

Providing Science Advice:

An Ethnography of the Council of Canadian Academies' Boundary Work of Recontextualizing
Expert-Produced Scientific Knowledge for Canadian Government Policy-Makers

By

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Abstract

My study is an ethnographic account of the collaborative discursive activity of the Council of Canadian Academies (CCA), a non-profit advisory organization that contracts with government clients to perform “boundary work” which includes taking expert-produced scientific knowledge and transforming and re-purposing this knowledge into a science-based discourse that is accessible and useful for government policy-makers. The CCA works at arms-length from its government clients in producing science-related information for policy-makers, an activity that draws on the expertise of a multi-disciplinary panel of invited outside experts and the CCA staff.

Using data collected at the CCA between 2013 and 2018, I explore the organization’s culture, with a focus on its cultural constructs and tools. More specifically, its representations of key entities such as “science”, “evidence”, and “expertise”. Concentrating my analysis on a 2017 CCA report produced for Transport Canada titled *Older Canadians on the Move*, I unpack the discursive “black box” of what is referred to in the CCA as the “Council Assessment Lifecycle Methodology” (CALM), a cultural tool used by a CCA “staff assessment team” in “recontextualizing” expert-produced science for use by policy-makers. In describing this collaborative activity, I show how aspects of the culture shape the boundary work performed by the panel and the staff team.

Additionally, I use the method of “textography” to identify the types and rhetorical purposes of a series of “intermediary texts” used in producing the report, *Older Canadians on the Move*. I found that the staff team employed multiple iterations of intermediary texts to move the

panel towards agreement on the final report. Lastly, I also consider the influence of the CCA's culture on the twelve rhetorical strategies found in the boundary object of the final report.

For Discourse and Writing Studies, the primary contribution of the research reported on in this dissertation is to have given us a fine-grained perspective on the nature of the boundary work of recontextualizing scientific knowledge for policy-makers. The research has also revealed the influence of a boundary organization's culture on this activity. At the same time, the study has gone behind the scenes to cast light on the various types of interconnected texts that play a key part in this boundary work. Finally, the dissertation has offered scholars in Science and Technology Studies a new understanding of the role of discourse in this work.

For all those striving to finish their doctoral dissertation:

Some advice that helped me along,

“The most important thing about a dissertation is its done-ness.”

- Graham Smart

You can do this, too.

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Chapter 1: Introduction

The world over, government policy-makers rely on scientific knowledge to address complex issues facing democratic societies in the twenty-first century (Borgenschneider & Corbett, 2010; Gluckman, 2017; Hutchins & Stenseth, 2016; Pawson, 2006). Doing so often requires transforming and re-purposing expert-produced scientific knowledge for use by policy-makers, a task described as “boundary work”—that is, a discursive activity aimed at bridging the communicative gap between the conceptual worlds of science and policy (Guston, 2001).

Increasing attention is being given to the boundary work of bringing expert-produced scientific knowledge into government policy-making at what has been referred to as the “science-policy interface” (Saner, 2014) – the overlapping areas between science and policy. Science and Technology Studies’ (STS) scholars have contributed to this discussion from a range of disciplinary perspectives, including the sociology of science and scientific knowledge (Kuhn, 1970; Knorr-Cetina, 1985; Latour & Woolgar, 1986); the rhetoric of science (Gross, 2006; Prelli, 1989) and policy (Asen, 2010; Fischer, 2003); scientific communication and the public (Gregory & Miller, 1998; Irwin & Wynne, 1996); and, the use of science in public policy (Douglas, 2009; Jasanoff, 2012).

One way researchers have conceptualized work done at the science-policy interface is with the term “science for policy” (Jasanoff, 1990; Pielke, 2007; Smith, 1992), or, the uses of scientific knowledge in government policy-making (Guston, 2000; Jasanoff, 2012). One aspect of science for policy focuses on the role of scientists in providing “science advice” (Gluckman, 2014; McNie, Parris, & Sarewitz, 2015). As a form of boundary work, the activity of producing science advice involves different approaches used by different governments (Broström &

McKelvey, 2018; Hutchings & Stenseth, 2016; OECD, 2015). One approach used in providing science-informed advice to governments is through an advisory body closely connected with a national academy of science. Such an advisory body functions as an intermediary, non-government organization (NGO) mandated to interpret expert-produced scientific knowledge and communicate the relevant meaning of this expert-produced knowledge for use by government policy-makers in a form that is accessible and useful to them (Gluckman, 2014).

Two well-known examples of such organizations are the National Academies of Science in the United States' National Research Council and the Royal Society in England's Science Policy Expert Advisory Committee. In Canada, the Council of Canadian Academies (CCA) performs this role by providing science-based advice to Canadian government policy-makers in the form of advisory reports, a kind of "boundary object" (Star & Griesemer, 1989) – that is, an artefact, such as a report, that crosses the boundary of science or policy and is useable in either domain without becoming something entirely new.

Government policy-making is a multi-faceted, solutions-oriented practice in which policy-makers attempt to resolve societal issues (Cairney, 2016; Tehara, 2010; Theodoulou, 2013). In Canada, as elsewhere, policy-making is a political process involving elected and unelected officials in national, provincial, and municipal institutions. At the federal level, Canadian policy is enacted through an Act of Parliament, which involves a process of deliberation among elected Members of Parliament sitting in the House of Commons and unelected Senators in the House of the Senate (Bejerimi, 2010). Policy-making is an activity in which policy-makers use this knowledge to identify and choose between alternative ends and means while weighing competing factors such as public values, cost, efficiency, security, and liberty (Douglas, 2009; Dunn, 2013).

One way that researchers have sought to understand the relationship between the discursive domains – that is, a domain with unique meaning-making practices shaped by shared ways of thinking, acting, knowing, and doing – of science and policy is through the field of rhetoric. Rhetoric is the study of how particular goals are accomplished using language and other symbol systems (e.g., mathematics and visual images) (Smart, Currie, & Falconer, 2014). For scientists, the goal is to produce new knowledge about a particular natural phenomenon (Kuhn, 1970; Prelli, 1989); for government policy-makers, the goal is to develop a solution to a societal issue (Asen, 2010), often by drawing on scientific knowledge throughout the process. The communication of scientific knowledge at the science-policy interface involves attempts by scientists to inform or persuade policy-makers. To understand the nature of the boundaries between science and policy, and the work of communicating across this boundary, we need to consider both sides of the science-policy interface.

The science-policy interface in Canada is a complex ecosystem with multiple actors working both inside and outside government (Doern, Castle, & Philips, 2016; Kinder & Dufour, 2018). On certain issues, such as those that require scientific knowledge to reach a resolution, Canadian government policy-makers may seek external advice from a research organization such as the CCA. Funded by the Canadian federal government since 2005, the CCA works at arms-length from the government to provide policy-oriented advice for policy-makers in different government departments on matters related to science and technology (CCA, 2009, 2019). More specifically, the CCA works as “an independent, not-for-profit organization that supports independent, authoritative, and evidence-based expert assessments that inform public policy development in Canada” (CCA, 2019).

Though the CCA has done work for provincial governments, various non-governmental organizations, and a private organization, the majority of projects completed by the CCA have been for federal governmental departments. For each government-contracted project, the CCA recruits a volunteer external panel of highly recognized individuals from natural scientific, engineering, and/or social scientific backgrounds. The members of this panel collaborate with CCA staff to produce a report for use by policy-makers in the government department or other clients that commissioned the work.

As an external advisory organization, the CCA shares close ties with Canada's three academies of science: the Royal Society of Canada, the Canadian Academy of Engineering, and the Canadian Academy of Health Sciences. These academies, referred to as founding "member academies" within the CCA, play important roles with some members serving on the Board of Governors and Scientific Advisory Committee. Additionally, the CCA has an internal secretariat of staff and an ever-growing number of volunteers who serve on multi-disciplinary, multi-sectoral committees or "expert panels".

Researchers have investigated the nature of scientific discourse and the discursive activities of scientists (Bazerman, 1988; Myers, 1990; Smart, Currie, & Falconer, 2014; Wickman, 2010, 2015). Rhetorical strategies used by scientists, such as analogy, argumentation, framing, metaphor, and narrative represent some of the learnings from this work (Dahl, 2015; Fahnestock, 1999; Graves, 2011; Journet, 2010; Keith & Rheg, 2008). A number of researchers have explored the ways that language is used or the rhetorical aspects of the discursive work of recontextualizing expert-produced science for non-expert audiences (Fahnestock, 2004; Paul 2004). Other researchers have expanded what is known about the uses of science for policy-related purposes (Bazerman, Little, & Chavkin, 2003; Feuer & Maranto, 2010; Martello, 2008).

Research related to the transformation of expert-produced knowledge in one discursive domain has shown how specialized knowledge is reconstructed or “recontextualized” (Linell, 1998) – that is, transformed and re-purposed – as a new form of knowledge as it moves into another domain (Luzón, 2013; Myers, 2003; Rachul, 2016, 2019). The CCA takes expert-produced scientific knowledge from its original context, often a scientific journal article, and transforms and re-purposes it as it moves into the domain of government policy-making. Such collaborative boundary work can be viewed as what Latour (1987) refers to as a “black box” – in this case, the opaque discursive activity through which the CCA recontextualizes scientific knowledge for use by government policy-makers.

To my knowledge, however, no research has investigated the manner in which expert-produced scientific knowledge is discursively recontextualized by a “boundary organization” (Guston, 2001) – that is, an organization that performs boundary work – like the CCA to support the work of government policy-makers.

Focus of the Dissertation

Through an interpretive ethnographic account (Geertz, 1973, 1983; Smart, 2006), my research explores how the Council of Canadian Academies (CCA) performs the discursive activity of recontextualizing expert-produced scientific knowledge from the scientific literature into policy-relevant scientific knowledge that is both accessible and useful to government policy-makers. I will use the example of the CCA to investigate the collaborative discursive activity involved in providing science-informed policy advice via a report provided to its government

clients. Specifically, I focus on the project completed for Transport Canada and the resulting publically available English version¹ of the report, *Older Canadians on the Move*.

Research Questions. The overarching research question guiding my investigation is this: What is the nature of the collaborative discursive activity performed by the Council of Canadian Academies (CCA), as a boundary organization, in recontextualizing expert-produced scientific knowledge originally published in academic journals, along with other forms of evidence, into a new form of scientific knowledge that is comprehensible and useful to government policy-makers?

To answer this question, I address the following sub-questions:

1. What culture-specific constructs and tools are employed by the CCA in its collaborative recontextualization of science for use by policy-makers?
2. What are the roles and social actions of the different individuals involved in this collaborative transformation and re-purposing of expert scientific knowledge?
3. What texts are produced in this discursive activity of recontextualization and what rhetorical functions are performed by these texts?

Through my research, I aim to describe the discursive activity performed collaboratively by the CCA's panel of external experts and CCA staff in accomplishing the boundary work of recontextualizing expert-produced scientific knowledge into a different form of scientific

¹ All CCA reports are publically available free-of-charge in limited hard copies and unlimited soft copies to anyone who is interested. The electronic soft-copy of *Older Canadians on the Move* is available for free through the CCA's transport project webpage: <https://cca-reports.ca/reports/older-canadians-on-the-move/>

knowledge for use by government policy-makers. In addressing these research questions, I suggest that the CCA's culture shapes the science, evidence, and expertise accessed through the boundary work of the CCA's assessment process. These constructs, among others, shape the new type of expert-produced scientific knowledge that Canadian government policy-makers receive in the form of the boundary object known as an "expert panel report". The CCA's discourse both enables and constrains the social actors involved in the boundary work of a CCA assessment *and* the claims made in the boundary object of a CCA expert panel report.

Dissertation Overview

My dissertation proceeds in the following manner: Chapter 2 gives an overview of closely related literature and further contextualizes my study of the CCA's boundary work. In Chapter 3, I present my theoretical framework, which consists of theories of discourse, rhetoric, genre, recontextualization, and boundary work. Chapter 4 discusses interpretive ethnography (research methodology) and describes the methods I used to collect and analyse data, including limitations to my study design. Chapters 5, 6, and 7 present the findings of my study. In the findings, Chapter 5 features my interpretation of the CCA's culture beginning with a description of the culturally-specific constructs and tools found in the CCA; Chapter 6 explores the CCA's boundary work; and, Chapter 7 investigates the rhetorical functions of *Older Canadians on the Move*, the boundary object produced through the CCA's boundary work. Finally, Chapter 8 concludes the dissertation with a summary of key findings, the contributions of my research, the implications for the CCA, and possibilities for future research emerging from my study.

Chapter 2: Literature Review

The five major sections in this chapter identify ongoing conversations in several different bodies of literature closely related to my ethnographic study of the Council of Canadian Academies (CCA). As discussed in Chapter 1, the purpose of my study is to explore the transformation of expert-produced scientific knowledge available in academic journals and other sources of “evidence” for use by policy-makers.

Chapter 2 proceeds in the following manner: I first explore research on boundary work, a term I use to describe certain discursive activities carried out by the CCA. Next, I discuss different perspectives of knowledge and knowing in the discursive domains of science and policy as they relate to the CCA’s work. I then identify relevant scholarship by rhetoricians of science and policy that describes the use of language and other symbol systems in both domains. Then, I discuss how researchers have conceptualized the way such knowledge moves between the domains of science and policy. Finally, I consider the work done by researchers who have examined learnings about the writing done in the domains of science and policy.

Boundary Work

To begin, one increasingly popular way to conceptualize the discursive activities performed by scientists and others at the science-policy interface is with the concept of boundary work (e.g., Howells, 2006; Leith & Vanclay, 2015; Meyer & Kearnes, 2013; Turnhout, Stuiver, Klostermann, Harms, & Leeuwis, 2013). Boundary work was originally conceived of as scientists setting boundaries between the scientific and non-scientific domains (Gieryn, 1983, 1995, 1999). More recently, however, researchers have come to view the notion of boundary

work as occurring specifically between the domains of science and policy (Guston, 2000, 2001). Boundary work typically involves the creation of a boundary object (Star & Griesemer, 1989) that sits between two independent domains and that an individual may use in either domain (Star, 2010). The creation of a boundary object, which is essential to boundary work, can be seen as the site at which cross-disciplinary collaboration occurs (Nicolini, Mengis, & Swan, 2012; Sunderberg, 2007). As an organization performing boundary work, or a boundary organization (Guston, 2001), the CCA creates boundary objects, in this particular case a report, that contain knowledge and information taken from the scientific domain that have been transformed into a new form of expert-produced scientific knowledge for use by policy makers.

Boundary organizations working at the margins of the scientific and policy-making domains, in an effort to connect the two domains, operate with clearly identifiable paths of accountability within both domains (Guston 2001; Jacobs, Nicholson, Murry, Maldonado-Roman, & Gould, 2016; Shleirf & Meyer, 2013). Such organizations are flexible in navigating through and brokering between controversial issues and interests while maintaining a dedication to science and scientific knowledge (Leith, Haward, Rees, & Ogier, 2015). In doing so, boundary organizations “facilitate the complicated exchange of information among scientists, policy-makers, and other stakeholders” (Bednarek, Shouse, Hudson, & Golburg, 2016, 291). Examples of successful boundary organizations have been identified as working in government (Head, Ferguson, Cherney, & Boreham, 2013), non-governmental organizations (Pallett, 2015), and transdisciplinary scientific research (Smajgl & Ward, 2013).

Another way to conceptualize the work of boundary organizations is as a “knowledge broker” (Wegner, 1998). A knowledge broker is a social actor who acts as an intermediary and whose discursive activities facilitate the movement of knowledge between two domains, such as

science and policy (Meyer, 2010; Rudd, 2015; Vignola-Gagne, 2014). In the CCA's case, the panel members are individual knowledge brokers (Wenger, 1998) who bring their knowledge from their "home" domain to the CCA's expert panel. The concept of a "boundary encounter" (Wegner, 1998), an event where actors from the discursive domains of both science and policy interact and collaborate, can help explain the panels that are assembled as these bring together individuals with expertise in different sectors and disciplines to address the sponsor's question.

Knowledge and Knowing in the Domains of Science and Policy

The role of the CCA in brokering scientific knowledge prompts the question of what constitutes knowledge in science, policy, and in the science-policy boundary work performed by organizations like the CCA. Below, I discuss knowledge and knowing, scientific knowledge, policy-makers' knowledge, evidence, and expertise in relation to the CCA.

Knowledge and Knowing. Two helpful ways to conceptualize knowledge in the CCA's boundary work are the rationalist-cognitive view and the social constructionist view. From the rationalist-cognitive perspective, knowledge is either true or not, a fact that an individual knows or does not (Blackler, 1993). In this view, knowledge equates to information and content, which is something that fits my understanding of knowledge as far as the CCA accesses and uses it in performing its boundary work.

From the social constructionist view, knowledge is something constructed through the repeated social interactions of individuals (Berger & Luckmann, 1967; Foucault, 2002a; Jasanoff, 1996; Kuhn, 1970). Knowing is something that is relative to individual experience and is developed through ideas and language. In this view, different forms of knowing are embodied in the actions of individuals, whose cognitive ability to complete a task – an observable form of

knowing-in-action – comprises part of a group’s ability to complete an activity (Blackler, 1995; Engeström, 2015; Hutchins, 1995). Here, knowledge equates to both experience and information that emerge from specific social situations.

These perspectives of knowledge suggest, respectively, the idea of “knowledge as content”, whereby the term knowledge is used as a noun, and the idea of “knowledge as doing”, whereby “knowledge” is used as a verb and is interchangeable with knowing.

Scientific Knowledge. Interestingly, this description resonates with aspects of the sociology of science literature. This literature suggests that scientific knowledge is developed by a “community of inquirers” (Polanyi, 1964) – that is, a group of scientists who collaborate to develop evidence-based collective knowledge using discipline-sanctioned scientific research methods (Kuhn, 1970; Lynch & Woolgar, 1990; Merton, 1973; Mulkay, 1979; Powell, Owen-Smith, & Smith-Doerr, 2011). The resulting scientific knowledge typically takes the form of articles published in expert academic journals, which in turn can become a source of evidence in social debates.

Policy-Makers’ Knowledge. Where scientific knowledge is constructed through observations and experiments, policy-makers’ knowledge is a form of knowing what information is relevant and helpful in the context of making policy-oriented decisions. Policy-making is a solutions-oriented practice whereby elected and unelected government officials seek to implement solutions to societal issues (Cairney, 2016; Saner, 2014). That is, policy-making does not involve creating new knowledge so much as it draws on existing knowledge to implement solutions. Policy-makers’ decisions must reflect the values of the public, which implies that,

unlike science, policy is inherently value-laden (Douglas, 2009, 2012). Policy-makers carry a tacit knowledge of what the public values.

Evidence. As we shall see, the term “evidence” plays an important role in the CCA’s discourse. In the policy domain, evidence consists of any source of credible information that provides insights into issues in need of solutions (Cairney, 2016). Evidence comes from various sources and serves to help policy-makers understand public values surrounding the issue at hand. The use of scientific evidence, a term used in policy synonymously with scientific knowledge, is but one part of policy-makers’ considerations, which include other concerns such as budgetary constraints, the electoral cycle, and the influence of lobbyists (Cairney, 2016). While policy-making needs to reflect the latest technical, scientific knowledge accurately *and* the cultural values of society, scientific knowledge is filtered through the government department’s understanding of societal values (Saner, 2016).

Expertise. Recognized as technical experts who are experienced in their discipline and embody the knowledge gained through their experience (Dear, 2004; Evans & Collins, 2008), scientists are called upon either in person or through their publications to contribute their expertise to policy-related activities (Hessels, van Lente, Smits, 2009; Nowotny, Scott, & Gibbons, 2001), as we shall see later in this study. In contributing their expertise, scientists extend both their explicit knowledge of scientific content and their implicit knowledge of scientific practice (Collins, 2014). This expert-produced scientific knowledge is accessible to policy-makers through the intermediary boundary work of an organization like the CCA. Such boundary work often involves the collaboration, within the organization, of expert scientists and non-expert staff with the latter acting as brokers of scientific knowledge.

Rhetorical Boundaries of Science and Policy

One aspect of boundary work involves rhetoric, or the use of language and other symbol systems to accomplish particular goals (Bazerman, 1988). To understand the rhetoric used by a boundary organization like the CCA, it is helpful to examine how rhetoricians have described the rhetoric used in science and policy. Rhetoricians of science describe knowledge creation as occurring through the discourse used in the social interactions of actors and texts (Graves, 2014; Gross, 2006; Myers, 1990). A common view of the rhetorical nature of science is that the research lifecycle constructs scientific knowledge (Bazerman, 1988; Graves, 2005; Prelli, 1989). In this view, rhetoricians emphasize the influence of the disciplinary conventions of a cultural community as shaping what is considered a persuasive text, a text that identifies a research question and develops a convincing argument regarding this question.

One particular area of focus in studies of the rhetoric of science involves the various rhetorical tropes that scientists adopt to persuade their audience (Fahnestock, 1999; Graves, 2005; Harris, 2009; Keith & Rehg, 2008). This research has identified many strategies used in science, such as the use of argumentation (Graves, 2011), framing (Dahl, 2015), metaphor (Journet, 2010), and narrative (Johnson, Eckland, & Lincoln, 2014). Many rhetoricians have focused on the use of visual representations of data, such as graphs, tables, and figures in science (Fahnestock, 2005; Graves, 2014; Passera, 2018; Rachul, 2019; Walker, 2016; Walsh & Ross, 2015). Others have identified various strategies used by scientists to represent scientific knowledge, such as those employed by different actors involved in the ongoing climate change debate (Smart, 2012; Smart & Falconer, forthcoming). Such strategies and tropes may play a part in recontextualizing expert-produced science for use by policy-makers, such as in the boundary object of a CCA report.

In the policy domain, rhetoricians suggest that policy designs socially agreed rules for government and citizens to follow (Asen, 2010). There has been growing interest in the rhetoric of policy-making (Asen, 2010; Majdik, 2016), including areas such as public scientific controversies (Cecerali, 2011) and government science-communication practices (Mitchell, 2010; Myers & Macnaghten, 1998; Paroske, 2012; van der Sanden & Meijman, 2008). Research has pointed to a “narrative turn” (Fischer, 2003) in policy rhetoric, part of which relates to the activity of moving science into the realm of policy (Cairney, 2016; Jones & McBeth, 2010). In this view, effective means through which policy-makers can understand complex technical issues include storytelling techniques (Davidson, 2017). Others have suggested that framing techniques also play an important role in how policy-making activities incorporate science (Hajer, 2006; Schön & Rein, 1994). Such framing influences what information is selected, how that information is organized, and how it is interpreted (Pregernig, 2014; Stirling, 2008). Examples of framing activities include selecting policy questions and criteria for identifying expert participants, carrying out research activities, and conducting peer reviews (Stirling, 2008). As I discuss below, storytelling techniques and framing play an important role in the collaborative discursive activity of boundary work performed by the CCA.

In the CCA, the particular type of rhetoric used to make expert-produced scientific knowledge for use by policy-makers plays an essential role in the successful production of a boundary object, in this case a report. Part of this discursive activity involves a rhetoric used to transcend discipline-specific conventions in order to transform knowledge for different audiences (Walker, 2016). Boundary organizations working at the science-policy interface use a rhetoric that enables effective communication between the discursive domains of science and policy (Wilson & Herndl, 2007). Such “boundary rhetoric” (Journet, 1993) involves transforming and

re-purposing expert-produced scientific knowledge for use by government policy-makers. This rhetorical work involves creating boundary objects, such as the reports produced by the CCA, which often draw on rhetorical conventions from one domain that are relevant to another domain, such as scientific evidence used in policy-making (Mitchel, 2010). A rhetoric that spans discursive boundaries requires a social actor to draw on cultural constructs from one domain such as science, evidence, and expertise and use them in a different domain.

