives is an important predictor of engagement with climate change communications, as communicating the problem from a local scale facilitates engagement from individuals that have a strong place attachment.

In fact, climate communicators at The Cool Down (Thompson, 2023) analyzed online content and found that audiences engage the most with positively framed climate stories on the individual level. Their findings also suggest that climate communicators should play into people's self-interest (stories about risk awareness and disaster preparedness perform 40% better), focus on baby steps (stories about small ways to consume more responsibly received 96% more engagement), highlight people's neighbours as "climate heroes" rather than celebrities (content framed around the everyday person performed 270% better), and to focus on solutions related to a circular economy (these types of stories were found to receive 104% more engagement). This evidence further supports that alternative media is on the right track when it comes to climate journalism because their reporting is centred in their communities.

It should be noted that highlighting individual-level climate solutions should be done without supporting propaganda from the fossil fuel industry that the responsibility to solve climate change falls on the shoulders of individual consumers via fossil fuel-invented concepts such as

an individual carbon footprint (Franta, 2021). Stoddart et al. (2017) indicate that currently fossil fuel companies are notably absent from climate discussions in media compared to other entities such as environmental organizations, indicating a lack of keeping the biggest contributors to climate change accountable. Solutions journalism can be used in accountability reporting, specifically by examining “solutions” that are just greenwashing. It is important for journalists to be vigilant about spotting greenwashing attempts through rigorous solutions-oriented reporting, especially as stakeholder public relations seems to be increasing in global climate journalism (Schäfer & Painter, 2021). This is where solutions journalism criteria such as providing evidence and limitations become especially important. For example, as consumers are increasingly prioritizing sustainability (Bar Am et al., 2023), airline and retail companies have used carbon offsets to appear more sustainable (again putting the onus on the consumer to reduce emissions). However, the viability of carbon offsets as a viable solution to climate change in the timeframe needed to reduce emissions has largely been debunked (Coffield et al., 2022), with the IPCC recommending a shift away from fossil fuels entirely as being the only way to meet current climate goals as opposed to achieving net zero through carbon offset programs (IPCC, 2022). Journalists can use solutions journalism as a technique to examine proposed climate solutions and help audiences determine whether they are legitimate, impactful solutions worth implementing or examples of greenwashing.

Centring social justice, as the reporters indicated in this study, is also important for solutions journalism focused on climate change solutions, as those who are most impacted by climate change are marginalized communities (IPCC, 2022). It is noteworthy that framing around climate change in mainstream media has been found to rarely mention social impacts or climate justice, instead focusing on policy (Stoddart et al., 2016). This may be another reason why alternative media are leaders in implementing solutions journalism, as their role in the media landscape is to centre the voices of the marginalized. Solutions to climate change must include voices from these communities and not leave them behind as they have been historically. For example, before the Paris Agreement in 2015, countries in the Global North were pushing for a limit of 2 degrees warming rather than 1.5, a difference that would mean many island nations would disappear beneath the rising ocean. This would be a great injustice as they have contributed the least to climate change when compared to developed nations (Friedrich et al., 2023). For perspective, the top 10 emitters are responsible for two thirds of global emissions, while the bottom 100 countries only account for 3.6% of emissions (Friedrich et al., 2023).

Countries in the Global South have been suffering the impacts of climate change for a long time and have been forced to implement climate adaptation and mitigation solutions well ahead of countries like Canada. For example, locally led adaptation in Bangladesh has resulted in solutions such as growing salt-tolerant varieties of rice, climate-resilient migrant-friendly towns, and floating schools (Ministry of Environment, Forest, and Climate Change, 2022). Canada is only just starting to feel the impacts of climate change compared to countries like Bangladesh, which have been feeling these impacts for decades already, and thus have been forced to prioritize adaptation. Journalists can look to these countries implementing climate solutions already and apply this knowledge to their solutions reporting as the impacts of climate change increase in Canada. On the other hand, focusing reporting on mitigation solutions can help Canadians understand their role in climate justice, as outsized greenhouse gas emitters, in addition to implementing necessary mitigation policies. While climate justice is largely understood from an international scale, marginalized communities in Canada are also more vulnerable to the impacts of climate change, making the perspective of social justice just as relevant for community-level outlets. By connecting climate change to social issues, journalists can use solutions journalism to examine the nuance of complex problems like climate change

and ensure that proposed solutions aren't at the expense of marginalized communities and provide benefits to everyone.