Moving Knowledge between Science and Policy

Having discussed the nature of knowledge and the use of rhetoric in the domains of science and policy, I now turn to researchers' theorizing on how scientific knowledge is moved between domains. I focus on research that explores how scientific knowledge is transformed and suggest that one concept – the discursive recontextualization of knowledge (Linell, 1998) – provides the most comprehensive way to understand the boundary work involved in making expert-produced scientific knowledge and other forms of evidence accessible to policy-makers.

Transforming Scientific Knowledge. There is little theoretical consistency in the terms used to explain how knowledge moves across social domains, with several expressions being used, such as “knowledge transfer” and “knowledge translation” (Estabrooks, Thompson, Lovely, & Hofmeyer, 2006; Waerras & Nielson, 2016). Research in organizational studies offers the concept of knowledge transfer as the movement of knowledge or information between social actors in an organization with an effect on the recipient's understanding (Argot & Ingram, 2000). The term transfer also indicates a form of “collective knowledge” shared in organizations (Hecker, 2012). Another term used is knowledge translation, which is “a complex process of negotiation during which meanings, claims and interests change and gain ground” (Waerras and

Nielson, 2016, 2) as knowledge moves both within and across social settings. This perspective of knowledge translation has found momentum in health-related research (Kitto, Sargeant, Reeves, & Silver, 2012; Straus, Tetroe, & Graham, 2009). In this view, “translation” is used metaphorically to explain how one discursive domain takes information and puts it into terms related to the work of another discursive domain. However, in the context of how expert-produced scientific knowledge is transformed and made accessible for use by policy-makers, the terms knowledge transfer and knowledge translation simplify the process of taking knowledge from one domain and making it accessible in another.

Recontextualizing Knowledge. Another concept, the discursive recontextualization of knowledge (Linell, 1998), is particularly useful for understanding the boundary work of transforming expert-produced scientific knowledge for use by government policy-makers. In this view, expert-produced scientific knowledge is reconstructed as a new form of knowledge as it is taken from one discursive domain and moved into a separate discursive domain (Linell, 1998; Smart & Falconer, forthcoming). Rhetorical boundary work performed by different social actors mediates such recontextualization (Myers, 2003). Researchers examining the recontextualization of knowledge have considered the ways in which knowledge moves from the technical domain into another arena where the information serves a different purpose, often through written texts (Coupland & Coupland, 1998; Luzón, 2013; Ravottas & Berkenkotter, 1998; Sarangi, 2001). Others have conceptualized the work of science bloggers who take up expert-produced scientific content and attempt to make it accessible to diverse public audiences (Luzón, 2013; Smart, 2016).

One common instance of recontextualization is the popularization of science through science texts written for non-scientific audiences (Myers, 2003). Some forms of recontextualized

science for non-expert audiences include science in popular press, such as full-length books, the media, and science blogs (Dahl, 2015; Smart, 2011, 2012). Scientists have been shown to be discursively reflexive in recontextualizing their knowledge for non-expert audiences (Leith & Vanclay, 2015; Morgendorff, Molder, van Woerkum, & Gremman, 2016).

As a form of recontextualization, popularizations play an important role in the diffusion of scientific concepts to both amateur scientists and scientists whose expertise is in another discipline (Paul, 2004). While these texts arguably simplify expert-produced science, popularizations can in fact be rhetorical accommodations of scientific knowledge for different audiences (Fahnestock, 2004). Further, Miller and colleagues (2016) suggest that rhetoricians of science may benefit from re-conceptualizing the epistemological differences between experts and non-experts. In this view, popularized texts do not simply convey simplified versions of scientific knowledge; rather, popularizations recontextualize scientific knowledge for non-expert audiences, such as policy-makers (Pilkington, 2016).

Writing on the Boundaries

There has been a considerable amount of research investigating the writing done by scientists (Bazerman, 1988; Gilbert & Mulkay, 1985; Myers, 1990; Smart, Currie, & Falconer, 2014). Scholars have explored various aspects of scientific laboratory research (Wickman, 2010, 2015), the publication practices of scientists (Myers, 1990), and the uses of evidence in communicating scientific information (Mehlenbacher, 2019; Rachul, 2019). Researchers have also explored the discourse surrounding an NGO's attempts to use scientific knowledge for advocacy purposes (Lindeman, 2007, 2013). Other research has suggested that multiple authors with no common point of reference and no single intended audience often write government

policy, resulting in ineffective policy documents (Asen, 2010). However, little or no research has investigated the writing done by boundary organizations such as the CCA.

Chapter Summary

Chapter 2 has discussed an array of ongoing conversations in the literature relevant to my study of the Council of Canadian Academies' (CCA) boundary work, including what counts as boundary work, what constitutes scientific and policy knowledge, and how science moves from the discursive domain of science into the policy domain. This chapter has also examined science, evidence, and expertise, three concepts that play an important role in the CCA's boundary work, as described in the findings chapters of the dissertation. In the next chapter, I discuss my theoretical framework, which consists of theories of discourse, rhetoric, genre, recontextualization, and boundary work.

Chapter 3: Theoretical Framework

This chapter presents the theoretical framework I use to analyse data collected for this study, an ethnographic investigation of the collaborative activities of the Council of Canadian Academies (CCA) – a boundary organization that provides a bridge between the discursive domains of science and policy. Adopting a social constructionist orientation (Berger & Luckmann, 1967), my theoretical framework combines theories of discourse (Gee, 2011; Hajer, 1995, 2006), rhetoric (Bazerman, 1988; Smart, Currie, & Falconer, 2014), genre (Artemeva & Freedman, 2006, 2016; Miller, 1984), recontextualization (Linell, 1998; Myers, 2003), and boundary work (Guston, 2001; Wegner, 1998). I use this framework to describe the nature of the collaborative discursive activities involved in taking expert-produced scientific knowledge and recontextualizing this knowledge for use by government policy-makers. My theoretical framework allows for an analysis that is sensitive to the underlying culture of the CCA, the culture within which the boundary work of recontextualizing expert-produced scientific knowledge for use by policy-makers occurs. The framework also allows for an analysis of the boundary object created through this boundary work, the report produced for Transport Canada titled *Older Canadians on the Move*.

The chapter proceeds in the following manner: I begin by outlining the theories of discourse, rhetoric, genre, and recontextualization that I use to interpret the CCA's culture. Next, I define boundary work and knowledge brokering.

Discourse, Rhetoric, Genre, and Recontextualization

To interpret the CCA's culture surrounding the boundary work of transforming and re-purposing expert-produced scientific knowledge for use by policy-makers, I draw on theories of

discourse, rhetoric, genre, and recontextualization. Below, I define these theories and explain how I use them.

Discourse. For my ethnography of the CCA, I take discourse to mean the “ensemble of ideas, concepts, and categories” (Hajer, 2006, 65) through which meaning making is accomplished in the use of language and other symbol systems. My understanding of discourse encompasses the shared ways of knowing, acting, doing, and thinking that shape the meaning-making practices found within a social group, such as the CCA (Gee, 2011; Hajer, 1995).² In this view, discourse is produced through various activities found in specific social contexts (Hajer, 1995). I use this view of discourse to explore the cultural constructs and cultural tools used within the CCA. I also use this definition to explore the various collaborative discursive activities performed by the CCA’s staff and expert panel in transforming and re-purposing expert-produced scientific knowledge for use by policy-makers.

Rhetoric. Rhetoric – the study of all possible ways to accomplish something through language or other symbol systems (Perelman & Olbrechts-Tyteca, 1969; Smart, Currie, & Falconer, 2014) – provides a lens to view how language functions in oral and written texts. The CCA uses language to express culturally significant meanings embedded within both the

² Though not central to my account of the CCA’s boundary work, this view of discourse is “neo-Foucauldian”, a view that, broadly speaking, emphasizes an awareness of how context shapes a discourse (Esler, 2013; Hewitt, 2009; Van Assche, Beunen, Duineveld, & Gruezmacher, 2017). Many neo-Foucauldian scholars have adopted and adapted Foucault’s (2002a, 2002b) insights on discourse (Fischer, 2003; Gee, 2011; Hajer, 1993, 1995, 2006; Sharp & Richardson, 2001; Smart, 2006, 2011, 2012; Waite, 2012).

boundary work used to create a report for government policy-makers and the boundary object of the final written text that constitutes recontextualized science.

A rhetorical situation (Bitzer, 1968) refers to the event(s) that prompt an individual actor or group of actors to respond within an audience-expected form that fits the situation. I use this concept in my rhetorical analysis of the final report produced for Transport Canada, specifically with respect to the ways in which the report responded to the questions that Transport Canada asked the CCA to answer vis-à-vis the final report. Additionally, rhetorical strategies constitute specific approaches used by an actor to persuade their audience. I use this concept to identify the approaches used by the authors of the final report to convey ideas and meanings they felt were important to the audience, Transport Canada.

Genre. Closely related to rhetoric, genre theory provides a lens for understanding how non-literary genres offer text-based rhetorical responses to recurring social situations in workplaces and community settings, among others (Artemeva & Freedman, 2006; Bazerman, 1988; Miller, 1984). I make use of genre theory³ to conceptualize the types of writing activities performed by the CCA staff and panel members through the CCA's boundary work. A genre set is a group of individual, intertextually connected genres used within a social group to accomplish related purposes (Devitt, 1991).

³ Though the goal of my study is to understand the types of writing done during the Council of Canadian Academies' discursive activity of recontextualizing science, I have chosen to use genre theory to inform my discourse-based ethnographic account of the CCA's work.

The CCA's assessment process encompasses different intertextually connected genre sets. Many of these interconnected genres may serve as "intermediary genres" (Tachino, 2012) – that is, transitional texts that facilitate the "uptake" of another genre. Uptake involves a process whereby parts of a text, including ideas, are taken up into a new text of another genre (Dryer, 2016; Freadman, 1994, 2002; Reiff & Bawarshi, 2016), a process that occurs within the discursive activities performed by CCA staff and panel members. I consider texts written throughout the assessment process to constitute a "genre set" (Devitt, 1991) – that is, a series of intertextually connected genres – consisting of many intermediary genres that facilitate the uptake of knowledge taken from other discursive domains.

Recontextualization of Knowledge. Another key concept for my study is the process through which knowledge is recontextualized – that is, involving a two-part process whereby knowledge is taken up from one discursive domain, such as science, and transformed and re-purposed as a new form of knowledge for use in another domain, such as policy (Linell, 1998; Myers, 2003; Smart & Falconer, forthcoming). In the context of my study, I use the notion of recontextualization to describe the ways in which scientific knowledge and other sources of evidence are taken up into the CCA's boundary work and are both transformed and re-purposed as it becomes a new form of knowledge that exists in the final report.

Boundary Work

In my study, I use two concepts introduced in Chapter 2 – boundary work (Guston, 2001) and knowledge broker (Wegner, 1998) – to explore the CCA's collaborative discursive activities. Both theories suggest that boundary organizations that connect two otherwise separate discursive domains mediate scientific knowledge as it moves through society. First, I use the concept of

boundary work (Guston, 2001), defined earlier, to theorize the nature of collaborative discursive activities employed by the CCA. I conceptualize the CCA as a boundary organization that performs the boundary work of recontextualizing expert-produced scientific knowledge for use by policy-makers. I also use the notion of a boundary object (Star & Griesemer, 1989) to conceptualize *Older Canadians on the Move*, the CCA's final report for Transport Canada. As a boundary object, this report functions between the discursive domains of science and policy. Guston's (2001) model of a boundary organization clearly describes the CCA's work in producing the boundary object of a science-based advisory report designed to inform government policy-makers on an issue, with "experts" from both sides of the science-policy interface collaborating with a dedicated team of CCA staff.

A knowledge broker (Wegner, 1998) is an actor whose discursive activities facilitate the movement of knowledge between the discursive domains of science and policy (Wegner-Traynor & Wegner-Traynor, 2015). An individual or group can operate in more than one discursive domain and can have simultaneous membership in both domains, such as a panel member working in their discursive world and joining the CCA's panel. The continuity of the actor in both discursive domains is how they "broker" knowledge by bringing elements, such as disciplinary knowledge, into the second domain. I employ Wegner's (1998) concept of a knowledge broker to describe the discursive activities performed by CCA staff, who help the expert panel throughout the assessment process. I conceptualize the CCA's panel meetings as boundary encounters that bring together individuals with expertise from different sectors and disciplines to broker scientific knowledge through the medium of a boundary object, in this case an advisory report for government policy-makers.

Chapter Summary

In this chapter, I have provided an account of the theoretical framework employed in investigation of the collaborative discursive activities performed by the Council of Canadian Academies (CCA) in recontextualizing expert-produced scientific knowledge into a new form of knowledge that is comprehensible and useful to government policy-makers. My theoretical framework consists of theories of discourse, rhetoric, genre, and boundary work. Such a framework allows for an analysis that is sensitive to the underlying culture through which the collaborative activities and actions of different social actors involved in performing the boundary work of recontextualizing expert-produced scientific knowledge for use by policy-makers. My theoretical framework helps unpack the black box of the CCA's assessment process, and helps identify the roles and social actions of the actors involved and the types of texts produced during the assessment process. Concepts from rhetoric are helpful for considering the functions performed by the final report, a boundary object provided to Transport Canada by the CCA, and the manner in which expert-produced scientific knowledge is recontextualized for use by policy-makers. In the next chapter, I discuss my use of interpretive ethnography as the methodology used to produce an account of the CCA's boundary work.

Chapter 4: Methodology

Chapter 4 describes the methodology used in my study of the Council of Canadian Academies' (CCA) boundary work of transforming and re-purposing expert-produced scientific knowledge for use by policy-makers, Geertz's (1973, 1983) interpretive ethnography. The result of the study is an ethnographic account of the CCA that focuses on the culture of the organization, and the ways in which this culture shapes its boundary work.

This chapter proceeds in the following manner: I begin by describing the methodology of interpretive ethnography, along with the complementary approach of textography (Swales, 1998). Next, I contextualize the study by discussing the research site, the research agreement with the CCA, the phases of research, and the researcher's position. I then describe the process of producing my ethnographic account, including data collection and data analysis procedures. Finally, I summarize the steps I have taken to build the "trustworthiness" (Hammersley, 1992) of the account.

Interpretive Ethnography

Interpretive ethnography is an approach to research developed by anthropologists to study the culture of a particular social group (Denzin, 1999; Geertz, 1973; Marcus & Fischer, 1986). Building on the understanding that knowledge, rituals, behaviours, ideas, etc. are at least partially socially constructed (Berger & Luckmann, 1967; Kuhn, 1970), interpretive ethnography turned towards a more pluralistic understanding of culture as semiotic, with cultural analysis seeking to understand the "informal logic of actual life" (Geertz, 1973, 17). In this view, culture is found in "webs of significance" (Geertz, 1973) that are unique to specific groups of individuals. Ethnographers seek to understand the meanings of entities in this world – activities,

objects, beliefs, assumptions, and behaviours – to interpret the significance that these entities have to the community members under study. That is, ethnographers interact with the culture they study by immersing themselves in the community and learning directly from community members how they operate. This approach to research assumes that both the members of a social group *and* the ethnographer studying the group create their own constructions of reality.

A key function of ethnography is to produce a “thick description” of the observed reality that the ethnographer encounters. Where a “thin description” is an account of factual events and actions that occur, a thick description moves towards interpreting the actions within a “stratified hierarchy of meaningful structures in terms of how [actions] are produced, perceived, and interpreted, and without which they would not in fact exist” (Geertz, 1973, 7). Thick description, then, requires an ethnographer to develop a close understanding of the symbolic interactions of meaning – the discourse, as Smart (2006) calls it – unique to the community.

In producing a thick description, researchers use “experience-near concepts” to describe the day-to-day realities of participants in their own discourse. Such concepts include notions that a community member may “naturally and effortlessly use to define what he or his [*sic*] fellows see, feel, think, imagine, and so on, and which he [*sic*] would readily understand when similarly applied by others” (Geertz, 1983, 57). Seeing, hearing, and feeling experience-near concepts require an ethnographer to reflect on and record the specific details observed in the words, actions, and interactions between people (Silverman, 2000). An ethnographer accesses experience-near concepts primarily through their fieldwork and interviews with community members. There are several examples of experience-near concepts identified in my study of the CCA, such as “science”, “evidence”, “expertise”, and “assessment”, each of which will be discussed below in the findings chapters.

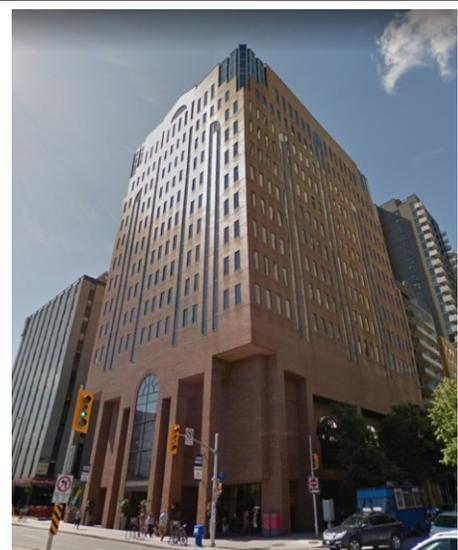
In contrast to this are “experience-distant concepts” or concepts “that specialists of one sort or another—an analyst, an experimenter, an ethnographer, even a priest or an ideologist—employ to forward their scientific, philosophical, or practical aims” (Geertz, 1983, 57). Experience-distant concepts, such as those described in Chapter 3, enable the researcher to draw theoretical insights out of the low-level descriptions developed through extended exposure to a culture. Through these insights, an ethnographer *interprets* the culture (Hammersley, 1992; Smart, 1998, 2006, 2008). Both Geertz (1983) and Smart (2006) caution ethnographers not to confine themselves to either experience-near or experience-distant concepts as the level of interpretation will be either too close to the common vernacular or too abstracted by the ethnographers disciplinary terminology. Interpretive ethnographers should strive to find the right balance between accessing the local cultural knowledge and interpreting it through the theoretical lens relative to their disciplinary purview (Hammersley, 1992).

To describe the writing activities used by a specific community, a writing researcher can do a “textography” (Paltridge & Stevenson, 2017; Swales, 1998). A textography is an approach that relies on a thick description (Geertz, 1973) of a culture to describe the texts used in the discursive activities of a community. In doing so, a textography identifies what texts are produced, why they are written the way that they are, what guides the writing, and what values underlie the texts. In my study of the CCA, adding a textographic focus to Geertz’s interpretive ethnography allows for an account of the types of writing done by CCA staff and panel members through the discursive work of the CCA’s assessment process. I adopt a textographic approach to understand the discursive activities, roles, and social actions played by the CCA as a boundary organization in recontextualizing expert-produced scientific knowledge into a new form of knowledge that is of use to government policy-makers.

Context of Study: Research Site, Agreement, and Phases

Here, I discuss the research site, the research agreement, the researcher's position, and the production of my account of the CCA's boundary work.

The Council of Canadian Academies. I used the Council of Canadian Academies (CCA) as my research site. I conducted research in the CCA's office, which is located at 180 Elgin Street, Ottawa, Ontario, Canada, between 2013 and 2018. As mentioned in Chapter 1, the CCA works at arms-length from government to provide policy-oriented advice for different government departments on complex scientific topics of public interest (CCA, 2009, 2019). In its own words, the CCA works as “an independent, not-for-profit organization that supports independent, authoritative, and evidence-based expert assessments that inform public policy development in Canada” (CCA, 2019).



The Council of Canadian Academies is on the 14th floor of 180 Elgin St. in Ottawa, ON, Canada (Google, 2018).

The CCA's organizational structure is comprised of a Board of Directors, a Scientific Advisory Committee (SAC), and a staff secretariat of approximately 30 employees. Members of the Board and the SAC are often Fellows in one of Canada's three national academies of science. The Board approves questions taken on by the CCA. Members of the SAC play an advisory role that entails providing recommendations to CCA staff about what projects should be taken on from the committee's perspective.

The staff secretariat plays the most significant role in the recontextualization of science for policy-makers. The secretariat consists of an executive group along with research, communications, and administrative teams. For each project, members of the staff secretariat make up what is referred to as within the CCA as an “assessment team”. The staff assessment team typically consists of a Project Director, a Research Associate or a junior Researcher, a Research Intern, a Project Coordinator, and a communications specialist.

For each project, the CCA also recruits a volunteer panel of “experts”. Typically, this panel consists of between 12 and 15 members, with one member acting as the panel Chair. The other panel members are recruited from different sectors of the economy and from academic disciplines that are closely related to the project. Most panel members bring academic expertise from specific disciplines, such as sociology of aging. Other panel members come from industry, non-federal levels of government, and NGOs.

The CCA’s clients or “Sponsors”, as staff refer to clients, are typically policy-makers working in departments of the Canadian federal government (although, as mentioned above, the CCA is not limited to federal clients). Typically, over an 18-24 month period the staff and expert panel proceed with researching and answering the client’s questions and delivering their response in what staff refer to as an “expert panel report”.

My study focuses on the collaborative work involved in producing *Older Canadians on the Move* (CCA, 2017), one such expert panel report that was presented to Transport Canada in December 2017. Known internally as the “transport project”, the project focused on identifying

ways to adapt the Canadian transportation system to meet the needs of an aging population.⁴ The panel met in several cities across Canada, including Gatineau QC, Ottawa ON, Calgary AB, and Toronto ON through a series of face-to-face expert panel meetings organized and run by a small team of CCA staff dedicated to the transport project. These panel members and staff are the focus of my study.

Research Agreement and Phases of Research. The final research agreement guiding my study was signed in August 2017. This permission included using the true name of the organization in my dissertation (Appendix A). I also received permission to study the CCA's process of developing an expert panel report for its client, was permitted to use existing data gathered in 2013 (detailed below), interview CCA staff and panel members involved in a CCA project, record field notes while working at the CCA, and access confidential documents related to the CCA's work.

The agreement's confidentiality clause protects the content of private conversations and drafts of the report as proprietary information. I also agreed to anonymise interview data used in my dissertation. The CCA reserved the right to correct any factual errors about the organization. They also agreed not to interfere, directly or indirectly, with the publication of my research.

Researcher Position. I was employed by the CCA on two separate contracts, first as a Research Intern from July to December 2013 (6 months), and then as a Communications

⁴ I use two terms interchangeably to refer to the final report produced for Transport Canada, including the title of the report, "*Older Canadians on the Move*" and simply "the transport report" to avoid repetition. I also use the terms "transport project" and "transport assessment" when referring to the collaborative process and work involved in producing the final report.

Assistant from September 2015 to August 2016 (12 months). In total, I spent 18 months “in the field”. A convention of ethnography is that the researcher will explain their relationship with the research subjects and elaborate on the role played by participants. Lønsmann (2015) suggests that there is a distinction between self-positioning (i.e., the reflective position of oneself in a research site) and being positioned (i.e., the interactive positioning where others position an individual/group).

In the following two sub-sections, I reflect on the ways that I positioned myself in relation to my research subjects via the roles I envisioned myself taking, and then I describe how I may have been positioned by members of the community.

Self-positioning. There is no universally accepted position for an ethnographer to take in their fieldwork. Researchers must make assumptions about what position they adopt (Hammersley, 1992). Some roles ethnographers may adopt include peripheral, active, or complete members of the community being studied (Adler & Adler, 1987). The role that the researcher adopts determines the type of data that becomes accessible to them.

My disciplinary background is that of a discourse analyst using ethnography to understand a community’s meaning-making practices in a naturalistic setting. Discourse is pervasive, especially when considered from the theoretical framework described in Chapter 3. My own understanding of discourse, described above, has an influence on how I interpret data. In the present study, I take a social constructionist perspective to my research design, a stance that acknowledges the essentially subjective nature of knowledge found in naturalistic settings. More specifically, I examined the discursive phenomenon of a boundary organization’s work of recontextualizing expert-produced scientific knowledge for use by government policy-makers.

Over the phases of my research, I first adopted an active membership role. As an active member of the CCA, I interacted with different members of the community during both of my employment contracts and observed the work of the CCA's research and communications teams. During my 2013 internship, I worked on two CCA research projects as a member of the CCA staff assessment teams and assisted with the early research for two reports (see CCA, 2015a, 2015b). During my second contract in 2015-2016, I helped with all aspects of the CCA's communications work, including corporate communications, publications, website materials, social media channels, and outreach efforts (events and marketing). I participated in weekly communications team meetings.

After my time as an employee, I took on a peripheral membership role as an outside observer. In this role, I paid close attention to major events and press releases published by the CCA. I followed the CCA on Twitter, which is a major tool through which the CCA makes announcements. I also remained in contact with a number of former colleagues after my second contract ended, which helped me observe activities and events. From the outside, I observed several difficult decisions made by the CCA, such as having to reduce the number of staff from nearly 35 to about 20 in 2014. The CCA also sought a renewal of their funding agreement with the federal government, granted in 2015. My observations of the CCA as an outsider through press releases, twitter announcements, and conversations with former colleagues provided more analytical distance in my research.

Being positioned. Over the years, I have observed myself being positioned differently at various stages of my relationship with the CCA. During my internship, I felt favourably looked upon, especially after the success of my original research that I presented to the CCA in 2013. I re-joined the organization in September 2015, the same month I started my PhD, and felt warmly

welcomed back. The funding renewal had come through in that year's budget and there seemed to be an air of relief and excitement amongst CCA staff. However, I felt re-positioned in the CCA community when they approached me to re-negotiate our previously established (in 2014) research agreement.⁵ Between January and August 2017, we slowly renegotiated the terms of our agreement, including the terms described above. Everything during this time was professional, but I did feel a significant change in how I was perceived within the CCA.

Having re-established our mutually agreed terms, I am eternally grateful for the support and help the CCA provided to me. Staff were extremely helpful with my study on the transportation project in every sense. They quite generously helped me connect with panel members, sent me all the documents used throughout the process, and participated in interviews. Additionally, one member of the CCA staff kindly served on my advisory committee throughout my doctoral studies.

Producing an Account of the CCA's Boundary Work. Broadly speaking, my study followed an emergent design (Hesse-Biber & Leavy, 2008) as I gathered some data, interpreted it, and continued to gather more data as I refined my research interests over a five-year period between 2013 and 2018. The questions I asked during the first phase of my research were very different from those that I address here (Appendix B); however, my initial questions informed

⁵ Ethnographers are forever vulnerable to the support they encounter in the community they study and how they perceive the world as well. As new individuals join the community and others take on different positions, the manner in which an ethnographer is positioned can quickly change. Ethnographers constantly have to, in a sense, sell their research to newcomers. This task is one I found very difficult as time went on.

the questions guiding the present study, as is common practice in ethnography (Geertz, 1973, 1983; Smart, 2006, 2008).

Over the course of my five years of interacting with the CCA, I maintained what Varpio and St Ong (2011) refer to as a “study CV” to document my data collection and, to a lesser extent, my analytic process (Appendix C). In addition to the research agreement made with the CCA, the Carleton University Research Ethics Board also approved my study (Appendix D). Ethics approval closely resembled the research agreement between the CCA and myself and included negotiating arranging, conducting, audio recording, and transcribing interviews with CCA staff and panel members from the transport project. Participants did not receive compensation.

Gathering Data. I gathered data between 2013 and 2018 over two phases of research. As mentioned earlier in this chapter, my employment with the CCA marked the first phase of research. The second phase started in late 2016, after my employment with the CCA had finished. Through both phases, I adopted a “participant engagement” approach (Hockey, 2002; Hockey & Forsey, 2012) to gathering data whereby I weighted my field notes and interviews equally. In this approach, one gathers field notes during one’s time in the field to document the experience-near concepts used in the community under investigation. These field notes are later used to conduct follow-up interviews to clarify community-specific meanings related to the phenomena being studied (Rapport, 2012; Skinner, 2012). Below, I describe the data collected, including field notes, interviews, and documents.

Field notes. Producing a thick description requires an ethnographer to have extensive exposure, as a participant-observer, to a social group’s activities, particularly activities related to

the cultural phenomenon under investigation. During their time in the field, observing and interacting with members of the social group under study, a Geertzian ethnographer “inscribes social discourse; *he writes it down*” (Geertz, 1973, 19) by keeping field notes. Field notes are “jottings” that record observations of events and interactions while in the field. These notes must provide enough detail for the researcher to recall their experiences while in the field (Emerson, Fretz, & Shaw, 2011). This method requires a conscious effort to step back from events as they occur and to reflect on these events (Emerson, Fretz, & Shaw, 2011; Rapport, 1991).

My field notes consist of observations recorded during my employment with the CCA. In total, there were approximately 200 pages of hand-written notes. These notes recorded the daily happenings and specific in-house terms – the experience-near concepts – that I encountered at the CCA. As I recorded my observations, I focused on three things: the CCA’s writing processes; staff views on the collaborative discursive activities involved in the CCA’s transformation of expert-produced scientific knowledge for use by policy-makers; and, finally, the events that occurred during the CCA’s work for Transport Canada. Through these field notes, I produced a thick description (Geertz, 1973) featuring the terms used at the CCA, the roles adopted by CCA staff, the perspectives surrounding the roles of a project’s expert panels, and the details of the CCA’s “assessment process”, discussed below.

Interviews. Another central part involved in producing a thick description (Geertz, 1973) is through interviews – that is, “a nonroutine conversation, with a purpose or design which at least one of the talking-partners has previously determined, and which need not be repeated” (Rapport, 2012, 55) – with members of the CCA. In these non-routine conversations, the interviewer and interviewee have a context-specific conversation (that is often recorded for transcription purposes) whereby meaning is constructed by both participants. In these

conversations, there is a give-and-take dynamic, a co-construction of meaning (Heyl, 2007; Kvale, 1996; Mishler, 1986, Skinner, 2012). Conducting ethnographic interviews means developing a deep understanding of the “lived experience of the participant...by asking about and listening closely to the beliefs, the values, the material conditions and structural forces that underwrite the socially patterned behaviours of all human beings, along with the meanings people attach to these conditions and forces” (Hockey & Forsey, 2012, 83). To access an individual’s lived experience requires tapping into the community member’s unique perceptions of events, which I did through interviews.

Interviews served as a key source of data for my study. In addition to the many “hall-way” conversations I had while working at the CCA, I did 25 interviews in total, 18 of which were with CCA staff members and 7 of which were with transport panel members over three cycles between 2013 and 2018. The interviews ranged in length from 23 to 80 minutes (total audio time of 1,234 minutes or 20.5 hours). I personally transcribed each interview and had 556 pages of transcripts (1.5 line spacing to help with coding). In Appendix C, I outline the interviews and participants. To maintain anonymity, I use the generic identifiers of “CCA staff” or “panel member”.

All of my interviews followed a semi-structured protocol whereby I used a script of questions that I gave to the participant before our mutually agreed meeting (Appendix B). I asked follow-up questions to clarify points that each participant made. Interviews typically focused on the participant’s perceptions of events and experience-near concepts I observed at the CCA. I then used the information from the interviews to develop subsequent interview scripts; I also utilized field notes and many of the documents I collected (see below) to design my interview

scripts. As such, I updated the scripts regularly to learn more about interesting details as they emerged from my data.

As is common practice in ethnography (Smart, 2006), my account features many interview excerpts that capture the multitude of perspectives that exist within the CCA's culture. I do this to feature the voices of participants and share the experience-near concepts found in the CCA's boundary work.

Documents. Another important source of data I gathered included various documents produced by the CCA. Many of these documents are publically available texts, such as annual reports, organizational history documents, expert panel reports, news releases, newspaper articles, tweets, and web-texts from pages on the CCA website (www.cca-reports.ca), among others.

I also gathered many confidential documents that are only available internally to the CCA, the most important of which is the latest version of the CCA's "Council Assessment Lifecycle Methodology", the CCA's "Style Guide", and a variety of templates used by staff to write various texts produced throughout a project's lifecycle.

As part of our research agreement, the CCA allowed me to collect materials and internal documents produced throughout the lifecycle of the transportation project. In total, I collected over a hundred documents for my study. These documents varied and included the sponsoring government department's initial "Charge to the Panel" (the terms of reference), in-progress drafts of written material produced for the project (report chapters, slides, etc.), and materials from panel meetings: minutes, briefing materials, slides, staff notes, etc. (see Appendix C).

Approaches to Data Analysis. My approach to data analysis evolved over the five-year period I studied the CCA. My original aim was to understand the writing practices of the CCA and to investigate its organizational approach to writing. As I continued to interact with the CCA and explore the literature, I became increasingly interested in the notion of boundary work and the type of work involved in the recontextualization of expert-produced scientific knowledge for use by policy-makers. My research turned towards “knowledge translation” and, finally, the discursive recontextualization of expert-produced scientific knowledge for use by policy-makers, the final topic of my dissertation.

To answer my research questions, presented in Chapter 1, I focus on the discursive black box of the collaborative activity involved in recontextualizing expert-produced scientific knowledge for use by policy-makers as performed by the CCA. To build the case for how the CCA performs this boundary work, I focused my analysis on three things: 1) the culture of the CCA and the cultural constructs and tools found in the CCA; 2) the transport project as an example of the CCA’s boundary work, including the roles and social actions (such as writing) of the different people involved in the activities involved in collaboratively transforming and re-purposing (scientific) knowledge, including a textography of the transport project; and, 3) the rhetorical nature of the boundary object, *Older Canadians on the Move* (CCA, 2017), presented to Transport Canada’s policy-makers in December 2017.

To consider these areas, I employed various strategies for analysing and interpreting my data sources. One common ethnographic strategy that I used was to gather different sources of data over an extended period (five years) and to interpret the data over time. In this sense, my field notes served the purpose of documenting the experience-near concepts and for me to reflect on my experiences in the CCA, a form of memo writing that proved to be very useful in later

iterations of additional data collection and analysis. For example, I used my field notes to inform the types of questions I asked participants in the interviews, a strategy that connected my data sources throughout this iterative approach.

Another strategy that I used is known as “categorising and connecting” (Maxwell & Miller, 2008) data, a process that involved systematically deconstructing and reconstructing collected data to identify connections that exist between sources of data. I categorized interview data using qualitative coding techniques (Saldaña, 2013), including structural codes that applied content-based conceptual phrases representing a topic related to my study, descriptive codes that summarized the topic of a passage in a single word or short phrase, and theme-ing the data according to the three analytical focuses identified above (see Appendix G). I used Nvivo (version 12) for most of the later theme-ing of my data.

For my rhetorical analysis of *Older Canadians on the Move*, the final report submitted to Transport Canada by the CCA, I used three of the CCA’s cultural constructs – “science”, “evidence”, and “expertise,” described in Chapter 5 – as criteria in examining the report. Using these cultural-specific criteria, I focused first on citations in the report to identify what counted as science and to classify types of evidence that were used. I then identified passages where the term “the Panel” – a phrase used to indicate the collective expertise of the panel – appeared. I then identified strategies used to recontextualize science and other sources of evidence for policy-makers.

As is the case with qualitative research more broadly (Maxwell, 2013), ethnographers need to make a case for the trustworthiness of their interpretation (Hammersley, 1992; Smart, 1998, 2008; Van Maanen, 2011). I have attempted to do this by triangulating theory with my

approaches to data collection and analysis. I have used symbiotic theories – discourse, rhetoric, genre, recontextualization, and boundary work – as experience-distant concepts to interpret the lived-experiences I observed during my employment with the CCA as well as the lived-experiences of interview participants. For data collection, I sought three sources of data represented in my discussion below: field notes, interviews, and documents/texts. Doing so ensured that I would draw on different sources of information throughout the five years I collected data. For data analysis, I employed three strategic approaches: longitudinal interpretation via participant observation in both active and peripheral roles, coding and categorizing strategies to deconstruct and reconstruct all sources of data, and following-up on new ideas with other members of the CCA. As Smart (2006) suggested, the soundness of my final representation of the CCA’s discursive recontextualization of knowledge is left for the reader to decide.

Study Limitations

I have been strategic in designing my study and have accounted for both my approach to data interpretation as well as the trustworthiness of my account presented below. However, there are some limitations to my study, including methodological and practical aspects, which limited the project’s scope. I discuss these limitations below.

Methodological Limitations. Geertz’s (1973, 1983) interpretive ethnography is a methodology that requires a researcher to integrate with a local culture while remaining analytically distant from that culture. To remain analytically distant, ethnographers use their disciplinary analytical tools to prevent them from personally identifying with the local culture. In

doing so, the ethnographer is able to develop a “deep” understanding of the phenomenon under investigation, as discussed above.

Having previously worked with interpretive ethnography (Falconer, 2013), the most obvious limitation is that the resulting ethnographic account is not generalizable to other sites of human activity. That is, my claims about the CCA and its work are not generalizable to other organizations involved in the recontextualization of expert-produced scientific knowledge for use by policy-makers. Geertz (1973) preemptively addressed this criticism by arguing that interpretive ethnography is *intentionally* microscopic and that ethnographers’ claims are not generalizable to other research sites, as ethnographers generally believe that there is no universal truth in the social sciences (Berger & Luckmann, 1967; Geertz, 1973; Kuhn, 1970). As I have done here, an ethnographer uses discipline-specific theories to draw theoretical inferences from the descriptive, localized findings and make theoretical claims (Hammersley, 1992).

Another limitation to interpretive ethnography is evident in the common question of whether interpretive ethnography is more of an art or a science, fiction or factual, subjective or objective (Atkinson et al, 2007; Geertz, 1973, 1983; Hammersley, 1992; Van Maanen, 2011). Interpretive ethnography has been used to create more personal reflexive accounts of a researcher’s experience in the field, something that has been criticized for being too subjective (Adler & Adler, 2008; Clifford & Marcus, 1986). Allowing experience-distant concepts to drive the interpretation is an appropriate method for ethnographic research; however, it is difficult to understand how the analysis was done when emphasis is placed on the individual’s experience. To use “scientific” methods is to account for what data was collected, how it was collected, how that data was analyzed, and how the final ethnographic account was produced using the analytical tools and theoretical concepts. A structured approach to interpretation – such as that

presented by Glaser and Strauss (1967)⁶ – may help combine the subjective interpretation with a “trail” for other researchers to understand how narrative-based data is interpreted by the ethnographer.

Ethnographers have a shared repertoire of specific methods that they use and that are crucial for researchers entering the field to consider, such as the researcher’s positionality in the field and the style of monograph produced as an ethnographic account. Most notably, this requires an emergent design using identifiable methods from the literature (Dörnyei, 2007). If ethnographers inscribe social discourse, readers should understand what the researcher sought to inscribe over the course of their fieldwork. For my study of the CCA, I attempted to bring together the “art” side of interpretive ethnography with the structured “science” side by accounting for both I – as a researcher and an individual – and others involved in my research may have influenced my interpretation of the CCA. I also tried to demonstrate the specific social scientific methods I used in collecting and analyzing the data, considered below in detail.

Practical Limitations. Most notably, my research agreement with the CCA both enabled and constrained me. The CCA’s generous permission to allow me to use its proper name and study their project process and resulting report allowed me to look at a real-world phenomenon and to discuss their work. However, I agreed to two restrictions: first, I was restricted from attending or observing meetings between CCA staff and the expert panel, which means I was not

⁶ What Glaser and Strauss (1967) did for qualitative research was to introduce a common repertoire of methods used to collect and analyze data, something I think is of great importance for qualitative social science research. There is value in this because researchers are able to identify the data collection/analysis approaches used in a particular study.

able to gain a true “insider” perspective; second, I am restricted from re-producing any part of the transitory texts written during the CCA’s assessment process.

I agreed to these limitations at the beginning of my project knowing that these were considerations of the CCA with regard to the confidentiality of their work. I felt that I was able to overcome these limitations using my knowledge of the CCA’s writing practices gained throughout 18 months of employment with the CCA. Specifically, I applied my knowledge of experience-near concepts used by CCA staff and panel members to ask pointed questions of those involved in the transport project to learn about different parts of the drafts and the purpose these drafts served in completing the final report. Several confidential documents, such as the Council Assessment Lifecycle Methodology and the various texts used throughout the panel meeting stages, were accessible to me, which I report on below.

Chapter Summary

In this chapter, I have identified my use of interpretive ethnography as my methodology and made the case for using this approach to conduct an analysis of the discursive activities involved in transforming and re-purposing expert-produced scientific knowledge for use by policy-makers. I detailed the research site – the Council of Canadian Academies (CCA) – and the research agreement and researcher position. I outlined how I produced my account of the CCA’s boundary work and, finally, I identified the methodological and practical limitations of my study design. In Chapter 5, I begin the first of three findings chapters that present my account of the CCA’s boundary work of recontextualizing science. Specifically, I present my understanding of the CCA’s culture, accessed through community-specific cultural constructs and tools, within

which CCA staff and panel members work to transform and re-purpose science for policy-makers.

Chapter 5: Findings—The Council of Canadian Academies’ Culture

In Chapter 5, I present the findings of my ethnographic account of the Council of Canadian Academies’ (CCA) boundary work, starting with a description of the influence of the organization’s culture on that work. As discussed in Chapter 4, the culture of a community is accessible through an investigation of elements such as shared concepts, shared local knowledge, and conventionalized behaviours as reflected in the community’s discourse (Geertz, 1973; Smart, 2006, 2008). As an example of culturally situated boundary work, the ethnographic account examines the collaborative discursive activity performed by the CCA in producing a report for Transport Canada titled *Older Canadians on the Move*.

The question guiding this chapter is the first sub-question listed in Chapter 1: What culture-specific constructs and tools does the CCA employ in its collaborative recontextualization of expert-produced scientific knowledge for use by policy-makers? In order to answer this question, this chapter explores the cultural constructs – for example, conceptual categories and specialized terms – and the cultural tools – such as the CCA’s in-house proprietary “assessment” methodology – used by the organization in its boundary work. In doing so, the chapter draws on many excerpts from interviews.

The CCA’s Cultural Constructs

The CCA employs conceptual categories and specialized terms such as “science”, “evidence”, “expertise”, “assessment”, and “expert panel report”, used pervasively within the organization. These categories and terms shape the way the CCA and its staff understand and perform its boundary work. Below, I unpack the specific meanings of these terms and explain the

discursive activities employed by the CCA to recontextualize expert-produced scientific knowledge for use by policy-makers.

Science. The CCA’s cultural construct of “science” relates closely to definitions found in Science and Technology Studies (STS). In STS, the epistemic activity typically done in laboratories – almost exclusively by natural scientists – is science (Knorr-Cetina, 1985, 1999; Latour & Woolgar, 1986). One panel member summarized this definition of the scientific process as follows: “...you come with a hypothesis and you gather data to either support or refute that hypothesis... [Y]ou have a topic or a problem and you think about ways to find solutions” (*Panel 05*). This view of science could be seen as a narrow definition.

In contrast to this narrow definition, the CCA works with a “broad definition of science” (CCA, 2019) that extends the notion of science to include disciplines in the social, behavioural, and health sciences as well as engineering and, in some cases, the humanities. The cultural construct of “science” found in the CCA extends the common view of science to include all empirical knowledge typically produced by academics, thus problematizing notions of science commonly used in STS. This broad definition reflects the range of knowledge found in the CCA’s Member Academies, including the Royal Society of Canada, the Canadian Academy of Health Sciences, and the Canadian Academy of Engineering.

With the warrant of this broad definition of science, the CCA is able to take on a wider range of projects. As one staff put it:

The past [projects] that we’ve had have been predominantly hard science-based, so the research that we got either came from data, from literature usually journal articles, or data that we’ve had in the past or data that was written in the past, companies such as Science Metrics that provide huge data sets. But, we are turning more to doing social science-based reports as well so that it does change the information that we get and that we’re looking for is different (*Staff 08*).

In adopting a broad definition of science, the CCA is able to draw on interdisciplinary knowledge beyond the scope of the “narrow” definition of science mentioned above. This last point – that the type of science drawn on in a CCA report depends on the scope of the project – is particularly important for the transport project whereby Transport Canada was able to access the CCA’s boundary work.

As a boundary organization, the CCA’s broad definition of science also creates some challenges for CCA staff members. As one staff member suggested, “...the term science, I don’t think, serves the CCA very well based on, just looking at the kind of reports that we do, you know, there’s only a sub-set that are truly based on science, natural science. [Instead, the CCA uses] science as in the knowledge generated through the scientific method *writ large*” (*Staff 14*). Another staff member described a similar difficulty in learning to work with the CCA’s broad definition:

I come from a natural science background, the kind of science that people think about when they hear ‘science’... I think in working here, scientific research has taken a much broader perspective [for me where] I think of science as [any] evidence-gathering, evidence-informed process. So I can think of many kind of social scientific endeavors and I’m slowly learning about [what] would also be included in, you know, scientific research that I wasn’t privy to, I guess, in my past academic life (*Staff 10*).

CCA staff with a background in natural science seem to adapt to the CCA’s broad definition of science throughout their experience in working on CCA projects.

Evidence. The cultural construct of “evidence” is a term used in the CCA to refer to types of credible knowledge. Such knowledge comes from specific documents, such as expert-produced academic literature. While my study focuses on the transformation and re-purposing of expert-produced scientific knowledge (academic literature) for use by policy-makers, other

sources of evidence also play an important role in the CCA's discursive activities, as I discuss in Chapter 7.

Closely related to the notion of science used in the organization, CCA staff employ a "traditional model" (*Staff 04*) of what counts as "evidence" throughout the activities of a CCA project. This traditional model draws on knowledge from peer-reviewed papers in academic journals, grey literature or "high-quality" reports from reputable organizations, such as the World Bank and the Conference Board of Canada, and existing data sets from well-known and respected organizations, such as Statistics Canada and the Organisation for Economic Co-operation and Development (OECD). These sources can be categorized "...as super good evidence, medium, low, and bullshit evidence" (*Staff 13*). Of particular note here is that the CCA traditionally does not do original research. However, this is changing as the CCA is "...trying to find new ways of getting information from other sources [such as] interviews, and new evidence isn't something that we do, so it is challenging to sort of find data on...I don't know, say memory institutions [report] or even transportation [report] to some degree..." (*Staff 08*), a point I return to below.