5.4 Limitations and Recommendations

This study is limited by its small size, having only included data from six alternative media outlets in Canada from one year. Future research could investigate how the findings from this study have changed over time and could expand to include more outlets whether within Canada or make a comparison on an international scale. The results of this study are also slightly skewed due to the inclusion of *The Narwhal*, which has 100% of coverage dedicated to climate and the environment. This means that the average proportion of environmental stories is much higher than the median (44% vs. 19%). This was not seen to be an issue for the purposes of this study, because this study looked at alternative media in Canada as a whole and did not focus on making comparisons between the alternative media outlets studied, and the amount of environmental coverage is still higher than mainstream coverage.

The study is also limited by the ability of the reporters interviewed to accurately recall the news-making process for a particular piece they may have written over a year ago. This was addressed by having reporters review the piece and any notes they had from writing the piece beforehand, as well as by implementing a case reconstruction technique to break down the process of writing the story as specifically as possible. Unfortunately, no reporters from *The Narwhal* were available for interviews at the time of this study, so further insights into the lower proportion of solutions-oriented stories at that outlet are not possible.

Additionally, only a subsample of the climate and environmental stories collected were further assessed for their "solution-ness." It is possible that the reporters had stronger examples of solutions journalism that were not included in the subsample, although reporters indicated that the selected stories were typical of their other work. Finally, some level of subjectivity is inherent to qualitative analysis. This was handled by comparing interpretations to results from other experts and thoroughly reflecting on the conceptualizations of the themes in how they fit into the structure of framing theory defined by the literature.

The constraints identified in this study can help newsrooms adjust their organizational practices to better support solutions journalism frames. Solutions journalism in alternative media newsrooms is practised in a pragmatic way, including solutions elements in a way that works best for a particular story and can vary based on the complexity of a topic, and the scope of the solution included. Again, as one reporter quoted, "Sometimes perfect is the enemy of good."

Newsroom managers looking for ways to implement climate stories across many different beats can use solutions journalism to address the social impacts of climate across many different sectors. Solutions journalism could be an innovative way to expand the salience of climate change in this way, and to better communicate all the different ways the public will be impacted by climate change, from the politics section to lifestyle section.

Future research should investigate whether the findings of the present study are applicable to wider use in mainstream media, and how the frame-building processes related to implementing solutions journalism in alternative media compared to mainstream media, as coverage of climate change solutions cannot stay in the margins. The articles included in the present study's corpus could be further investigated for subframes, tone, and visuals included. Further studies on the framing effects or impacts on audiences, both immediately and in the long term, would also help form the full picture of the benefits and drawbacks of implementing

solutions journalism, especially in the context of climate change and environmental reporting. Audiences' reactions to solutions-oriented stories vs. full solutions journalism stories could also be studied, as well as how audiences engage with various issue linkages to climate solutions.

5.5 Conclusion

Alternative media in Canada produce a significant amount of environmental and climate articles with a solutions angle, but do not always arrive at a solution framing intentionally, prioritizing solutions-oriented articles over textbook solutions journalism. Often, a solutions-oriented framing is used to support alternative media news values by providing a counter-narrative to mainstream media, or covering an issue from a solutions lens that mainstream media may have missed.

The results of this study indicate that intentionality is key to the solutions journalism frame-building process. To improve intentionality and overcome roadblocks to implementing solutions journalism, newsrooms can provide editorial and organizational support and resources. The reporters included in this study described collaborative newsrooms, where they had a lot of free rein to pursue stories and received deadline extensions when necessary. The priority was focused on getting a story right rather than out on time.

This may be a luxury that alternative media can better accommodate than mainstream media due to their position in the media landscape, and in the news cycle. Their audiences are coming to them for stories that take more time to produce, rather than for daily news. That is the niche that they fill in the greater media landscape. Regardless, when editors prioritized solutions stories, had a trusting relationship with their reporters, and when solutions journalism training was provided, reporters were able to implement solutions journalism with greater intentionality and confidence.

Ultimately, solutions journalism was perceived as beneficial to audiences and something that audiences were looking for, with reporters recalling most solutions stories as being well received by both management and audiences. This seems to be especially true in the context of climate and environmental reporting. Though reporters reflected on a degree of climate denial, disinterest, and fatigue in their audiences, solutions journalism can be used to overcome this fatigue and maintain climate change salience through frame-changing by moving from a traditional problem-focused framing to a solution framing.