Staff indicated that the CCA is in a period of transition in terms of what counts as evidence in their work. Some projects, such as those that have less basis in the natural sciences, such as the transportation project, have challenged the CCA as an organization to re-think what they believe counts as evidence in their reports. Additional sources that are now considered forms of evidence include the "expertise of the [expert] panel", media reports, and traditional Indigenous knowledge. Two of these new types of evidence appear in the transport report: the expertise of the panel and media reports.

The expertise of the panel is a controversial point within the CCA: “[I]f the panel wants to say things that are not founded in evidence it's a little bit frowned upon and so the panel looks hard for the evidence to support what they'd like to say” (*Staff 04*). Another staff suggests that the “panel’s consensus on one issue is a big evidence [b]ecause they’re like 14 experts on different subjects and if they come to something, an interpretation and they agree on that, that has a lot of value” (*Staff 11*). The use of panel expertise appears to be a credible type of evidence within the CCA, especially considering that many of the CCA’s reports address policy-oriented questions that had little to no scientific research at the time.

As one staff member reflected on the use of media reports, the CCA now “certainly look[s] at the media not as strictly as evidence, but as support for claims or, you know, ideas presented in the report” (*Staff 09*). Another staff summarized the use of newspaper articles: “...newspaper[s] are not peer-reviewed, they’re not coming from a renowned source. So why is it evidence? It’s evidence because it can back up a fact...” (*Staff 13*).

The current internal debate in the CCA about what counts as evidence have a lot to do with the importance or “weight” assigned to each type of evidence:

[A]lot of it is just a lot more broadly about... what weight we put on various types of information in the report because we can have varying sources... people hold up scientific research from peer-reviewed journals as like the pinnacle of evidence. But then there’s like a whole range of other sources where we can gather information and we can use kind of all those collectively as the evidence to support the reports. But then in the writing, you have to kind of think about what weight you ascribe to those various types of evidence you’re supporting... (*Staff 09*).

That is, CCA-specific values serve to help rank different sources of evidence. In line with the CCA’s emphasis on science, academic literature is valued most as the primary source of evidence for CCA reports.

In addition to how the ranking of sources of evidence within the CCA, there are additional and ongoing conversations about the weight assigned to each source of evidence. As one staff member commented:

...the weight of [the evidence] and sure-ness of it, if I can say that, is very different depending on the source. You're not going to back up something major in your report with a newspaper. You're going to back it up with a really good, solid evidence. You know, so there's all sorts of evidence that are used to prove different things. And the Council's report, it's their report because we're evidence-based. Where the line is a bit blurry is an expert – we all have experts, expertise in our expert panel. When their opinion becomes evidence or opinion? I think this is where the line is the most blurred... you need evidence to prove facts. And the biggest facts you want to prove, the bigger the evidence you want to use. And I don't know if I would back up my biggest facts with just the opinion of experts (*Staff 13*).

The quality of the evidence is essential within the CCA to the extent that the CCA has even created a committee to discuss this very point. One staff suggested an important aspect of this internal debate: “[evidence] has to be presented for what it is [and] you don't make big conclusions on the weaker evidence, but [you use it] to illustrate a point...” (*Staff 11*). The CCA provides evidence to policy-makers as an intermediary group working between the domains of science and policy. That is, CCA staff consider different sources of evidence for use throughout a CCA project that support claims made in a CCA report. As we will see, the cultural construct of what is counted as evidence in the CCA has major implications on the production of an expert panel report.

Experts and Expertise. Two other closely related cultural constructs found in the CCA's discourse are the terms “expert” and “expertise”. For every project, the CCA forms an expert panel to address the client's questions in order to “evaluate the best available evidence on particular complex issues where the science may be challenging to understand...or difficult to assemble” (CCA, 2019), as described in their mandate.

The CCA uses the term “expert” to refer to an expert panel. As expertise relates to a panel member one staff suggested, “[a]n expert is somebody that has proven his [*sic*] knowledge and utility” (*Staff 13*). This definition highlights two key aspects of knowledge in the CCA – knowing-as-content and knowing-as-doing, as discussed in Chapter 2. One panel member summarized the knowing-as-content end of the spectrum concisely: “[an expert is] someone that is highly regarded for their knowledge and their professional work [and] is seen by others as an authority in a particular field” (*Panel 07*). Another panel member suggested that an expert is “[S]omeone who can draw on evidence and understand how to... synthesize that into a somewhat reasonable perspective” (*Panel 02*). This perspective echoes observations made by Dear (2004) as well as Evans and Collins (2008) whereby an expert is experienced in their discipline and embodies the knowledge or expertise gained through their experience.

On the knowing-as-doing end of the spectrum, CCA staff members emphasize how an expert’s knowledge relates to their particular role in a CCA project. As one staff member suggested, an expert is:

[S]omebody that’s going to bring you specific insight on the subject that not many people around may have inside our experience, or academic background... it doesn’t especially have to be academic background... [A]n expert will bring...a specific perspective to a part of the question and a perspective that is hard to find... an expert with work experience, with research will bring you this really specific kind of take on an issue that you would never think about through all of the reading... (*Staff 11*)

Another staff added to this shared understanding of what an expert is within the CCA’s culture:

The way that we engage experts is we look closely at the assessment that we’re producing or developing and what type of people could help answer the question. So the experts that we choose aren’t necessarily always specific to that [question] ... Basically, we looked at people who could provide a different perspective for each question. So an expert to us was someone that could answer to something specific that could be related

to our charge or our questions that we were tasked with answering ... when we look at experts, we look at people who are well-known in their field, who have spent a lot of time looking at specific issues. And people who can then provide a specific perspective to something that we want to as a whole develop (*Staff 08*)

Another staff member summarized the knowing-as-doing side of the CCA's cultural construct of an expert. In the CCA, an expert brings experience-based knowledge of a particular topic closely related to a project. It is the unique perspective on the topic and related issues, whether academic or otherwise, that the individual brings to a project. The CCA seeks out this expertise in recruiting a specific panel member.

In this sense, the CCA seeks "experts" who are able to serve specific functions on the panel in addressing a client's questions. While many panel members are academics, the multi-disciplinary and multi-sectoral nature of the CCA's boundary work underlines the pragmatic understanding of experts on the knowing-as-doing end of the spectrum. These experts enter the discursive domain of a boundary organization working between science and policy to broker expert-produced scientific knowledge, as Wegner (1998) suggests. In doing so, the experts bring with them their discipline- or industry-specific knowledge that the CCA then uses to address its client's policy-oriented questions.

As part of the CCA's discourse, the term "expertise" is a closely related construct understood by community members to refer to "the knowledge, the skills, and the talent to evaluate the particular subject that is going to be the subject of the expert panel" (*Staff 12*). This definition echoes the rationalist-cognitive definition of knowledge as something one possesses (Blackler, 1993), or knowing-as-content, as previously described.

The CCA's understanding of expertise emphasizes knowing-in-action. Interviews with panel members provided additional insights into the nature of expertise as it relates to the CCA's work:

There's expertise that comes from scientific research, there's expertise that comes from cumulative experience in the scientific endeavor. There are many different types of methodologies and not only those that belong to basic science. So, we have actually explicit discussions about the fact that we are called an "expert panel" because we are brought together for our expertise and our own personal expertise. Not only relates to the research that we've conducted and the research that we've read, it also refers to our accumulative experience in the field (*Panel 01*)

...expertise is the culmination of, I would have to say, a number of years of experience and knowledge in a particular field. And the field could be a variety of topics, but at least they are related to the point where they have enough perspective on their particular area of expertise to be able to speak with confidence about that particular subject. So, in other words, you have a diverse enough background and depth of knowledge and duration or extent of experience that you can say with reasonable confidence and comfort that what you're saying is as close to the truth – your truth – as can be possibly expressed. There will always be different interpretations and different opinions and so on and so forth, but at least you come from a position of 'this is something I know' (*Panel 03*).

These two comments suggest that the CCA sought a range of different types of expertise. When taken together as a group, the collective expertise of panel members encompasses experience in a variety of fields, with each panel member bringing a specific type of knowledge and interpretation of important issues related to the project at hand.

Where the CCA seeks a variety of expertise related to a project, CCA staff members may be seen to have the expertise that allows them to act as knowledge brokers. As one panel member commented:

[W]hat I was really impressed with though was the CCA staff that was doing a lot of the writing and the background work. Even though they came from totally different areas, they had the capability to pick things up and synthesize and move on and, you know, author a very good report. They did very, very well. Which is really that they were able to listen well and synthesize, even if it's not in their domain. And in some ways, maybe

it's better because they are able to communicate with an audience that isn't—you know, more of a general audience versus people with a specific technical expertise (*Panel 05*).

The CCA's understanding of “expert” and “expertise” is compatible with the CCA's function as an intermediary between the various scientific disciplines accessed in producing a report for its clients. In doing so, expert panel members serve an organizational purpose in establishing the “right mix” – a phrasing that suggests a kind of alchemy – of backgrounds needed to address the question that the CCA receives from its client.

Assessments. Another cultural construct found in the CCA is the term “assessment”. The CCA's assessment process is the manner through which the CCA accomplishes its boundary work – that is, the collaborative discursive activity of creating a report for a client (including policy-makers working in federal government departments). Figure 1 illustrates the CCA's assessment process using images to depict each step. The CCA describes an assessment as a very particular kind of discursive activity:

Assessments are conducted by multidisciplinary and multi-sectoral panels of experts from across Canada and abroad who volunteer their time and lend their expertise and knowledge to the CCA. The overarching goal of CCA assessments is to evaluate the best available evidence on particularly complex issues where the science may be challenging to understand, contradictory, or difficult to assemble. This often means identifying emerging issues, gaps in knowledge and research, Canadian strengths, and international trends and practices. Upon completion, assessments provide government decision-makers as well as researchers and stakeholders with high-quality information and evidence to develop informed and innovative public policy (CCA, 2018, 5).

Viewed another way, an assessment is part of the broader activity of recontextualizing expert-produced scientific knowledge into new knowledge so that it is accessible to and useful for policy-makers. The discursive activities involved in transforming and re-purposing scientific knowledge involves several steps documented in the cultural tool of the CCA methodology, discussed later in the chapter.

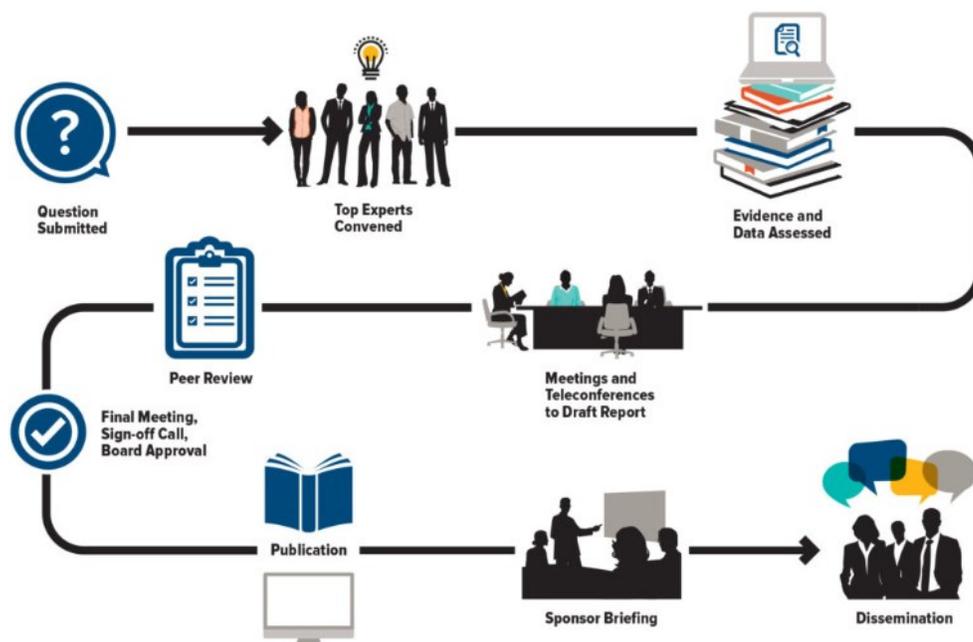


Figure 1: The CCA's depiction of its assessment process (CCA, 2018)

In terms of starting a panel process, assessments are “referred to the CCA (or ‘sponsored’) by foundations, non-governmental organizations, the private sector, or any level of government” (CCA, 2018, 5). The CCA has specific criteria for what topics are considered acceptable for an assessment. These criteria include: “1. The topic is of importance to Canada and its citizens. 2. The appropriate expertise can be assembled and the required timeline can be met. 3. The existing state of knowledge merits the assessment. 4. Science underpins the question and its response” (CCA, 2019).

The CCA’s Scientific Advisory Committee (SAC) helps ensure that a sponsor’s questions fit these criteria, especially in terms of assessing whether there is enough knowledge or “evidence” available to the CCA:

In some cases, it’s simply that... there’s not enough evidence to deal with it... if there’s nothing already known in terms of firm evidence, then our feeling is there’d be no point in CCA taking it on because our expert panel assessments are generally based on

evidence. And if there's no evidence, then it doesn't mean the subject isn't important, it just means that there's not enough out there to enable an expert panel to come to grips with it (*Staff 12*)

Whether or not to begin an assessment depends on the SAC's advice concerning the expertise required and the "merit" of the available evidence.

The SAC plays an additional role in the assessment process that involves identifying experts and their expertise. As one staff suggested:

So, as part—as one of our sort of deliverables in the [CCA's] methodology is engaging a panel. So when we get our charge, we spend a considerable amount of time before the actual report writing begins taking careful look at the scope and the focus of the assessment and trying to find people who would be able to fit that. And so it's definitely a challenge scouring the internet and looking to our Scientific Advisory Committee for guidance on the type of people that would be most useful on this type of assessment. We have a number of documents that sort of help us to reach that where we can sort of answer various questions on how various people can fit these roles (*Staff 08*).

The SAC plays an important role in helping a staff assessment team identify the experts and expertise needed for a project. SAC members are experts in their own field who lend their expertise to the CCA in helping to identify experts who can help with an assessment.

The CCA staff members understand that an assessment serves a specific purpose. As one staff member commented, "the purpose of the assessment is to provide... an expert, objective, arms-length assessment of the subject or in terms of what's known and what's not known and what needs to be known" (*Staff 12*). Another staff member suggested that the term "assessment" is "a term [we use] to capture... a group discussion and a collective interpretation, analysis of the evidence, that occurs through deliberation" (*Staff 14*).

One CCA staff member shared their view on what activities are involved in an assessment:

...assessments can include many pieces ... I'll put it into three boxes: identifying the evidence, assessing the evidence, and then interpreting [the evidence]. [Each panel] do[es] that differently, they'll identify the evidence differently. We as staff are responsible for...helping with that process, we employ proper techniques in identifying the evidence... But, assessing the evidence, that happens very much in the deliberative space, and because we're working in a multi-disciplinary context, we can't rely on any one discipline to determine the norms of what is evidence...it has to happen through that conversation... in the assessment process where you've got the panel deliberating ... they have to decide in assessing that – you're almost in a process of working collectively and hearing out why this piece of information is as important as this type of evidence and they have to agree ultimately to how that all factors in to their final interpretation of the evidence. So it's very much, in a way, the assessment piece is very much a social process that has to happen through deliberation (*Staff 14*).

An assessment, then, is a discursive activity that involves locating, assessing, and interpreting evidence. Within this staff member's definition, it is clear that the activities involved in producing a report actively use the above-defined cultural constructs of science, evidence, and expertise.

Another participant summarized their understanding of what an assessment represents for policy-makers:

[As scientists] we produce the evidence and then the policy-makers say thank you very much, we'll make a decision. And the way I view it is because policy-makers take into account not only evidence, or not only scientific evidence. They take other things into account. ... Like do I have the budget for it? Would I get elected the next time around? Or will my boss get elected next time around. So there's these other factors that get taken into account (*Panel 01*).

These different perspectives provide insight into the nature of the boundary work performed by the CCA, a boundary organization working between the discursive domains of science and policy.

Expert Panel Reports. The last cultural construct related to the CCA's boundary work is an "expert panel report", the report produced by the CCA for its clients. Expert panel reports constitute a boundary object created through the boundary work of the CCA's assessment

process. As of July 2019, the CCA has published 47 reports, with *Older Canadians on the Move* being its 41st report. The CCA produced these reports for a range of clients, including thirteen federal government departments, two provincial government departments, and several non-governmental organizations (including government agencies).

Staff members identified three sub-types of reports produced by the CCA: (1) a comprehensive literature review that synthesizes large amounts of interdisciplinary research (literature and data) in a policy-oriented manner (CCA, 2014); (2) a non-systematic literature review that synthesizes wide-ranging bodies of literature to address a sponsor's need to understand "the current state of knowledge" or "best practices" in a particular area of policy (CCA, 2012a; CCA 2015b); and (3) a smaller-scale "workshop report" that often leads to full assessment projects (CCA, 2012b). These classifications are important for understanding the Transport Canada report, as discussed in Chapter 7.

There are many defining features in an expert panel report. One staff member echoed the claim mentioned on the CCA's website and in all of its annual reports, that expert panel reports "don't make recommendations... [they] summariz[e] a literature, or summariz[e] the evidence on something" (*Staff 04*). Another CCA staff member noted, "the reports have to be impeccable with regards to the evidence and be as inclusive as possible with regard to the evidence..." (*Staff 12*). According to a third staff member, "A report from the CCA will help organizations – federal government departments – achieve their objectives because it comes with a neutrality. It comes with—it's credible, it's authoritative" (*Staff 14*).

The CCA emphasizes the consensus-driven nature of an expert panel report. By consensus, CCA staff members mean that "everyone who signs-off on the report agrees with the

report... they might not agree with everything explicitly in the report and they can present alternative sides in the same report, but if they're signing off on it, they are saying 'yes, I am okay with saying this'" (*Staff 04*). Another staff member further illustrates what "consensus" means in the CCA:

A consensus means the panel agrees with what is written in the document. And sometimes it can be a real point, sometimes it's some panel members disagree with other panel members. But at the end of the day consensus is like everyone agrees and is comfortable with what is being written. [B]asically consensus is when everybody feels comfortable in what is in the final product (*Staff 11*).

The CCA's use of the term "consensus" reflects the fact that an expert panel report brings together different disciplinary perspectives in a manner that all panel members can agree with. The practice of having each panel member "sign off" on the report's content is an important detail. In signing off, the panel members validate not only knowledge coming from their own field, but also knowledge coming from other panel members' areas of expertise.

Expert panel reports are also peer-reviewed by a committee of external experts. As one member of the transportation panel reflected with respect to the value of the peer-review process: "You have your expert panel, but then you have your peer-review of their work. So [the CCA are] in the business of getting experts together, trusting their expertise, producing a product, and then having a peer-review, and then considering the comments from the peer-review" (*Panel 07*). Another panel member suggested that including a peer-review "...brings in a whole new level of rigour [through the] credible evidence produced and [the advice] is much more useful [and] have far more value... to any business" (*Panel 03*). This part of the process is valued within the discursive domain of science and is a marker of the boundary work performed by the CCA in creating the boundary object of an expert panel report.

To summarize, CCA staff consider expert panel reports as neutral, credible, and authoritative texts that do not provide recommendations to policy-makers; rather, a CCA report “assesses” and summarizes the evidence. All of the descriptive phrases echo socio-cultural interpretations of the domain of science, which Gieryn (1999) suggests carries an epistemic authority in society. By taking terms associated with science – neutral, credible, authoritative, evidence, and peer-review – the CCA seems to borrow from the epistemic authority of science while positioning itself as independent from both science and government.

The CCA’s Cultural Tools

In addition to the cultural constructs of the terms “science”, “evidence”, “expertise”, “assessment”, and “expert panel report”, the CCA has two important cultural tools used in recontextualizing expert-produced scientific knowledge for use by policy-makers: the proprietary “Council Assessment Lifecycle Methodology” and the “CCA Style Guide”. I explain what these cultural tools are in this section.

The Council Assessment Lifecycle Methodology. The first cultural tool that the CCA has developed is the “Council Assessment Lifecycle Methodology” (CALM). CALM is an internally designed project management tool that staff use to guide their work during an assessment process. The guide details every stage of the assessment process including assembling a panel of experts, producing a report, delivering a report to a client, etc. At the time of writing (July 2019) CALM is in its ninth version.

A staff member recollects the CCA’s experience in creating the methodology:

So for my first research project it was the State of Science and Technology 2006. So we got that assessment in...July 2006 [and] we were asked for a three month turn-around time. So as you know right now assessments take 18- to 24-months. So three months we

didn't know, we had no idea – we were a brand new organization, everyone was new, nobody had really done this before, and, that said, it was the only thing we were doing. We didn't have other projects... We had a new Board, we had a new Scientific Advisory Committee, we didn't have a lot of the structure and policies and day-to-day stuff that we have now... we did everything from researching panels to writing the biographies to doing fact checks, like it was all hands on deck... And so it was kind of close six staff members, if you will, and we met every day about the project... we learned early on that it wasn't the way that we would do it... We also learned that three months was just craziness, but we got it done (*Staff 06*).

Here, we see an instance of how CALM developed through trial and error over time.

While my research agreement with the CCA limits the specific details of CALM I am able to share, I can say that the methodology comprises nine stages or “processes” that the staff teams are involved in from the time an assessment starts until a year after its release, when the project is formally “closed-out”. As shown below in Table 1, CALM documents how a small team of CCA staff pulls together literature, data, and any other relevant materials that the panel requires to write the report. Staff also produce “deliverables” before, during, and after each panel meeting. As discussed above, the resulting report is then anonymously peer-reviewed before being moved to the CCA’s communications unit for editing and publication.

According to my analysis of CALM, there appear to be 113 texts produced throughout the CCA’s assessment process (see Appendix E for the full list). These documents range in length and importance from short, summary documents to texts synthesizing complex scientific literature. These texts serve organizational needs and help to recontextualize science. Briefly, the assessment team produces all CALM-prompted documents, including those texts produced for “milestone meetings”, which occur nine times before, during, and after an assessment. These meetings require the staff team to assemble many texts produced between meetings into a “package” for the CCA’s executive group.

Table 1: The nine processes detailed in version 9 of the Council Assessment Lifecycle Methodology

Process # and Title	Purpose of the process
1 - Define and select the proposal	The purpose of this process is to successfully define and select a proposal for assessment. As part of these processes, the CCA will review the proposal, provide feedback to the Sponsor, and (if deemed appropriate by the Board of Directors) accept the proposal for assessment. The majority of the steps within this section occur before the CCA officially receives the question for assessment and well before an assessment team is in place.
2.1 - Chair & Panel Appointment	This process involves the recruitment, appointment, and approval of the Chair and Panel. This process also includes a literature review, background research, preparation for and execution of the first panel meeting, and the development of a timeline, budget, and assessment plan.
2.2 - Plan report, panel meeting 1	
3 - Report/Content Development - Detailed Outline	The objectives of this process are to execute the Research Plan and develop a detailed report outline in preparation for Panel Meeting 2. This includes completing further research as well as gathering and analysing results.
4 - Report Content Development DRAFT 1	The objectives of this process are to complete the final stages of the Data Gathering Plan and complete Draft 1 of the report in preparation for Panel Meeting 3.
5 - Report Content Development - DRAFT 2	The objectives of this process are to complete revisions to the draft report based on feedback from Panel Meeting 3, complete the substantive editing process, and begin preparing for the peer review process.
6 - Peer review, pre-publication, & Launch planning	The objectives of this process are to complete revisions to the draft report based on feedback from Panel Meeting 4, complete the Peer Review process, conduct Panel Meeting 5, and begin preparing for the Teleconference to Sign Off for Publication. This process sees the development of a formal Launch and Dissemination Plan and is one of the longest processes. Unlike previous processes, it does not include a Milestone Meeting in advance of Panel Meeting 5.
7 - Publication, Launch, & Distribution	The objectives of this process are to complete the publication process, deliver the report to the sponsor, publically launch the report, and distribute the report in print and electronic formats. Due to many competing priorities and the fast pace of the pre-launch phase, this Milestone is part of a two-step process. The first step is a face-to-face Milestone meeting a few days prior to the Sponsor Meeting to discuss the launch strategy and review the Assessment Plan. The second step occurs by email after the launch of the report, and consists of circulating the Milestone 7 Report with all completed deliverables.
8 - Dissemination, Impact Monitoring, and Lessons Learned	The objectives of this process are to continue to disseminate and promote the report while tracking its impact as well as collect and document the lessons learned from the project overall.
9 - Project Close Out	The objectives of this process are to send out the Impact Survey, review the project overall, discuss and, file a “close-out report,” and reconcile the project budget.

There are many texts written throughout the assessment process that may help CCA staff members and panel members recontextualize expert-produced scientific knowledge for policy-makers. Of the 113 texts detailed in CALM, 54 appear to help recontextualize science. Key texts involved in this process include the “proposal”, “compositional guidelines”, “panel meeting notes”, “panel meeting minutes”, “panel briefing materials”, “web-text”, “executive summary”, and “news release”, among several others. I return to this point in Chapter 6. Interestingly, the CCA assessment team writes all of the texts produced through the activities involved in recontextualizing science. This means that while the panel is the author, CCA staff are often actually authoring the texts. Staff access, read, and interpret information from the sources of evidence accessed in the activity of recontextualizing scientific knowledge and create the first draft that the panel then verifies, corrects, or reworks, often suggesting new sources of evidence.

The CCA Style Guide. Another cultural tool found in the CCA and used in the recontextualization of scientific knowledge is the CCA “Style Guide”, which is in its fourth version at the time of writing. The CCA summarizes the purpose of the Style Guide:

The Council of Canadian Academies (CCA) is dedicated to publishing professional and insightful reports for our sponsors and the public, and as such has adopted style preferences and guidelines for report writing. This document outlines these guidelines. Consistency of language and graphics is crucial for maintaining the level of excellence our sponsors and the public demand; consistency also contributes to clarity and precision. Needless to say, the adoption of these guidelines facilitates the copyediting and production processes significantly.

It is important to remember that the final report will always be laid out by a professional designer before it goes to print in a format specifically designed for the CCA. The draft documents in MS Word have a different format than the final laid out reports. Staff should follow the draft document format and not try to make MS Word drafts look like the final version of the report (CCA, 2015c, 1).

The CCA’s Style Guide shapes many important details including not only citation and formatting questions that characterize the “look and feel” of a CCA report, but also acceptable language use.

Like CALM, the Style Guide has developed over time through trial and error, as explained below. One staff member commented:

...we finished the first report and then it kind of just became one of those corporate projects that the President said ‘You know what, we really should have our own style guide, or style sheet.’ And originally he just really intended it to be like a couple of pages pointing us in the right direction of other manuals. And so that's what we started [with], and over the...next two years we developed... a kind of 15 page guide. And we did some research and we chose, obviously Canadian style, and we researched a couple of different things to do with referencing and chose [one] and that kind of stuff. And so then it was all written down. ...it needed to be integrated into the [CCA], so in order to do that we decided to kind of set up a committee of people that [was] comprised of all of the different pieces of the [CCA]. So we had someone from communications and we had someone from the researchers and we had a program director, and we had program coordinator and we had someone who's on the council executive... kind of set so that each larger team . . . [the CCA] could understand the different aspects of the style guide. And what we do now is it's much larger document and it exists in French as well (*Staff 06*).

The CCA’s Style Guide serves as a reference guide for staff and panel members involved in writing an expert panel report.

The Style Guide includes several suggested phrases for writers of an expert panel report to use. One particularly relevant example outlined in Chapter 7 are the suggested phrases the CCA can use to ensure that expert panel reports do not make any recommendations:

The following are examples of language that is suitable for a CCA report: The Panel concludes... The Panel finds... After an examination of the evidence, including the survey results and a comprehensive literature review, the Panel discovered... After exploring X and Y, the Panel was able to discern... The evidence shows that... After an examination of X, the Panel was able to establish that... (CCA, 2015c, sec. 7).

The following are examples of language that is NOT suitable for a CCA report: The panel recommends... The panel advocates for... The government must... The government should... The government is obliged to... Canada must... The panel advises... The panel urges... The panel endorses... (CCA, 2015c, sec, 7).

The purpose of the Style Guide was to make the “back-end” tasks involved with finalizing and publishing a report more straightforward for the CCA’s communications unit. When the research

team uses this guide, it makes the communication unit's work much more straightforward because the publication standards of the CCA define the formatting of drafts.

Chapter Summary and Conclusions

In Chapter 5, I have defined aspects of the Council of Canadian Academies' (CCA) culture with respect to the recontextualization of scientific knowledge for use by policy-makers by identifying cultural constructs and tools used within the organization. I have described the cultural meanings associated with CCA-specific conceptions of "science", "evidence", "expertise", "assessment", and "expert panel report". Additionally, I have discussed the cultural tools of "the Council Assessment Lifecycle Methodology" and the CCA's "Style Guide". Each cultural construct and tool features prominently within the culture of the CCA and the boundary work of the assessment process.

Conclusions. This chapter has discussed the CCA's cultural constructs and tools used to perform the boundary work of transforming and re-purposing scientific knowledge for use by policy-makers. Guston's (2001) conception of a boundary organization provides a useful frame of reference to conceptualize the CCA's boundary work between the domains of science and policy-making. As discussed above, the CCA works as an intermediary connecting the otherwise separate discursive domains of science and policy through the creation and use of boundary objects (Star & Gruesmer, 1989), in this case the CCA's expert panel report. In functioning as an intermediary, the CCA effectively brokers knowledge from one domain (science) for purposes unique to another domain (policy-making).

The internal understandings of science, evidence, and expertise – three central cultural constructs found in the CCA – both enable and constrain the type of response any CCA expert

panel and staff can make in an expert panel report. For example, the CCA uses a broad understanding of the term “science” which includes natural, medical, and social sciences, engineering, and the humanities, a definition that problematizes the common notions of science found in Science and Technology Studies (STS). While STS scholars commonly have the natural sciences in mind when referring to science (Knorr-Cetina, 1985, 1999; Latour & Woolgar, 1986; Merton, 1973; Mulkay, 1979), the CCA’s boundary work constitutes an advisory role to government, which requires incorporating different bodies of knowledge, including knowledge from the social sciences and humanities. What the CCA considers “evidence”, a term that refers to credible types of knowledge from both the natural and social sciences, reflects this.

What the CCA means by “expertise” is particularly interesting given that the CCA forms expert panels to produce expert panel reports. There are two meanings associated with the term expertise: knowing-as-content, whereby expert panel members represent specific discursive domains and provide specific sources of evidence; and, knowing-as-doing, whereby expert panel members contribute their interpretation of discipline-specific issues to a project. Both forms of knowledge are essential in the CCA’s assessment process. The CCA seeks both content and experience-based forms of knowing when recruiting specific panel members for the project at-hand.

In the CCA, an assessment is a particular type of discursive activity that leads to the creation of an expert panel report. The CCA’s cultural tools, the Council Assessment Lifecycle Methodology and the in-house Style Guide, assist staff and panel members in responding to client-initiated questions. These cultural tools function as a shared frame of reference for staff and panel members throughout the assessment process. This frame of reference provides a systematic set of procedures for how a CCA assessment is to proceed, including goals for each

stage of the process, and a detailed guide for how the staff members and panel members are to communicate ideas within an expert panel report.

In Chapter 6, I take the example of the CCA's project for Transport Canada to explore the cultural roles and social actions performed by CCA staff team and its expert panel as they went about producing a report, *Older Canadians on the Move*, for the department's policy-makers.

Chapter 6: Findings—The Boundary Work of the Council of Canadian Academies’ Assessment Process

Chapter 5 described the influence of the Council of Canadian Academies’ (CCA) culture on the organization’s boundary work of recontextualizing expert-produced scientific knowledge for use by government policy-makers. In this chapter, I continue my exploration into the nature of this boundary work by describing the assessment process performed by CCA staff and expert panel members in creating the report produced for Transport Canada, *Older Canadians on the Move* (CCA, 2017). In doing so, this chapter takes up the second and third sub-questions guiding this study, as listed in Chapter 1: (2) what are the roles and social actions performed by the different individuals involved in this collaborative transformation and re-purposing of scientific knowledge? (3) What texts are produced in this discursive activity of recontextualization and what rhetorical functions are performed by these texts?

In answering these questions, I describe the roles and social actions, including the writing-related activities, involved in the boundary work of the expert panel and CCA staff assessment team for the Transport Canada project. I suggest that the CCA staff team plays a crucial role in orchestrating the collaborative discursive activity of recontextualizing expert-produced scientific knowledge for use by Transport Canada policy-makers. In doing so, I unpack the black box of the CCA’s assessment process, focusing on how this activity accomplishes the boundary work of recontextualization.

This chapter proceeds as follows: I explore the three stages of the assessment process that I have labelled the “pre-panel process”, the “panel process”, and the “post-panel process”⁷. For each stage, I explore the activities and roles of the social actors involved. I also present a “textography” (Swales, 1998) of the writing done throughout these processes.

Pre-Panel Process: Brokers’ Brokering

As previously mentioned, the CCA prepared *Older Canadians on the Move* for Transport Canada in addition to a few supporting departments and agencies who were also an intended audience, including the Public Health Agency of Canada, Employment and Social Development Canada, the Canadian Transportation Agency, and the Canadian Air Transport Security Authority. In preparing the report for Transport Canada and other departmental and agency policy-makers, the CCA was situated to broker knowledge between the domains of science and policy-making. The project started with the CCA’s acceptance of a text prepared by Transport Canada titled “Proposal to the Council of Canadian Academies (CCA) for an Independent, Expert Panel Assessment on: The Role of Innovation and Technology in Adapting to the Transportation Needs of an Aging Population”.

The first draft of this proposal, presented to the CCA in 2012, was not accepted by the CCA until 2016. In my understanding, this delay occurred for a number of reasons, the most important being that the CCA was trying to secure additional funding from the government in

⁷ While the cultural tool of the Council Assessment Lifecycle Methodology (CALM), introduced in Chapter 5, includes nine processes, I focus on processes one through seven because the discursive recontextualization of science occurs during these parts of the process.

2013 and 2014. During this time, there were a number of staff lay-offs, which limited the CCA's capacity to take on additional assessment work. The CCA's future felt uncertain with new requests for assessment from federal government departments being on hold during this time. The situation changed when former Prime Minister Stephen Harper's Conservative government provided additional funding to the CCA in 2015. The CCA started hiring new research staff and taking on new assessment work from federal government departments, including the transport project.

The re-launch of Transport Canada's 2012 proposal re-initiated Process One of the Council Assessment Lifecycle Methodology (CALM), outlined in Chapter 5. The purpose of Process One is to negotiate the terms of a proposal for the CCA to take on a project. In this process, the department seeking a CCA assessment goes through Industry, Social and Economic Development Canada (ISED, formerly Industry Canada) – the department that has overseen the CCA's funding agreement since 2005 and plays a mediational role between the CCA and federal government departments wanting to engage the CCA in a project. This involves a department pitching a series of policy-oriented questions that the department believes would benefit from external consultation.

In 2015, the CCA assembled an internal committee consisting of senior CCA research staff and the Scientific Advisory Committee to review Transport Canada's proposal. This committee provided feedback to Transport Canada on the viability of the proposed assessment questions. While records of how many proposal drafts were prepared between 2012 and 2016 are difficult to follow, it is certain that the final proposal guided the CCA's work on the transport project.

Transport Canada’s proposal is a 19-page text consisting of several sections, including: Background; Rationale that included five subsections titled Assessment Relevance, Government Policy Agenda, Vision for the Assessment, and The Role of the CCA; Feasibility with four subsections titled Current Knowledge Base, Timeframe, Risk Management, Relevant Departments/Agencies; and a Conclusion. In addition to the sub-sections, there are also References (13 in total) and a Bibliography with an additional 26 resources to consult. Finally, there are also three appendices with one detailing federal roles and responsibilities for accessible transportation; a glossary; and, additional references to international organizations involved in transportation policy.

The CCA takes great care to ensure that the proposal’s scope is something that they can deliver. This involves a review by the CCA’s internal committee. The CCA’s internal committee ensures appropriate framing of the questions. As one CCA staff explained:

Setting up the questions is an important task, and I think it’s easy to overlook the role of the questions in what you’re looking at in ‘translating’, you know, the science into policy. The question is such a pivotal point in that process because if you get the questions right [and] answer the questions, you make the outputs relevant to the decision-making process because you’re answering their question...the framing [of] the question helps frame the evidence in a way that’s relevant to government decision-making and thinking processes and what have you. So very, very critical (*Staff 14*).

Another staff commented that what makes a question “...‘good’ is really subjective, [but] it asks specific questions...” (*Staff 11*). Given the CCA’s emphasis on the importance of getting the “questions right” and “specific”, understanding the questions that shaped *Older Canadians on the Move* is important.

The main question, or the “Charge to the Panel” as CCA staff refer to it, for the CCA to address, “How can technology and innovation help the Canadian transportation system (under

the legislative authority of Parliament) adapt to the needs of an aging population?” (CCA, 2017,

2). In addition to the main question, there were several sub-questions:

- What impact will the aging demographic have on the economics, social role and physical design of the Canadian transportation system over the next 25 years? What is the current state of research on the safety, security, multimodal integration, service standards and equipment design implications of an increasingly elderly travelling public, and where are the gaps in knowledge?
- What are the international trends and best practices for accommodating an aging population, including trends and best practices for measuring performance?
- Are there examples or case studies where new technologies and innovative solutions are being developed to accommodate increasing numbers of aging travellers, such as equipment, communications, business practices, processes and training?

(CCA, 2017, 3).

The Charge to the Panel was a central text that guided the entire activity of the report’s development. Accepting the proposal for an assessment triggered a series of text-based activities unique to the CCA’s boundary work. As I suggest below, the Charge to the Panel directed the entire assessment process. The proposal positioned the CCA staff and the expert panel in a “call-and-response” (Freadman, 1994) situation whereby the CCA’s uptake of Transport Canada’s questions shaped the final report.

Staff Assessment Team. Once the proposal was accepted, the CCA then created an assessment team for the transport project comprised of secretariat staff. The team consisted of a Project Director, two Research Associates (both with PhDs), a Project Coordinator, an Intern, and a liaison person from the CCA’s communications unit. The team met regularly (weekly or bi-weekly) to discuss general tasks, such as “logistics, upcoming deadlines...teleconferences, meetings... [which was] always very helpful for everyone to be on the same page and kind of aware of what our next deadline or goal is” (*Staff 09*). Another staff summarized these team meetings more specifically:

[W]e would kind of touch base about what we were working on, the PD would talk about any interactions with the panel... Usually [the PD] was quite good on CC'ing us [on emails], so we were all in the loop. But we would talk about report development or any problems we were having. Or if someone – we would have timelines – and if someone was like either a head in their work or behind, we tried to adjust accordingly... It was more of a high-level discussion (*Staff 10*).

Team meetings occurred from the start through to the publication of *Older Canadians on the Move* and were very important for keeping the transport project on schedule and for coordinating the work of the staff team and panel.

The staff team dynamic throughout the entire process seems to have been positive. As one staff observed, “I think [we] worked well together. The team did change quite a bit, which I think has the potential to be very disruptive. But in this case wasn't, which I think is a testament to how well the team worked together” (*Staff 09*). Another commented, “the researchers, I think, worked really well together. They sort of, for the most part, had the same working style” (*Staff 08*).

These several changes to the assessment team, which I will discuss below, included a change in Project Director, Project Coordinator, and researchers. Another staff member summarized the transitions: “I came in mid-way through the project between panel meetings two and three [and] it was a bit in full swing but before we were really sort of drafting the report itself... it was a smoother transition I think than I expected” (*Staff 10*). The final team – including the one Research Associate to stay on the team for the duration of the report – had a very positive sense of how the team functioned and felt that each member of the team complemented each other's working style, which had much to do with the panel and staff's writing process, as discussed below.

Panel Scoping and Recruitment. Almost immediately, the staff assessment team began Process Two Point One of CALM (see Table 1), which involved recruiting, appointing, and approving the panel's Chair and individual panel members. Using Transport Canada's proposal, the staff team researched what topics needed to be included in the scope of the project and identified the different kinds of expertise they felt the project would need. Activities undertaken by the staff team included identifying experts and ranges of expertise they felt were needed. In identifying these experts and forms of expertise, the staff were seeking specific content-related knowledge for the transport project. According to one member of the team:

[W]hen we get our charge...we'll definitely look at [potential panel members'] background to see what they are working on recently, what area of focus they have, what background in any other topics they might have, any committees they're on, like what other kind of additional things they can provide the group. We look at their social media and... any videos of them speaking at conferences just to see how well-rounded they are, what other areas they might be interested in, what other areas of focus they have and [producing] sort of a document that we outline compositional guidelines where we have already identified various areas for each assessment. We'll use that as a guide to find people within those groups and approach as necessary (*Staff 08*).

After initially identifying the disciplinary range of expertise required to respond to Transport Canada's questions, the staff team then consulted the CCA's Scientific Advisory Committee for additional information about potential panel members' reputations.

In this scoping part of their work, the staff team drafted a text known internally as the "compositional guidelines" for selecting panel members. The compositional guidelines, created by staff, serve to frame all activity in the project's direction. Writing the panel compositional guidelines involved many different activities for the staff team after receiving the Charge to the Panel. The compositional guidelines are presented as a table or "grid", as the staff often refer to it, including various disciplinary and sectoral bodies of knowledge, the province or region the candidate comes from (e.g., Western Canada, Ontario, Quebec, and Atlantic Canada). The staff

also do their best to identify male and female candidates and strive to achieve an equal representation of gender on its panels.

A staff member reflected on the process of writing compositional guidelines:

[T]o be fully honest, partly when you put together a panel, you're deciding what areas need to be focused. I mean, nothing was out of left field, but when choosing to have a lot of people who focused on social science and the needs of older adults, they're going to have a certain view versus if you had all technology people who focus on technology (*Staff 04*).

The compositional guidelines were used later in the assessment process for finding peer reviewers, where the staff "...try to fill in the [knowledge] gaps from the panel, like areas that are not represented and often areas that are represented on the panels, we get a second voice in the review of the report" (*Staff 09*), a point I return to below.

The act of scoping the panel, primarily undertaken by the CCA's assessment staff team, shaped the direction of the project. Through the preliminary scoping of Transport Canada's Charge to the Panel, the staff team determined what expertise the project needed. In doing so, staff interpreted the CCA's broad definition of science, discussed above, by drawing on areas of scientific expertise that fit their interpretation of the transport project's scope.

While the staff decided Transport Canada's questions required more expertise from the social sciences than from the natural sciences, this decision did not limit the panel. As two staff members pointed out, the transport project required

people that are working in the service sector, people that are working in the medical sector, people that are working in the social sciences or, like, the sociology sector, and then break down that a little bit further. So, for transport, we looked for someone who worked in the airline industry, someone who worked in the train industry, and maybe auto-mobiles. On the medical side, we looked at... geriatrics, gerontology... And then a couple of people from sociology of aging, or epidemiologist I think we had. Just like a

couple of different people that would then come together with their different backgrounds (*Staff 08*).

[Some members of the panel] work with disability [research] mainly and it's, I guess it's developing new products and new technologies and new approaches to solving problems. Existing problems. So the boring definition of innovation is "a new way of doing something"... that's what these guys do with technology... They use technology...in different ways to solve real-world problems. The transportation engineers are looking at, generally, existing technologies related to transportation and how they work (*Staff 04*).

With the help of the SAC, the staff team identified and recruited a 13-member panel (including the Chair) with backgrounds including sociology, transport engineering, biomedical engineering, medicine, social work, business, economics, a retired senior government transportation policy-maker, and an individual working in the transportation industry.

The recruitment process involved the staff team contacting the potential Chair and panel members to invite them to join the panel. Two panel members reflected on this process:

[They] called me up and asked me if I knew about the CCA, I did. Told me about their expert panels, which I already knew about. Told me they were asked to do this particular one and that I was recommended by, apparently, several people and more than one of their member academies... [they] asked if I was interested. So, I had some questions. My main question was how much was focused on technology? He assured me that it was not focused only on technology and we had a – I can't remember – we had one or two discussions and, anyways, I agreed to do it (*Panel 01*).

I was sent an email invitation and information about what the panel would be doing, a little background, obviously, on the organization, and an example of the reports that they produce. And I think that was pretty much it, so knowing the organization itself and what they've done in the past and, having seen previous reports, I accepted pretty much quite quickly to be on this panel (*Panel 02*).

The method used to recruit these two panel members was the same method used to recruit other panel members. Many panel members participated in similar types of work with other organizations and were familiar with it, but not all were familiar with the CCA. As I discuss below, this meant that the staff had to show some panel members how the CCA's assessment process worked, while others were already familiar with it.

Panel Process: Creating a Boundary Object

For the transport project, the Council of Canadian Academies' (CCA) assessment team and panel met face-to-face five times between September 2016 and August 2017. Each meeting was between one and a half to two days long and each took place in a different Canadian city. Each meeting intended to accomplish a particular set of objectives, as indicated by the Council's Assessment Lifecycle Methodology (CALM).

As I will discuss below, several different discursive activities comprised the boundary work performed in the transport project by the CCA in the production of *Older Canadians on the Move* – a boundary object (Star & Gruesemer, 1989). One of these discursive activities, a panel meeting, can be understood as a boundary encounter (Wegner, 1998), where members of the CCA staff assessment team in attendance at the meeting brokered knowledge from different discursive domains. At the same time, the staff members also sought agreement from the panel as the discussion proceeded and achieved this by playing a central role in the activities used to produce the transport report, including the production of several intermediary genres (Tachino, 2012) during the panel process.

This section proceeds in the following manner: first, I discuss the recontextualization activities performed during the five panel meetings; second, I discuss the writing produced by the staff team and panel members throughout the series of panel meetings, focusing on specific texts produced and the panel's feedback on drafts; and, finally, I explore the role "expertise" played in the transport assessment panel meetings and throughout the writing process.