By using this frame-changing method to maintain climate change salience, solutions journalism could be a tool to integrate climate reporting across all types of news stories. The journalists interviewed did not have a unified beat that they all reported from, and they weren't necessarily climate reporters, yet all of them constructed a solution framing, where climate impacts happened to intersect with a social impact. Reporters indicated that they cared more about social justice and the impacts on people than the environment. The solutions angle merged the social justice and climate pieces of a story, making it more relevant and personal to the reader. As solutions journalism is a response to a social problem, and climate change intersects with all aspects of society, solutions reporting can be used to talk about climate across many intersecting issues.

Climate change is an issue that is impacting and will continue to affect every single person on Earth. A problem that is so complex, abstract and all-encompassing is daunting, and it's easy for audiences and journalists to feel impotent and powerless to do anything about it. But solutions to climate change exist. In the words of Dr. Melissa Lem, president of the Canadian

Association of Physicians for the Environment (Climate Action Network, 2023): “We have all the solutions for a safe and healthy future that respects nature and embraces the co-benefits of climate action at our fingertips. What we need is the political courage and will to choose them.” By practicing solutions journalism, journalists can play a significant role in helping to shape the political will necessary to address climate change.

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Appendices

Appendix A

Keywords used in Boolean query to filter for all climate change and environmental articles.

climate OR environment OR green OR environmental OR energy OR habitat OR wildlife OR warming OR warmer OR emissions OR carbon OR endangered OR CO2 OR offsets OR deforestation OR heat OR greenhouse OR pollute OR pollution OR polluted OR heating OR disaster OR forest OR forests OR fire OR wildfire OR conserved OR conservation OR watershed OR water OR logging OR waste OR wolf OR tree OR world OR nature OR planet OR earth OR river OR lake OR ocean OR greenwash OR salmon OR caribou OR eco OR biodiversity OR renewables OR drought OR flood OR wetland OR hurricane OR electric OR clean OR pipeline OR resource OR land OR old-growth OR stewards OR fish OR fishing OR herring OR plastic OR plastics OR minerals OR mining OR sea OR garden OR emissions OR emit OR net zero OR fossil fuels OR oil OR protect OR solar OR bird OR extinct OR COP27 OR COP15 OR invasive OR species OR IPCC OR sustainable OR extreme weather

Appendix B

Linkert scale from 0-4 to determine the degree of “solution-ness” of an article based on criteria from the Solutions Journalism Network (2022).

Rank	Category	Definition
0	Not at all	Article does not focus on a response to a social problem.
1	Somewhat	Article focuses on a response to a social problem (is “solutions-oriented”), but does not include any of the following elements: -includes limitations or nuance -communicates insight -provides evidence of results connected to problem
2	Moderate	Article focuses on a response to a social problem and includes only one of the following aspects: -includes limitations or nuance -communicates insight -provide evidence of results connected to problem OR Article focuses on a response to a social problem and includes exclusion element (hero worship, silver bullet, favor for a friend, think tank, instant activism, an afterthought, heartwarmer, PR)

3	Very	<p>Article focuses on a response to a social problem and includes only two of the following inclusion criteria:</p> <ul style="list-style-type: none"> -includes limitations or nuance -communicates insight -provide evidence of results connected to problem <p>OR</p> <p>Article focuses on a response to a social problem, includes all of the inclusion criteria AND includes exclusion element (hero worship, silver bullet, favor for a friend, think tank, instant activism, an afterthought, heartwarmer, PR)</p>
4	Totally	<p>Article focuses on a response to a social problem, includes all of the inclusion criteria and none of the exclusion criteria</p>

Appendix C

Criteria for thematic analysis ratings to determine the scope of the climate or environmental solution included in an article.

Level	Criteria
1 (Individual)	Solutions that can be taken by an individual Examples: LEDs, solar panels, EVs, home electrification, individual behaviour changes, planting wildflowers
2 (Community/Regional)	Solutions that can be implemented by a community, on a regional level (provincial) Examples: municipal composting, community solar, local bike lanes, local zoning reform
3 (Systemic)	Solutions that solve more than one problem, 80/20 “multi solving” and are implemented at the regional or national policy or corporate level Examples: incentives to build renewables, high-level tax incentives/rebates, structural and societal level changes