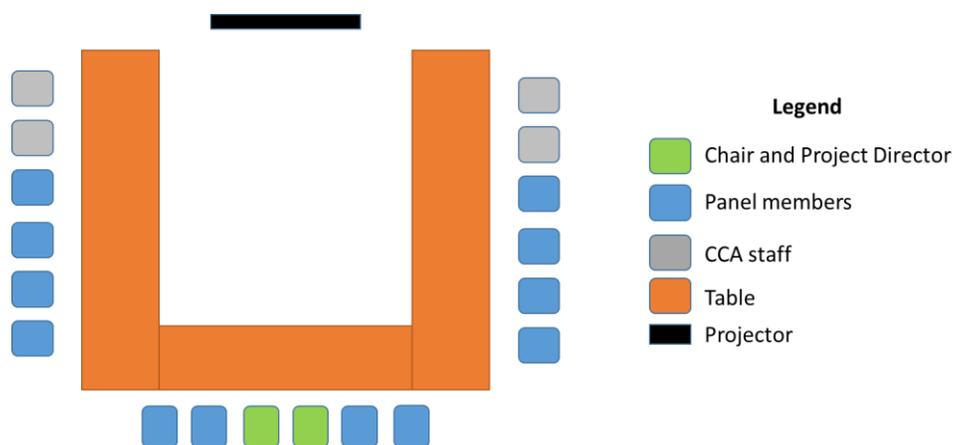


Figure 2: Traditional physical arrangements of a CCA panel meeting.

Panel Meetings. As mentioned, there were five panel meetings held between September 2016 and August 2017. Before proceeding, I will provide a brief description of a panel meeting. Figure 2 demonstrates the typical “U” shaped arrangement of CCA panel meetings, with the Chair of the panel and Project Director sitting at the centre of the “U” and panel members to the left and right of the centre. The staff members on the assessment team sit furthest from the centre of the table and near the projection screen.

As described by a staff member, panel meetings typically proceed in the following manner:

[The Chair] usually [meets] with [the Project Director] and staff in advance ...and they produced a full agenda for [the panel by] mapping out what we were going to do over the... meeting. And it was all scheduled well with time slots for each chapter, if that was the case. And we would usually take it chapter-by-chapter... it was pretty free-flowing. [The Project Director] would give a bit of an overview and [the Chair] would give a summary of where we’re at and what we need to accomplish in the next two days. And then... we worked chapter-by-chapter. So [the Chair] would ask for comments on... a draft [and] the panel would... have a draft of say chapter one and two. And we would have read those and [the Chair] would just open it up to the floor for comments, suggestions. Then people just put up their hand and... spoke to the, to the text of whatever we were dealing with. And often that would raise, you know, larger questions and we would have a debate about a particular topic or an issue, or... It was very free-flowing (*Staff 07*).

Panel meetings have a collaborative dynamic, with staff driving the process with the goal of identifying and establishing the “report narrative”, an emerging storyline recorded by staff during the panel meetings in staff notes. One staff commented that the report narrative

[M]ak[es] sure that the report is structured in a way that is, you know, helping deliver the message that you want to deliver, right. It’s the organizational piece, it’s the structure of the document. That’s so key, right, because when sponsors read these documents a lot of the message is in how it’s organized and structured and getting that right is important... Because a report can fail if the findings are way outside sort of the jurisdiction of the sponsor. Well then it’s like ‘well thanks for that report, I can’t do anything about it because you said it’s Health Canada that has all the levers on the transport for the aging’ (*Staff 14*).

Transport Canada’s questions (specified in the proposal accepted by the CCA) provided a driving force for the five panel meetings attended by the CCA staff team and panel members. As I demonstrate below, each meeting accomplished specific steps in creating the report narrative.

First panel meeting. Panel meeting one (PM1) took place 22-23 September 2016 in Gatineau, Quebec. The staff team’s goal for PM1 was to share preliminary research with the panel and get the experts’ input as to where the research needed to focus. The purpose of PM1 was to establish a shared understanding of the research questions proposed by Transport Canada. To do so, the CCA staff put together a text known as the “briefing materials”, which I discuss in more detail later in the chapter. Part of the process of writing this text required defining the scope of the project, which meant establishing what evidence should be gathered. The successful completion of PM1 meant that the CCA assessment team was able to begin Process Three of CALM, described in Chapter 5. In this Process, the staff team began developing a detailed report outline and completing research and analysis for the second panel meeting.

An important activity in PM1 occurred when the client, Transport Canada, had one opportunity to discuss the project with the panel. Transport Canada gave a 30-minute

presentation to the panel on the department's initial questions, or Charge to the Panel, including the intended scope of the project as defined in the department's proposal to the CCA. At this time, the panel had one chance to ask clarifying questions of Transport Canada in a 45-minute session. This encounter was the only time that Transport Canada interacted with the panel until one week before the release of *Older Canadians on the Move*. One staff member reflected on this process:

[A]t the first panel meeting [the panel] went to the sponsor with the questions about the assessment and... the sponsor also came and their thinking had also changed. They came with, they had the charge we received and actually had other questions that, 'since we sent you the charge, these are the questions we've been thinking about'. And they actually aligned quite well with what the panel was thinking, which is the idea of- there's no such thing as the federal transportation thing and it's not just about technology, it's about other things we can do to improve (*Staff 04*).

A second staff member shared their perspective on Transport Canada's interaction with the panel:

...what happened is, like, the sponsor had discussion with the panel and actually reframed the question. So really clarified what they want, what they need. And so the panel had a really good understanding of what was the focus of the sponsor. So that's the kind of – and actually, in a way, the panel really referred a lot to the questions and you may have heard about this in your previous interviews. So questions were well framed by the sponsor (*Staff 11*).

The interaction between the client and the panel led to additional clarifying questions that were added to the original questions listed in Transport Canada's proposal. These included:

- How can Transport Canada (TC) support integrated, seamless movement across the transportation network (door-through-door)?
- What physical, design, economic, and social barriers limit the access of seniors to the national transportation system?
- Do people change the way they interact with the transportation system as they age? What impact does this have on modal choice?
- What impact (positive or negative) do new technologies have on the transportation experience of seniors?

- Which specific international and/or domestic innovations could be applied in the Canadian transportation context and what impact will these have on seniors?

(CCA, 2017, 4).

These new questions were in addition to the list of initial questions that Transport Canada had provided. One additional point of interest here is that the term “senior” appeared in these sub-questions. This term was considered contentious among some panel members, whose expertise included an awareness of their disciplinary use of the term “older adults” instead of “seniors”.

The scope of the project was clarified through the panel’s questions to Transport Canada. From this point on, the panel worked independently from the client to address the initial questions provided to the CCA in the proposal along with the additional clarifying questions that emerged from PM1. As it turned out, the panel determined that the project called for additional emphasis on the social aspects of the original questions as opposed to the technological aspects. The staff team’s identification of the specific expertise needed for the project may have influenced the panel’s decision to take the project in this direction. Transport Canada shifted their thought process to align with the broader social dimensions asked about in their proposal to the CCA.

Second panel meeting. Panel meeting two (PM2) occurred on 12-13 December 2016 in Ottawa, Ontario. There had been a change in Project Director just before PM2, which the staff team felt caused some slight confusion among panel members. As one staff summarized:

[T]he [Project Director] change[d] right before meeting two, and the [Research Associate] changed a couple of times right before meeting two and then right before meeting... and around that period, there was admittedly a bit of a... you could tell [the panel] was slightly concerned over the project management. Nothing to do with any of the people, just there was a lot of chaos and a lot of upheaval with what’s going on. I think we did okay in meeting one, they liked our materials and [the panel] was

comfortable with the staff. Then the staff changed. So there was a bit of a concern (*Staff 04*).

For the project to succeed, the staff seemed to depend on a bond of trust between the team and the panel. For this trust-building to be effective, the staff team needed the panel to trust their work. After PM1, the re-formed CCA staff team felt that the panel's trust in them had been temporarily compromised, leaving them with the task of re-establishing trust for the second panel meeting. While there were additional changes in the staff team to come among the researchers and the Program Coordinator later in the project, the team members felt comfortable with the level of trust the panel had for them after PM2 through the rest of the project.

During PM2, staff members and panel members reviewed the research and data analysis that the staff had completed since PM1. They also identified innovations and technologies that existed and were related to the project's focus. At this stage, the staff presented a potential outline of the transport report to the panel, which included high-level summaries of the purpose of each chapter and the main sections. By the end of PM2, the panel had set the research agenda for the scope of the final report and identified missing pieces in the preliminary draft of the text. The successful completion of PM2 brought the CCA assessment team to Process Four of CALM, which included completing the final stages of data collection or "evidence gathering", as the CCA refers to it, and the first draft of the report narrative.

Third panel meeting. Panel meeting three (PM3) was held 21-22 March 2017 in Calgary, Alberta. The central goal for PM3 was to review and revise the first complete draft of what would become *Older Canadians on the Move*. This included identifying, discussing, and solidifying the central messages presented in the draft, a task that required the panel to agree on the report's main points and how the final report would frame these points. At this meeting, the

panel briefing materials – a text I describe in detail below – consisted of a complete draft of the transport report. The successful completion of PM3 brought the group to Process Five of CALM, which involved completing revisions to the first draft of the transport report using the panel’s feedback.

In addition to completing the drafting process by seeking and incorporating panel feedback into the draft, Process Five of CALM also required staff to do a “substantive edit” of the draft and to begin the peer-review process. An externally contracted editor completed substantive editing and a review of the draft. In collaboration with the communications unit, the staff team oversaw and managed this process. Specifically, the staff team took the external editor’s comments and suggestions and updated the draft accordingly. A substantive edit was essential for preparing the second draft of the report. Once the second draft was ready, the staff team prepared for the fourth panel meeting.

Fourth panel meeting. Panel meeting four (PM4) was held 6-7 June 2017 in Calgary, Alberta. Much like PM3, the main goal of PM4 was to review the second draft of *Older Canadians on the Move*. PM4 marked the completion of Process Five of CALM. In PM4, the staff sought the panel’s agreement and approval of the findings and conclusions included in the draft. The panel’s approval meant that panel members were ready to send the report to the peer-reviewers. To do so required finalizing most of the report’s content and developing its concluding points.

The CCA has a unique peer-review process that signals the end of the panel meeting process. Between PM2 and PM4, the staff get help from the CCA’s Scientific Advisory Committee (SAC), which appoints a member to oversee or “monitor” the peer review of a

project's final report. Between PM3 and PM4, the CCA staff began identifying and recruiting individuals to review the transport report. Once assembled, the ten-member peer-review committee, which remained anonymous, reviewed the content between the end of PM4 and before PM5.

Before recruiting members of the peer-review committee, the staff identified potential reviewers by creating an updated version of the compositional guidelines used to recruit the panel members, a text known as the “peer-review compositional guidelines”. Creating this text involved taking the compositional guidelines developed at the start of the assessment process to, as one staff member put it, “fill in the [knowledge] gaps from the panel” (*Staff 09*). One staff member described this process:

...when the time comes to appoint the external [peer] reviewers, staff will generally produce a grid of the kind of expertise that is required to review the draft report. So we try and make sure that we covered the various disciplines that are referred to in the expert panel report. And we also try to ensure that there is a reasonable geographic representation, although obviously... it's more important that we have experts depending on the particular topic from the academic sector, from the private sector, from the—often the non-for-profit, the NGO sector. It depends on the topic. So [the Scientific Advisory Committee] look at the grid and usually come up with a lot of names and in fact staff will have already done their work and often will present us with long lists of names and basically ask for our comments about each of the individuals. It's quite a process to put together ... the external reviewers... for the transportation one, there had to be some expert reviewers from the segment of the population that was the focus of the report. It can't just be from academics in transportation, it can't just be people from the private sector. I mean, we had those, but we had to make sure that there were people that had expertise in the aging population (*Staff 12*).

Assembling the peer-review committee involved a consideration of many factors. CCA staff were conscious to organize a committee that had experience in different sectors of the economy and academic disciplines to crosscheck the claims made in the report. As with the panel, Canadian geography and gender were conscious considerations in putting together a peer-review committee.

Once formed, the peer-review committee reviewed the text. One staff member described the transport report's peer-review process:

[T]he external reviewers get the draft report and they're given a list of specific questions that they have to address in each chapter. They come back with – each of them comes back with their comments and ... then there's a final meeting at which they review them. And that's where the peer review monitor from [the Scientific Advisory Committee] sits in. The peer review monitor does not participate in the process. In other words, [they are] not an expert in transportation and the aging population [and their] job was to ensure that they have dealt fairly and adequately with each comment of each reviewer...But by and large, the peer review monitor stays silent if all is going well and then afterwards, testifies to the Board in writing that the process of review of the external expert's comments was conducted appropriately (*Staff 12*).

The reviewers sent their comments on the draft to the staff team, who then created a text called the “peer review comment grid”. This text features all of the peer-reviewers' comments arranged into a long table by chapter and page number. The staff team anonymized and coded each of these comments using a three-tier system of minor, moderate, and major concerns raised by the peer-reviewers. For Transport Canada, there were no comments listed as major concerns by the staff team.

One aspect of the boundary work performed by the CCA in creating the boundary object of an expert panel report involves ensuring the credibility of the final report within the discursive domain of science. To do this, the CCA uses its peer-review process – a process valued by scientists, among others. As one panel member reflected, “You have your expert panel, but then you have your peer-review of their work. So [the CCA are] in the business of getting experts together, trusting their expertise, producing a product, and then having a peer-review, and the considering the comments from the peer-review” (*Panel 07*).

Fifth panel meeting. Panel meeting five (PM5) took place on 17-18 August 2017 in Ottawa, Ontario. The goal of PM5 was for the panel to assess the peer reviewers' comments and

incorporate feedback on the developing draft by accepting or rejecting changes. A key part of this process involved moving the panel towards a final consensus and, as it is referred to by CCA staff, “sign-off” on the report.

PM5 is part of Process Six of CALM. The work done after PM5 marked a transition between the panel and post-panel processes. Here, the researchers on the staff assessment team began working more closely with the communications unit to prepare the text for publication, and to plan the launch of the report. The researchers from the staff team were involved in the launch and dissemination planning, which was a key activity that involved strategizing who to send the final report to. This planning activity involved producing a text known as the “distribution plan”, which is a specific “list of everyone we plan to send the report to” (*Staff 09*), a point I elaborate on below.

Once all peer-reviewers’ comments were addressed by the panel, the staff finalized the draft and prepared for another important activity in the assessment process, a teleconference to have panel members “sign off” for publication. Panel “sign off” is something sought throughout the entire panel process; however, it comes down to each individual panel member agreeing with what has been written in the report as a response to Transport Canada’s questions. The CCA publishes the expert panel report after all panel members had signed off to indicate that they supported the CCA’s publication of the report as a summary of the panel’s collective “interpretation of the evidence”, to use the CCA’s phrasing.

Writing and Revising *Older Canadians on the Move*. Here, I present my textography (Swales, 1998) of the writing that contributed to the recontextualization of expert-produced scientific knowledge for use by policy-makers. In this section, I describe what these texts are and

the purpose they serve; how the panel provided feedback on developing ideas in the drafts of the texts; and, how staff incorporated the panel's input into the texts.

As I explain below, the texts produced for each panel meeting are reproduced in a new form for the next panel meeting using the panel's guidance from the preceding meeting. One staff member commented that the panel "provide high-level structure, conceptual ideas, some readings, we produce a draft [and] it's vetted through them... And you iterate like that until you get something that can go to peer review and then you get it back and you do it once more and your report is done" (*Staff 01*).

Texts produced. Several texts produced throughout the transport project's assessment process functioned as intermediary genres (Tachino, 2012) that facilitated uptake by the panel members and staff assessment team in the CCA's boundary work. There was a unique dynamic at play in the writing of the transitory texts created during the drafting of *Older Canadians on the Move*. The process of writing these texts involved both the staff team and the panel. As one panel member put it,

[T]he grunt work was done by the staff at the CCA...they had to go and search the literature, they had to synthesize the literature, they had to pull out the information... they would do the first draft and then we will take those and revise them and give our comments. And there was times when somebody in our panel had the expertise in a certain area and they took on that area and refocused it differently (*Panel 06*).

While the staff team did the "grunt work", the panel provided guidance, input, and approval in reworking the content throughout the assessment process. Staff members played a central role in recontextualizing the expert-produced scientific knowledge embedded in the final transport report.

As I discussed earlier, the CCA staff team produce 113 texts in any project. For the transport project, 19 of these texts were central. These included:

1. Assessment Proposal – staff analysis
2. Preliminary background & situational analysis
3. Compositional guidelines & short-list of panel candidates
4. Panel meeting 1 materials (background research, presentation PowerPoint slides)
5. Panel meeting 1 minutes/summary
6. Staff background research (literature review, report outline, report narrative)
7. Panel meeting 2 package
8. Panel meeting 2 minutes/summary
9. Detailed report outline
10. Draft 1 (for Panel meeting 3, the basis of the meeting materials)
11. Panel meeting 3 minutes/summary
12. Draft 2 (includes input from panel during Panel Meeting 3 – core of Panel Meeting 4 materials)
13. Panel meeting 4 minutes/summary
14. Peer-review comment “Grid” (served as basis for panel meeting 5 materials)
15. Panel meeting 5 minutes
16. Draft – post-review
17. Sponsor briefing package (embargoed copy, talking points, PowerPoint slides)
18. Final published report
19. Staff presentation (PowerPoint slides)

Additionally, other texts provided updates to the public on the project as it progressed, namely the “web text”, which served as a general description of the project and gave progress reports throughout the project (7 in total). Conversations held during both the staff team meetings and the panel meetings also played a central role in recontextualizing the expert-produced science.

Below, I describe three texts – the “panel briefing materials”, the “panel meeting summary”, and the “web-text” – that were central to the activities of the staff assessment team and the panel in the boundary work of recontextualizing expert-produced scientific knowledge during the transport project. The production of these texts takes place in a recurring manner throughout the assessment process and thus play a central role in the boundary work performed by the CCA staff. These texts can be conceptualized as a genre set (Devitt, 1991), produced for each panel meeting, used by the CCA assessment team to move the panel towards agreement on the final claims to be made in *Older Canadians on the Move*.

Panel briefing materials. Before each panel meeting, the staff team produced a series of texts to create a text known as the “panel briefing materials”. Produced five times throughout the transport project, these briefing materials ranged in length from 65 to 125 pages. The briefing materials served multiple purposes from logistical to analytical. The purpose of this text changes throughout the panel process, as one staff member summarized:

In preparing the briefing materials, the team will feed in sort of how they want to structure the meeting. So we'll prepare the agenda – depending on the meeting. So if it's the first meeting, then obviously there's more on the front end of introducing the [CCA] and having sort of a scope laid out as well as a discussion with the sponsor. And then further agendas will focus more on the report content itself. So there's the agenda aspect. There's putting the report together. So for the first meeting, there will be less of a structured report but more of a sort of background content of what we propose the report should look like where the panel can sort of take a first glance at how they want to approach writing the report. And then subsequent meetings will have fuller reports within their structure. And then details on the meeting itself, where to go, where to stay, where we will be having dinner (*Staff 08*).

Several common features appeared in the five sets of panel briefing materials: a table of contents, an agenda for the panel meeting, a statement outlining the purpose and objective of the meeting, the assessment questions, and draft materials of the developing report. In panel meeting one, the briefing materials were accompanied by a slide deck that summarized the preliminary research

and scoping activities undertaken by the staff leading up to the panel process. The slide deck accompanied the briefing materials throughout the assessment process, although they became less specific through each subsequent panel meeting as the panel's conversation focused on the draft and the panel's feedback. Panel meeting five briefing materials focused on the important activity of the peer review.

Researchers on the staff team developed content in the five sets of panel briefing materials, with input from the Project Director and Project Coordinator. Both were involved in reviewing content, although the Project Director managed higher-level details and oversaw the development of each item (e.g., agenda, purpose, and materials) in the texts, and the Project Coordinator edited the text in terms of format, grammar, and spelling.

The panel meeting agenda is one text that received particular attention from the staff team:

[I]n advance of the meeting, and this is usually happening at team meetings, the [project coordinator] or the [project coordinator] and the [project director] will draft a meeting agenda. In this case, we also had comments from the chair. But before going to the chair, we would all kind of weigh in and think about what would need the most time developing. Like how much time should we allocate to each chapter, for example, if we're discussing them. Which one's least developed. You know, how to have that play out to get what we need out of the meeting... Because these are the most important times that we see them. You know, there's a reason that sometimes we fly across Canada, you know, to all meet face-to-face. I think we've learned that meeting face-to-face, you get much more out of it than even a teleconference or a zoom where you can see people on camera. It's not the same rapport... (*Staff 10*).

The staff were aware of the cost of each meeting and the value of participants' time. Each panel meeting was planned in collaboration with the Chair to best use the panel members' time. Putting the panel briefing materials together required thinking through what each meeting needed to accomplish according to the project's stage in the CALM.

The panel received briefing notes a couple of weeks before each meeting. One panel member commented on this process: “We would have read it and then we would go through each section of the report, discuss it, and give direction for the next stage of the project [at the panel meetings]” (*Panel 06*). As the transport project progressed, these briefing materials became the first and second drafts of *Older Canadians on the Move* used during PM3 and PM4. This means that it was in the briefing materials that staff presented the data they had collected, and panel members would approve the interpretation of the evidence.

That the text is called panel *briefing* materials can be seen as a way staff members help the panel reach agreement about the report’s content. The staff team prepared the document and then “briefed” the panel, which implies that the assessment team – recognized by the transport panel as doing the “grunt work” for the assessment – did much of the research and writing for the report. At the same time, the panel played an essential role in the drafting process because the panel could not reach an agreement unless each member agreed with what was in the briefing materials, which was not surprising given that the panel is the author of the report. As I discuss below, the feedback that panel members gave at the transport panel meetings was essential to the development of the final report.

Panel meeting summary. Another important text produced throughout the transport panel process after each panel meeting was the “panel meeting summary”, with the staff members drawing on their “panel meeting notes”. These notes, which were hand-written or typed and up to 50 pages in length, served as a record of the points made by panel members about specific topics or parts of the report, such as ideas, messages, additional sources, suggested wording, and clarifying disciplinary meaning. The staff team were “trying to take, you know, you want to take away the big picture items, I think. And like the key guiding points” (*Staff 10*). For the transport

project, the researchers on the staff team had permission from the Project Director to ask clarifying questions of the panel at any point. Later in the assessment process, the panel meeting notes reflected feedback provided to the staff by the panel on the drafts of the final report as it was developed through panel meetings three and four in particular. One staff member described how the panel meeting summary was written and used:

Following the meeting, we'll develop a meeting summary that then goes back to the panel for their review and they sign off on it just to make sure that we sort of picked up on everything and everything is fine. So following the—directly following the meeting, the team will get together. We'll sort of put our notes together. Someone will do the final write up, whether that's me or another researcher. It just sort of falls with whoever wants to do it, whoever has the time. And then the [project director] will share that with the panel, usually a week after the meeting...It's a good way to go back sometimes if things were missed or if we have additional questions for the panel. We can include those as well... and it's also helpful for panel members that can't attend the meeting in-person. So everyone has got a sort of up-to-date of what happened over the course of two days (*Staff 08*).

Another staff commented that the panel meeting summary was "...a way of making sure that the panel agrees on the next step we're going to take and what the workload before the next meeting" (*Staff 11*). Panel meeting summaries served to move the group towards an understanding of what the key points in the report would be. Once the staff team produced the panel meeting summaries, they would send it to the panel to approve or "sign off" on them.

In producing the panel meeting summary, the staff ensured that panel members approved of the project's direction to-date and the staff's work between panel meetings. In doing so, the staff team used the panel meeting summary as an additional strategy for soliciting panel input and ensuring that the conversation's momentum continued throughout the panel process.

Web-text. The communications unit's Web Specialist produced the web-text with help from the assessment team's communications liaison person. There were two features of the web-

text: the full web-text and a “web update”. The web-text informed website visitors about the project’s development and “...describes the assessment, gives us who the sponsor is, who the Chair is, who... the expert panel is, and a little background on the question” (*Staff 13*). It listed the name of the project (“Adapting to the Transportation Needs of an Aging Population”), the client, the scope of the project, the main questions or Charge to the Panel, a progress report, the background or need for the project, the names of the expert panel members, and the CCA’s contact information.

The web update, or progress report, was a pop-out box on the web-text that served a separate but related purpose:

...it tells people what’s the stage of the assessment. If we had a meeting for, if we had a, uh, what is the stage of the assessment, if it’s going to come out, when it’s going to come out. It varies, right? Like we do probably... we do one web update at the beginning of the report—assessment is announced, or the project is announced. And then when the first meeting, second meeting, third meeting, and fourth meeting. And then the launch. So it’s just to tell people, readers of our website, where the stage of the project (*Staff 13*).

Both the early version of the full web-text and the web updates comprised transitory texts in intermediary genres (Tachino, 2012) that informed readers about the project’s development.

Panel feedback on the current state of the project. As mentioned above, the bulk of the drafting of *Older Canadians on the Move* took place between PM2 and PM4 based on earlier research done in PM1 and PM2. Throughout this process, “the program directors and researchers [were] really working to help the expert panel members get as clear and concise and meaningful a draft report as possible” (*Staff 03*). As mentioned above, significant changes in the make-up of the staff team left the staff team concerned about ensuring that the panel members trusted them. One member of the staff team explained the situation:

There was a bit of tension between the panel and the team with the team changing so many people. The panel wasn't initially – when I joined – the panel, or particularly the Chair, wasn't as confident with the quality of the team because they were unfamiliar to them. But as the report progress, they saw the drafts that were being produced and they were then much more comfortable with the team. I think it's just a certain level of unfamiliarity, especially for these experts, if they're not writing, they don't know the CCA staff and they don't know how great, I think, the CCA staff are. So sometimes a bit hesitant. And especially if the researchers have changed, the project director changed, the project coordinator changed. So I think that wasn't the best for the panel to see, but then they were, as the project continued, they were quite happy with the result because it worked out (*Staff 09*).

Another staff member commented on the team's need to regain the panel's confidence:

So basically [we] had to make sure--that was kind of a big part of the job, to make sure the panel, the chair—like to get the chair's confidence. And that was... once [we] got it, things were fine. But that's really making sure, that's really – that's how we get confidence. Otherwise if you don't, your project will be totally screwed up... It's really complicated, it gets really complicated... And once [we] got it, [we] had like lots of freedom... Once that was done, it was fine... what [we] tried to do was to make sure the panel understand the contribution of the team members... [which] means that the panel will actually go and talk to [the researchers] because [they are the] team expert on this part... So, we had a good interaction between staff and panel member at the time (*Staff 11*).

This sense of confidence was essential for staff to get panel input and feedback throughout the assessment process. One staff member suggested that the staff-panel dynamic drives the manner in which knowledge moves through the CCA. As they explained: “this dynamic is what drives it, is the translation of findings from one discipline to another. Getting people from very different disciplinary backgrounds to be able to actually kind of listen to each other and work with different evidence outside of their domain and come to sort of an understanding. I think there's a kind of translation there that can be very important” (*Staff 02*).

Once the newly re-formed staff team felt they had the panel's confidence, they relied heavily on the panel's feedback. One staff member described how the panel members provided this feedback:

There was higher-level comments outside the meetings from certain panel members, absolutely. Some provided detailed feedback on the whole, or on the whole report. Or they provided detailed feedback acknowledging they read the full report and focused on certain sections. And some just provided guidance on certain sections. Some only spoke up at the meeting, but were really clear there with their opinions and their thoughts. Some spoke up at the meeting and were less than clear and provided less than helpful guidance, but that was the minority in this case. But some people only, it is pretty important that some people came to the meetings because, for some people, what we got out of them was through discussion at the meetings and their reaction to our written materials, but that reaction was only really provided at meetings or teleconferences. Whereas there was another group who would provide email- either physical copies, they would hand it to us at the meetings, or email comments (*Staff 04*).

The panel provided both written and oral feedback. Concerning written feedback, one staff commented that "...we hope[d] in some cases that the panel provide[d] some... written feedback as well, so maybe it will direct that... It works to a greater or lesser extent. But the hope I guess is just that for I would say, you know, less than 25% of panel members usually send in, like, written comments on the draft in advance or afterwards" (*Staff 10*). This meant that the panel meetings were very important for staff because, by the rough judgement of the staff member, 75% of feedback came from panel meeting conversations.

Oral comments were the most prominent feedback that the staff received. As one panel member put it, "basically at each meeting [there was] a lot of feedback, discussion about topics, where the gaps are. And that's where most of the work happened" (*Panel 06*). During the panel meetings, the panel discussed the draft provided to them in the panel briefing materials, most of which was written between the end of PM2 and the beginning of PM4.

The panel members had their own view of the type of input needed from them in order to move the report along. The panel appeared to work collaboratively in providing feedback related to their area of expertise. As one panel member commented:

...every time there was a draft or section written, all the panelists were involved in providing feedback. Whether they liked it, didn't like it, didn't like or thought it [was off] and needed to be changed, if there was still a gap in the evidence we wanted to go look up some more. So that was ongoing every time the report came, that was done (*Panel 06*).

Other panel members discussed what kind of feedback they contributed throughout the transport project:

Yeah, the CCA [wrote and] staff would send me drafts of portions of the report and then I would edit and send them back... Or add things, or suggest additional sources, or additional points to be made... it was pretty straight forward (*Panel 07*).

While this panel member felt that providing feedback involved copy-editing parts of the report, other panel members suggested that this process involved minor revisions and editing:

It may have just been around some of the content, or make sure that it was frame[d] appropriately, or the right context was included in what they were writing.... sometimes, obviously if they're capturing something from a discussion that we're having, they may not have got all the right points in there or missed something that kind of would really help set up or support the argument that was being made in whatever they were writing. So, just ensuring that, you know, all of the various facets were being pulled into it... It may have just been around some of the content, or make sure that it was frame appropriately, or the right context was included in what they were writing (*Panel 02*).

There were a couple of areas for me that I raised that I—that we needed clarity. One was the involvement of first nations, how far to go on that. Another one was comments about the problems with silos, jurisdictional silos. Also, there was a lot of discussion on this panel between disability and age, and I come from more of a disability background. A number of people came from age. And, you know, just that kind of figuring out how all of those fell together and being respectful of each other's perspectives on things (*Panel 05*).

...in [some] cases, I just had to ensure that the language was softened so it didn't sound like the panel was endorsing or refuting the claims made in the [the literature]... [For example] it was suggested in [a report] that prescribing regulations led to better compliance and a greater travel experience for people in general, but obviously for aging people. [But,] for the panel to validate that statement in [the report] saying that the experts believe that prescriptive legislation is the solution, I couldn't support that and we came up with language was more saying that there's an opportunity to assess regulatory regulations with a view to the most effective delivery method. And it didn't suggest that prescriptive was better than standard space, rather that this was opportunity

to definitely develop regulations, but it didn't make the claim that prescriptive was better (*Panel 03*).

In general, the panel seemed to provide oral feedback to staff on an issue-by-issue basis. The feedback provided by each panel member was unique to their respective area of expertise. This is not surprising given that the CCA staff team designed the panel based on each member's particular expertise. Having multi-sectoral and multi-disciplinary expertise at the meetings ensured that all perspectives – those of industry, policy-making, and academia – were incorporated into *Older Canadians on the Move*.

Getting panel input. The staff were critically aware that the majority of the panel's input would come from the panel meetings. Accordingly, the CCA staff team developed a series of strategies for ensuring that they were able to get the input they needed from the panel during the time they had with them. In addition to the strategies built into CALM, there were also specific ad hoc strategies devised during and between panel meetings.

CALM-prescribed strategies used during panel meetings. The first strategy employed by the staff team for developing the agenda for the panel meeting involved deciding on the sequence of topics to discuss. The staff team was careful to listen and observe the conversation between panel members. However, the staff would at times ask specific questions of the panel, requesting that they elaborate on a particular point or identify additional resources to use to complete a section of a chapter in the final report. One staff member summarized how this worked:

...while [the Chair] would chair the meeting and run it, we would have opportunities to present what we did and hopefully also guide discussions with respect to saying 'we have this heading and I found difficulty to researching X' and why and 'could you point us to a representative example?' So we had opportunities to kind of shape our interactions with that, but it was less like, once we kind of had that opportunity at the beginning, I would say we weren't really engaged further if that makes sense. Not that we're ever engaged in terms of discussion because it's the panel's report, but I think

that in checking-in etcetera by the end, there's this understanding that we're there to support the writing, but we're doing the brunt of the writing, you know? And so it was just more collaborative (*Staff 10*).

The staff team prepared the materials and agenda for each meeting (reviewed by the Chair). The Chair played an active role in running the meeting to ensure discussion of all material according to the agenda. This meant that the staff members were able to discuss specific points with panel members, whose expertise related to specific sections of the draft of the final report-in-progress. Staff relied on the panel's trust to ensure that they got the input they needed from the panel during the meetings.

The staff felt that the Chair's abilities had a direct impact on their capacity to write and to interact with the panel. As one staff explained:

The Chair was very effective in allowing every panel member to speak and them having the opportunity to weigh in on every chapter, which not really a CCA staff strategy other than choosing a good chair. But, that generally helps the staff engage. Also, the chair in this case was very, like, effective in including the writing staff in the panel discussion, I thought. She would turn to the writing staff and say 'hey did you get everything you needed', which is something we love to see in a chair because we don't always have that. So when they've hopefully reached some sort of consensus, this panel chair in particular would often say 'ok, have you got everything? Were we clear enough?' because sometimes the panel will kind of move on without kind of making a decision. They'll just disagree and that will be that. So it's always nice to have a chair that is supporting the writing staff (*Staff 09*).

This dynamic continued throughout the two remaining panel meetings. Having a Chair who would ensure that the staff team got the input they needed from the panel was essential for the transport report's successful development.

In addition to having an effective panel Chair, the staff team used specific CALM-prescribed strategies both during and between panel meetings to solicit panel input and feedback on both the first and second drafts of *Older Canadians on the Move*. During panel meetings, staff documented which panel member agreed to do what in terms of identifying resources or

reviewing specific sections of the report. These notes were used to create panel meeting summaries, as described above.

Ad hoc staff strategies. The staff team used three strategies to engage panel members between meetings: (1) reaching out to specific panel members, (2) identifying “chapter champions”, and (3) developing “call-out boxes” (described below). The first strategy was very straightforward in that the staff members would

...just reach out as we need[ed] to recognizing everyone’s busy and this is... a volunteer activity, so we don’t—we try not to over-tax them in between the meetings. We do gage their level of reception, so we know the panel members that will respond more or the ones that will provide the most information are obviously ones that we like to engage with (*Staff 08*).

The staff reached out by email or phone about papers or data sets. One example staff identified was the Canadian Longitudinal Study on Aging, which is “...a very large data set, so we actually were able through [a panel member] to access this great set of data on difficulties, anyways, much bigger than the census data and much more broken down with respect to transportation needs as well. More specifically targeted questions” (*Staff 10*).

The second strategy that CCA staff commonly used was to identify chapter champions.

As one staff member explained,

[Identifying chapter champions] is one of the CCA strategies for engaging panel members [where] you identify – or a panel member volunteers – a panel member for a specific chapter. Usually it’s a chapter that’s related to their area of expertise. And during the panel meeting, that panel member will do a very brief... overview of that chapter, whichever one has already been reviewed and kind of spear-head the discussion on it, which really helps that panel member in particular feel ownership over that chapter but also the other panel members to feel like they can engage more quickly if they have someone on the panel starting the discussion (*Staff 09*).

These champions orchestrated the discussion by leading the panel through what the staff team had prepared on a particular chapter in the panel briefing materials. Some staff members seemed

to find this strategy to be effective for “engaging” the panel. By engaging the panel, the staff members gained access to the expertise that a specific panel member brought to the panel meeting.

The staff used this strategy informally in the transport project: “[For the transport project] they were not like labelled as chapter champions, as we do sometimes more formally, but... we had specific people for specific chapters so we go to them and they kind of knew where information was [but] we didn’t need that much... information between panel meetings on this project” (*Staff 11*). One staff reflected on how this process went:

...we have a chapter on kind of the governance... just to make sure we got the legal stuff right, actually [a staff member] and then I, we worked with [a panel member] outside the meetings and sent drafts back and forth and [the panel member] commented on them. So we did engage [that panel member] more thoroughly just based on [the panel member’s] expertise because it was kind of background information but it’s important to get it right... it was great to have [that panel member’s] expertise and [the panel member] was very willing to engage. So I actually had phone conversations even at peer review stage in trying to clarify comments to make sure we got it right. And [the panel member] was very willing. You know, I could pick up the phone and talk to [the panel member] as well... It was kind of like a more one-on-one. It wasn’t a specific methodology, I would say, but as warranted interactions (*Staff 10*).

As demonstrated with the example of transportation governance mentioned by the staff member, expertise relates specifically to what a panel member represents in the staff’s panel compositional guidelines.

A third ad hoc strategy that the staff included in the panel briefing materials is known as a “call-out box”, which is a “...a pretty common practice, especially in the earlier drafts, we do want as much information as we can get” (*Staff 08*). Call-out boxes make up part of the briefing materials’ text that is placed in a box labelled “questions for the panel”. These questions are “not

specific questions *per se*... it's more like your thoughts, where are the gaps?" (*Staff 08*). One staff's comment on this practice was particularly insightful:

We do that, it's true. That doesn't work very well, though... I mean, we still do it, but... I think it still helps [the panel] to kind of think about it, but we don't usually get answers at the meetings... I think it helps us more than [the panel]. It kind of helps us to know what we want to get out of it, but it's not like they're commenting being like 'oh yeah, lets answer this thing'. And if you try to get them question by question, it doesn't work very well either (*Staff 05*).

While most assessments use call-out boxes, they did not seem to be particularly helpful in engaging panel members' expertise. Call-out boxes did, however, play an important role for staff members in developing insights into issues they faced in preparing the panel briefing materials.⁸

Incorporating feedback from the panel. Staff incorporated the panel's feedback on each draft in a way that reflected the panel's intended corrections to the draft. This no doubt is related to the strategies that staff members used in moving the panel towards "signing off" on the summary document for each panel meeting. One staff member reflected on their experience in incorporating the panel's feedback into draft revisions:

...I didn't feel like we had to start again. I felt like we had to modify what we had and go back to what we had and figure out how we could use it... I was always able to use what we had... You're adding and modifying as opposed to throwing out. There's very little thrown out, I think, beyond meeting one (*Staff 04*).

The same staff member gave an example of how the staff team received and incorporated the panel's feedback:

[At one point], they were like "this is wrong. This is not right and we need to start thinking about the whole journey along the way". And that had more, I think, to do with presentation than anything else, in retrospect. It wasn't presented in a meaningful way.

⁸ This is one staff member's understanding and may not be pervasive within the CCA; however, this is a particularly relevant point for the transport report, the focus of my research.

They were right, it wasn't. So, that was a "go back to the drawing board and try to find another way to present this because we don't get what you're trying to say here and it doesn't seem right". And we did, we present it and then we... started talking about the "stages of the journey" and they did--that worked for them. "I can see this now, I can understand". And they were able to comment on more individual sections. ... It was them saying basically "we don't get why this is here, we don't get how this fits in". And it was a key piece, right, to have technology and innovation related to "why this is important? The way you're presenting it doesn't really tell a story". So, the onus was on us to figure out a way to tell the story. And we did (*Staff 04*).

The panel's feedback focused on specific issues that prevented the draft from working. The staff team did not, however, receive much feedback on points that the panel accepted. The staff team appeared to work through the issues that arose over the course of the five panel meetings.

The staff team's weekly meetings, described earlier, were central to the drafting process. Based on the oral feedback that the panel provided during panel meetings and the written feedback that some panel members provided by email, staff proceeded with the "grunt work" by revising the text accordingly. One of the members of the staff team reflected on how the team worked together when writing:

...it's hard to explain because we just do it, but once we were done a chapter, we kind of set our own deadlines. I think it was more self-directed than [the project director], like he would for sure set a deadline, but if we were done it would be like 'hey, I've finished this section. Do you mind taking a peek at it?' and we'd share it and kind of edit it for grammar and also, you know, flow and stuff. And before all the panel meetings, [the project director] would also look at it and he was very good at kind of high-level flow type ideas as well (*Staff 10*).

The same staff member continued with an example of how the team members helped each other refine the draft of the final report:

[The draft] had had my eyes and either one or two other researcher's eyes [before being sent]. So you know, we're all...fairly educated. Like we caught most of the small errors. And so with [for others] it was kind of okay or some broader ideas like maybe we could present this section first. Or in this section, you should use something else. So it was more of a big picture idea. And usually we did that right in advance of a panel meeting. ... We have weekly team meetings, so we would discuss kind of how we were laying out

the chapter [and] it's not like we were doing it in complete isolation or anything (*Staff 10*).

The team worked very well collaboratively both amongst themselves and with the panel in taking the panel's feedback and revising drafts of the final report. By sharing drafts of chapters with each other, staff members raised their general awareness of the content in other parts of the report while also doing sentence-level editing. At the weekly team meetings, the staff members also discussed the ideas that had come up in panel meetings and shared resources such as articles and data sets.

Member-checking as an example of panel input. Towards the end of the process, the panel suggested that there be a member-checking activity included in the transport project. A member-checking activity involves confirming the way that ideas are presented with members of the population being studied. One panel member summarized this process and their perception of what happened:

...we did come to one point late in the process where we did have some fairly heated discussion about how we were going to.... verify our work. And several of the panel members wanted to go out and do surveys of older Canadians and, in other words, sort of a verification methodology for our work and our conclusions. And that didn't rea— did not really sit with the way the CCA normally approaches its methodology because the idea is the people who are appointed to the panel are supposed to be the experts. And it's not normal that you would go out after you've basically almost completed your work and then try to do a testing of your, you know, of the validity of your work (*Panel 07*).

The same panel member then explained the solution to the issue of member-checking:

So there was a lot of debate and discussion about that and we did find a compromise whereby [a passenger air company], the—[the Panel member] from [Industry] volunteered to have [the company] survey them, which they do all the time, of their passengers and they were able to breakout older Canadians and were able to do a fairly quick survey addressing some of the questions that we presented to them. So that was kind of a compromise to the way the CCA normally conducts its expert panel reviews... there was certainly push-back [from the CCA] because it didn't fit the profile of, or the normal process for an expert panel because it almost was, in a sense saying, that the

expert panel now needed to go out and verify its work when in fact the panel was appointed to be the experts. So there was, but you know quite a bit of debate between staff and some of the panel members who were quite adamant that we needed to seek that direct input from older Canadians (*Panel 07*).

The transport assessment was the first time that the CCA conducted a member-checking exercise. In the past, the CCA had felt that the peer-review process, where additional experts weighed in on claims made by the panel, accounted for such an activity.

A staff member reflected on the member-checking debate:

[O]ne issue that the panel raised [was] that we're not the average users. You know, the kind of – yeah, it's older – but kind of, you know, well-off, higher-class traveller, good health. So they're not like – they said yeah, sure we can talk about all these issues, but are we actually the best person to talk about it? And it's not really a lack of expertise, more like how do you gather these, you know, for example one of the big issues was what are the obstacles to travelling when you're older. The panel was like 'we don't really know!' You know, there's the charge here, but you know... And, but it's not something you can't address by bringing like all the people, because we're not going to bring a panel of users. We don't do that. And yeah to answer your question about the expertise, it's true they will bring a specific take on their life experience. But, then it gets really complicated. You need to provide the representative panel of users and we don't do that, we can't do that... that was a small bump. I mean, that wasn't—we had like maybe one hour discussion that was complicated at the panel meeting (*Staff 11*).

While continuing to be directed by Transport Canada's questions, the staff listened to the concerns of the panel and adjusted appropriately. A member-checking activity was performed by an external survey company that sent the key findings from the draft report to a group of older Canadians. Both the staff team and panel were satisfied with the member-checking activity that occurred for the report.

Non-Experts Entering Experts' Discursive Domains: Brokering Knowledge. The transport assessment process was comprised of two learning processes whereby the staff team and panel, positioned as non-experts, entered discursive worlds that were new to them. As noted in Chapter 2, an expert carries tacit knowledge developed through experience in and exposure to

a specific practice (Dear, 2004; Evans & Collins, 2008). Here, I discuss how the staff members learned from the panel's expertise and how the panel learned through the staff team's expertise.

Staff learning from the panel's expertise. CCA staff members were positioned as non-experts in relation to the expert panel. The panel members had the knowledge required to address Transport Canada's Charge to the Panel. Accessing the panel's diverse range of expertise required that the staff team learn about each of these areas of expertise. One panel member explained:

[O]ne of the things was very clear at the beginning – and this is not a criticism of the staff at CCA, they're wonderful, but... they're thrown into these panels and they aren't expert in any of it. And, so they went and read the literature and the first draft that we got was very ageist, actually. I discussed this openly with them and with the panel... and as the different drafts evolved, they became educated as we kept harping on the same points, you know that this language is ageist... [O]nce that got straight, things sort of went smoothly... the staff evolved with it. And I give them a lot of credit for that (*Panel 01*).

The panel believed that the staff team needed to learn various disciplinary approaches to framing issues. Given that the staff were doing the research and writing, the staff team's learning occurred through the panel's written and oral feedback on the ideas represented in panel briefing materials as they developed throughout the assessment process. The staff seemed to be aware of needing to learn the various disciplinary discourses used in transportation-related research. This learning process embedded in CALM required staff members to identify and recruit panel members according to their areas of disciplinary expertise.

As the project proceeded and the draft came together, one staff member expressed how they had learned as the panel re-directed the project's focus:

... the biggest issue that we came back to a lot was the first draft of the background on seniors. First off, we used the term "senior" all the time. We did present more related to disability than anything else and the physical changes associated with aging and a bit of

the cognitive, but we didn't have very much at all about the social changes. And we were told that "this is only one part of aging and you're not talking about the diversity of people in Canada. You're missing a lot of stuff related to aging and you're making it sound like a negative experience" And that, yeah, that definitely happened... And that changed the direction of the report... (*Staff 04*)

The same staff member continued with another example of the importance of the specific terminology used in the report:

"Older adults" we use, we don't use "senior". "Elderly" also is very bad. And it's because of the negative connotation. Elderly has definite negative connotations, people picture someone who is less capable. There's quite a bit of research around ageism that older adults or seniors are seen as warm but incompetent... The panel really wanted to avoid that, so they used the term older adults that we then defined as 65 and older... And to them it's that these are loaded words, these are words that people have an image in their mind. So words were very important and we do have a couple of panelists who were gerontologists. They were the ones who were really finic-y, even at this last stage, although I think we've got it down pretty well. And it's even a choice of words and it's also a choice of emphasis. So the reality is that, in this field, most of the research is around disability, which is fine and that's what we have to use (*Staff 04*).

Based on the panel member's area of expertise, they shared their understanding of discipline-specific issues associated with specific terms and ensured that staff members used the right phrases.

Another staff member reflected on the assessment team's learning process as the panel re-directed the project:

There's a lot of discussion about not using ageist language, which is why we specifically only used 'older'. And a lot of discussion about obstacles versus barriers and that sort of thing. [W]e specifically only used obstacles and not barriers. There was some discussion about barriers not being things you can overcome, but obstacles you can. And that's where we ended up. So things like that, the use of language was very specific in this report... and it's reflected in the report well now ... Because the panel specifically asked us to do that because they were very concerned with having the very specific terms and having the policy-makers or any readers of the report be very aware of what those terms meant in this context (*Staff 09*).

In having to learn disciplinary discourses, staff were indeed the subject-matter *non-experts*. By having to re-work existing content in response to the panel members' feedback, the staff were

able to learn how knowledge is presented in the academic disciplines drawn on in the transport report.

The panel learning through the staff's expertise. While the staff had to learn the disciplinary discourses associated with the knowledge accessed for the transport report, the panel also experienced their own learning process. The panel members entered a new-to-them discursive domain: the CCA and its CALM. Of these seven panel members interviewed from the transport panel, three had not been at all familiar with the CCA and four had been familiar with the CCA. Of these seven individuals, three had served on similar types of committees or commissions and had some knowledge of what the expert panel process would look like; however, none had previously served on a CCA panel. This meant that none of the panel members had had previous direct exposure to the CCA's assessment methodology, and each needed an introduction to it.

The panel members' learning processes were influenced by the dynamic amongst themselves and the CCA staff team's ability to introduce key elements of CALM throughout the panel process. Interdisciplinary collaboration, which plays a central role in the CCA's boundary work, occurred frequently among the academics on the transport panel: "I collaborate with social sciences because aging is not just a health issue, it's a social and environmental issue as well. So, in this area of research, we work with different perspectives all the time. So it was actually a natural thing to do for us" (*Panel 06*). A further advantage for the panel's group dynamic was that many panel members were familiar with each other:

It was a very good mix of people that I've worked with for years. And so, I already know that I get along with and have these conversations with. And then the new people around the table... and I think they were all open to hearing the opinions of others as well. So, I actually found our panel to be a nice mix of people who were, you know,

agreeable with each other, but also were able to debate with each other as well (*Panel 02*).

Panel members whose expertise came from the industry or government policy sectors integrated well with the largely academic panel. One panel member explained that “when I was exposed to [academic practices], I would often think in my own mind ‘wow that’s a great deal of time and effort to produce that kind of rigour’... where I wouldn’t necessarily have the luxury of time and effort to be able to do the same in my environment” (*Panel 03*). Here, collaboration created a mutual respect for the expertise of other panel members.

The staff team was very helpful in making relevant aspects of the CCA’s discursive activities explicit to panel members. Overall, the panel seemed to have appreciated the CCA staff’s approach to introducing them to the CCA’s assessment process. As one panel member summarized:

Given my lack of experience working with them in the past, for myself it was a useful and meaningful way to get information because it was sort of once the rubber hits the road, here’s the questions we’re going to be asking you. Here’s the context that we have, here’s the constraints that we have, so it you can operate within those constraints then feel free to share your knowledge as much as possible for that purpose (*Panel 03*).

The same panel member continued and indicated the effectiveness of the staff member’s approach to sharing aspects of CALM:

So, for me it was a way to apply their methodologies to the task at hand. ...had I simply read about them, for example, I may not have got the nuances that I needed to get randomly... And that trend continued throughout all the meetings, right. Always bringing it back to ‘here’s our mandate, here’s how we do this, this is our process’. A lot of times, we would go down rabbit holes that we would need the chair to come back and say ‘by the way folks, this is what our scope is. Please don’t pursue that avenue that is another venue or another authority. Our scope is this.’ And we’ll defer that, or that is something that needs further work but it won’t be part of our mandate (*Panel 03*).

The staff introduced relevant aspects of CALM to panel members as the work progressed. As one panel member put it, “[The panel] certainly had some briefings from staff about what their

normal approach is to expert panel work. So, you know, they also – as we went along – they also gave us guidance in terms of how the CCA goes about its work” (*Panel 07*). The staff seemed to use the panel briefing materials to introduce CALM to panel members and to the specific constraints embedded in the CCA’s culture. These constraints related to the activities carried out during the different stages of the assessment process, including CALM-prescribed aspects of an assessment, the purpose of an expert panel report, and the types of data considered relevant by the CCA.

By enculturating the panel members, the staff team was able to demonstrate to the panel what the CCA’s assessment process encompassed while moving the project towards their desired goal of responding to Transport Canada’s Charge to the Panel. In discussing the constraints surrounding the work of a CCA expert panel, the staff contributed to the positive dynamics that already existed among panel members. The CCA staff members demonstrated a certain expertise in bringing experts from different discursive domains into the boundary work (Guston, 2001) of recontextualizing expert-produced scientific knowledge for use by policy-makers.

Post-Panel Process: Publishing and Delivering *Older Canadians on the Move*

The Council of Canadian Academies’ (CCA) communications unit managed all activity in the post-panel process. While the post-panel process involved Processes Seven, Eight, and Nine of the Council Assessment Lifecycle Methodology (CALM), I focus specifically on Process Seven. Process Seven of CALM outlines the publication process and, in the case of the transport report, the activities involved in delivering it to Transport Canada.

Internally, the communications unit is considered “...the ones who coach the [assessment] team on coaching the panel on what to say. They are watching the messaging from

very early on. So they're a little bit gatekeepers in both of those senses, both in terms of time and in terms of messaging" (*Staff 02*). The communications staff "...take over once the report has been signed off by your panel final and then [the assessment team] do their very long... post pre-production checklist... And then they take it and they manage their contractors..." (*Staff 01*). Given that *Older Canadians on the Move* is the CCA's 41st published report, the CCA has a well-defined process leading up to a report's release date.

In this sense, the communications unit played an important role in mediating the CCA's boundary work – the black box of the assessment process – whereby they prepared and delivered the report, a boundary object. At first glance, these activities may not appear to be a part of the discursive recontextualization work carried out by the CCA; however, there are several activities carried out in the post-panel process that are in fact part of the CCA's boundary work. Here, I discuss both the publishing process and the CCA's delivery of *Older Canadians on the Move* to Transport Canada.

Publishing Process. Once the panel signs-off on the report, the CCA moves into the post-panel process of finalizing the report and publishing the document. This phase is marked by the CCA's transport staff team handing the draft over to the CCA's communications unit. For the transport report, the publishing process began during panel meeting four (PM4) when the communications unit became more actively involved in the project. As one staff commented,

From PM4 onwards, [the Communications Director] had skyped in or 'zoomed' in to our PM4 meeting to start discussing figures that they wanted to collaborate on. So we developed a "journey map"... it's not technically a journey map, we called it a journey map... so it ended up being...its figure 4.1, but we went through a lot of iterative processes and we worked with some designers on that. But we had, you know, we were talking to the panel about that and how we could use illustrative examples to kind of make the report more interesting. So we already had started the flow on working on that, which helped us get it out in a pretty timely manner as well (*Staff 04*).

This suggests that communications-related activities began while the panel was still active. The figures mentioned above were publically available on release day, 14 December 2017, and shared on the CCA's Twitter page to publicize the report, as discussed below.

When the report moved into the publication stage after panel meeting five (PM5), the staff all felt that the report was in really good shape in terms of being properly edited according to the CCA Style Guide. As discussed earlier, the Style Guide is a cultural tool developed by the communications unit to make for a smooth-as-possible transition from the assessment team to the communications unit. The Style Guide outlines conventions for the expert panel report, with specific sentence-level rules and standards for all CCA publications, including formatting the body of the text and the reference list.

The assessment team adhered closely to the Style Guide and "... everything went smoothly on this one.... It's one of those easy-peasy ones . . . [the draft] was really clean – we call it clean – very clean report to start working with" (*Staff 13*). This demonstrates that the staff team used the templates and followed CCA conventions in the panel briefing materials during the panel process. In addition to the standard substantive edit in PM3, discussed above, there was also a lot of team editing of materials throughout the panel process. As one staff member commented, "I think it really helps when you can go through like our editing process and there's not too many changes, and we had worked really collaboratively with Comms..." (*Staff 04*). This ensured a smooth transition when the assessment team "dropped the pen".

As mentioned above, the quality of the draft received by the communications unit was of great importance to these activities:

...every time you work with something, whether it's in editing or translating or the layout, whatever comes in, whatever the shape it's in will dictate how good you can

make it at the next step... if you have a very shitty report that comes in, you can only make it better by X amount. So it's going to be medium-decent, although the Council always make excellent report... If it comes in very polished, very clean, the next step is going to be very, very good, right? We always strive for excellence, so the better it comes in, the better it leaves. Of course, every step is going to be much better. Mind you at the end we always publish a very polished and clean report, so it just takes more step (*Staff 13*).

The communications unit performed several of the activities for the transport project, including proofing, layout and translation, and production, with a number of external contractors with specialties in different areas that the CCA does not have in-house.

Another activity was to send the finalized draft to an external copy-editor to do a thorough edit of the panel-approved draft. After the copy-editor sent the draft back to the communications unit, the unit began the “proofing” process. At this point, the staff assessment team “dropped the pen” on the draft. There were two steps in this process where the communications unit got help from the assessment team in a “pre-proofing meeting” and “proofing meeting”. While the communications unit manages the publication process, the assessment team’s “...job in production is to verify the accuracy of everything and to read through in detail and make sure there's not a missing comma” (*Staff 03*). During the pre-proofing meetings, “...we correct all we can so that a very, very polished version goes to lay-out” (*Staff 13*). As one staff explains, this involves:

...go[ing] through a couple of different iterations to make sure that the figures are on the pages that they're supposed to be and nothing is missing or cut-off or all of that kind of stuff. And that usually takes two sometimes three proofs to go through, like looking at the different proofs. And we do that in English, and of course we do that in French (*Staff 06*).

This involved the final fact-checking and sentence-level revisions of the report. For transport, the proofing meetings were limited because of the high quality of the report received by the communications unit from the assessment team.

Once the communications unit determined that the draft was “polished” to an acceptable level, they had a new draft ready for layout and translation. As one staff explained, the communications unit

[N]ever print[s] the English version before the French comes back because translators are gifted at finding errors in the English version because they have to go line-by-line, they find stuff... We almost count the translation as another proofing stage, right (laughs). Another proofing step. Yeah, we have really good translators that let us know when they find something (*Staff 13*).

Translation took more time than one might expect. The English version of the report was 140 pages, but “the industry standard is [to translate] 2000 words a day [and] there’s usually 400-450 words a page. [For example] if you have, let’s say the average, the average is 180 pages. Times 400. That’s 72,000 words. Divided by 2000, that gives you 36 business days. So that’s 6 divided by 5, that’s 7 weeks” (*Staff 13*).

As the text was being translated, a member of the communications unit “laid-out” the English draft of report. In the past, the CCA used external contractors to do graphic design for the layout of the report into a printable version that is no longer a Word document. The CCA stopped this practice primarily because the external contractor, given a brief “branding guide” detailing specific aspects of the CCA’s Style Guide, was not as familiar with the CCA’s conventions as members of the communications unit. As one staff explained, “[we] created the branding and type setting, so when [we] do the lay out [we] know [we] keep correcting as [we] go, right. So that’s very different, it saves us a ton of time” (*Staff 13*).

Once the English version, translated and laid out into a printable format that included the translator’s edits, the communications unit’s Senior Bilingual Publication Specialist did a comparative edit of the English and French versions of *Older Canadians on the Move*. This task

involved comparing the meaning of the original English text with the translated French text and ensuring that both official language delivered the same message. One staff explained that, “[the Senior Bilingual Publication Specialist] is a very important part of that process and I think a lot of people don't realize that [that staff member] reads the English reports several times and the French report several times. And [that staff member] literally reads simultaneously, so French on one side English on the other side and read the entire report...” (*Staff 06*). With the completion of these steps, the CCA then printed the expert panel report and prepared to deliver it to Transport Canada.

Delivering the Report. Once the publishing process was completed, the CCA prepared to deliver the report to Transport Canada. This involved producing the “launch materials” and a “sponsor brief”, and releasing the report to the public.

Launch materials. One activity that the research staff were involved in during the publishing process was to help prepare the launch materials, or different texts used on release day to advertise *Older Canadians on the Move*. Historically, the CCA used three documents – the Executive Summary, the News Release, and the Report in Focus – as the launch materials. Staff understand these texts to serve a specific purpose:

We write a lot of communications materials, so your News Releases and your media backgrounders. And we do the questions and answers documents for the panel that deals specifically with the media questions they could get and what they need to be prepared for. So we write a lot of the answers to those [products] (*Staff 06*).

The CCA used the Executive Summary and News Release for the public release of *Older Canadians on the Move*.

Executive summary. Research staff on the assessment team wrote the Executive Summary, which is similar to any other organizations’ Executive Summary in that it is written

for “people [who] don’t have time to read, so they will read the Executive Summary and, if they find something interesting, then they will do a search into the report” (*Staff 13*). This text summarizes the high-level findings of *Older Canadians on the Move* and is included in the final report as a 10-page overview and introduction to the 140-page report. Staff understand the Executive Summary as synthesizing the report narrative, a concept introduced above, the main themes and claims made in the report.

The Executive Summary also outlined the panel’s approach or the methodologies used to collect and analyse data. It provided an overview of the topic areas focused on in response to Transport Canada’s questions, including scientific and policy-related research and considerations. Finally, it outlined key findings and concluded with the “panel’s vision”, a final set of reflections on the implications of the report.

News Release. The CCA’s communications unit produced the News Release; the Web Specialist drafted the News Research and both the Director of Communications and Publications and the assessment team reviewed it. As one staff explained, “the News Release is made for journalism, right. And it’s made to be put out there in the world so that others can pick up the news and share it with others or use it... it’s a pre-determined format. Short document, to the point. Key findings. [It] puts us on the map in the news” (*Staff 13*). The standard structure of the roughly one and a half page text introduces the title and topic of the report, contextualizes the importance of the topic, provides a statement from the Chair of the panel on the report’s niche, a summary of the report’s content, and a message from the CCA President on the importance of the report. The News Release prepared for *Older Canadians on the Move* followed this format followed very closely.

Updated web-text. As mentioned above, once the assessment is completed and the report is ready for publication updates to the web-text follow. The final web-text, which is currently on the CCA's website for the report *Older Canadians on the Move*, does not have a web update, discussed earlier. It lists the title of the report as the web page title and details the project's context, the main question addressed in the report, the key findings, links to the full report, the Executive Summary, the News Release, infographics used in the report, names of members of the expert panel, and CCA contact information.

Sponsor brief. One of the most important activities that the CCA undertakes before releasing a report is referred to as the "sponsor brief", a face-to-face meeting with the client held in the CCA's offices in Ottawa one week before a CCA report is released. The sponsor brief is an important meeting because "...in the CCA process the sponsor is not involved during the panel meeting process. They don't know the proceedings, they don't see any drafts of the report. Their first view of the report is at our sponsor brief" (*Staff 09*).

During the sponsor brief, members of the panel and the staff team summarize high-level findings, key messages, conclusions, main takeaways, implications for policy. At the meeting, Transport Canada received "embargoed copies" of *Older Canadians on the Move*, including the Executive Summary and News Release. This was the first time Transport Canada had seen any component of the report. While the Project Director had maintained contact with the client throughout the assessment process by providing updates on the project, the CCA ensured that there was no way for Transport Canada to influence the panel's thinking throughout the transport project. In this way, the CCA maintained the transport panel's independence.

The goal of this meeting was for the CCA to give Transport Canada a chance to learn directly from the Chair and members of the panel what their response to the original Charge to the Panel had been before being publically available. In this way, Transport Canada learned about specific points in the report relevant to the Charge to the Panel on adapting the Canadian transportation system to meet the needs of an aging population. Transport Canada also had a chance to prepare any public statements they may have desired to make upon the release of the CCA's report.

One staff member explained what is involved in briefing the client:

Towards the end of an assessment... the PD...and PC will contact the sponsor and let them know that we're close to the end, we'd like to... present it to you before it's publically released so that you're able to come up with your release statement... So that once the report is released, they can have a reaction to it on-hand. So a week before the assessment is to be released, we meet with the sponsor in person... And representatives that the sponsor has identified that should be in attendance... We'll get them in a room together, we'll present the report findings... They'll have a copy of the embargoed report with—as they leave to fully review. And that's it... Then the report is released and the sponsor has the opportunity to follow-up as needed (*Staff 08*).

The same staff member explained the role of the Chair and panel members in the sponsor briefing:

Usually the chair presents to them and the panel members in attendance too will supplement anything that the chair can't answer or present. There will be a period of questions when the sponsors can sort of go into a little bit more detail of what we found, what they were hoping for... (*Staff 08*).

One panel member who participated in the sponsor brief meeting reflected on their experience:

[T]he final work was the document being presented to Transport [Canada] and the [Canadian Transportation] Agency... we helped with the presentation... the idea is that before the release, it's a week before they release, the practice is that the Chair and the staff meet with the sponsoring department, so in this case Transport. And they included the CTA [Canadian Transportation Agency] staff and it's a presentation to the departments that requested the expert panel... So I was invited to be on the phone and [The Chair] was there in person with [the Project Director] and some of the staff... And

it was kind of a too-ing and fro-ing... it was an opportunity for them [Transport Canada] to ask us questions kind of off the top that weren't in the report, but to get some sense of things more informally. And it was, I think, quite useful (*Panel 07*).

Release day. The CCA published its 41st report, *Older Canadians on the Move*, on 14 December 2017, four months after the final panel meeting had occurred on 17-18 August 2017. Staff felt that they "...had a pretty tight timeline to get the publication out before Christmas [but it was only possible because] we went in with a really good product" (*Staff 04*). The staff team met the Christmas deadline and the transport report was publically available as a printed and electronic book in both official languages, as stipulated by the CCA's federal funding agreement. The work involved in taking the report that the panel had "signed off" on and turning it from panel briefing materials to the final book published by the CCA remains to be seen.

As with every CCA expert panel report, the Web Specialist arrived at the office early on the morning of 14 December 2017 to post *Older Canadians on the Move* as an English and French PDF on the transport assessment webpage (along with the final web-text, the Executive Summary, the News Release, and two figures developed by the research staff and communications unit). The CCA posted the News Release on its homepage and used social media throughout the day to raise awareness of the transport report. They also email a notification to everyone on their mailing list and send the News Release to Global News Wire.

One CCA staff member explained what Transport Canada received with the release of *Older Canadians on the Move*:

What do they get? They get answers. They asked this question. It's important to them. They obviously know that there's a problem coming up as a result of an aging demographic and this gives them a reference for what they can do about it (*Staff 14*).

Put another way, the overarching rhetorical function of *Older Canadians on the Move* was to answer the questions that the CCA had originally received from Transport Canada. CCA staff

understand the report to be a response to the sponsoring governmental department's questions. This suggests that the uptake of these questions implies a "serve and response" rhetorical situation, as discussed earlier.

Transport Canada was the primary audience for the final report. With respect to the audience beyond Transport Canada, the assessment team's distribution plan, which was created with input from the CCA's Board, Scientific Advisory Committee, panel members, and from organizations mentioned in the report, provides insight into who else received the report after it was published. Those who received the report or a notification of the report's release are the secondary audiences. One staff explained how the distribution list was put together and where the CCA sent the report:

...we generally start with our Board and Scientific Advisory Committee, all of the panel members, all of the peer-reviewers, and our panel members identify their employer if they choose to have their employer recognize their work on the panel, we send a copy of the report to their identified employer. We also send copies of the report to [Industry, Science and Economic Development Canada] and then if there's the sponsor of the report, in this case it was Transport Canada, we identify all of the individuals at Transport Canada who were involved with this report and we also send the report to them. Then we also send the report to provincial Ministers that are applicable. In this case, we sent the report to Transportation Ministers, Infrastructure, Seniors, or if there was anything related to aging... We also send it to the House of Commons and Senate committees that are relevant... And then we also send to individuals or organizations that are identified in the report... in this report, we had things like Age Well and... the Canadian Longitudinal Study on Aging. And organizations that are mentioned, we send a report to them. And... research labs and organizations that focus on either transportation or aging or both... (*Staff 09*)

There appears to have been many audiences for the report, such as provincial policy-makers, federal government committees, individual researchers, research organizations, non-governmental organizations, and anyone else who requested a hard copy (myself included). Interestingly, they also send the report to panel members' employers.

The CCA's communications unit prepared a "release analysis" after *Older Canadians on the Move* was distributed. The release analysis is produced "...usually a month or so after public release... about kind of how widely the report was distributed and if there was any kind of pick-up from media and general things" (*Staff 10*). In the release analysis, the CCA communications unit found that reception of the final report was positive among its secondary audiences. Overall, there were 150 hardcopies of the report mailed out without charge. Increased traffic on the website followed the release analysis (286 downloads between 14 December 2017 and 19 January 2018), and a reasonable number of social media engagement with links posted to Facebook and Twitter. As well, the News Release was posted to 60 news sites, with 36% (n=2028) of people who received the email notification opening the link. This is a decent number of people having opened the emails, as the industry standard is that roughly 20% of people are expected to open such a link.

Report uptake. Finally, the CCA is concerned with tracking how the government and other audiences used the transport report, something referred to as report "impact". Freadman's (1994) concept of uptake conceptualizes this. Briefly, one staff summarized this activity:

We do have certainly impact from outside of government generally. Actually, in government we've had requests post-publication from people we've mailed the report to asking to use our figures, to use the data from the report. They're going to cite it in their research. That kind of thing. So that's kind of a more direct way to certainly see the impact of the report. And some of those are at provincial government level or at a research, academic level... (*Staff 09*)

The same staff member discussed some of the issues that the CCA faces with tracking a report's impact:

... often it's kind of impossible to track [whether a] report get[s] sent to someone's office who then subsequently wrote some section some section of some policy... It's kind of a hard line to follow... So we don't really have the data to back that up... we get

some of the policy things if, yeah, they want to cite our figures or cite things directly from us because then we know they're using it. And we do – we have gotten that from transport and we did get that from other reports. But, yeah, outside of that, it's really hard to tell. Especially if it's several years down the line when we're not doing very diligent tracking because we've moved on to other things. It's hard to tell (*Staff 09*).

Tracking the impact of an expert panel report, or the uptake, has been an ongoing challenge for the CCA. Save for the fact that the CCA's 2006 *Science and Technology* report had been explicitly cited in former Prime Minister Stephen Harper's 2007 Speech from the Throne, it is often difficult for the CCA to know precisely which government policies are formed as a direct result of a report. For *Older Canadians on the Move*, the CCA planned to send a final follow-up survey one year after the release of the final report to learn more about how Transport Canada used it for policy activities.

Chapter Summary and Conclusions

Chapter 6 has unpacked the black box of the Council of Canadian Academies' (CCA) assessment process through which expert-produced scientific knowledge is transformed and re-purposed for use by policy-makers. The assessment process, a form of boundary work, led to the creation of the boundary object of an expert panel report provided to the CCA's client, Transport Canada. In describing the black box of the CCA's boundary work, I have described three phases of a CCA assessment and the activities carried out by different social actors throughout each stage. I have also identified several genre sets, written at different points in the assessment process that are part of the CCA's boundary work. During the panel process, these genre sets helped the staff team and the panel members develop the claims featured in *Older Canadians on the Move*. I have also demonstrated the important role played by the CCA staff team as knowledge brokers throughout the assessment. In doing so, I have suggested that the CCA staff team, working with the expert panel, played an important intermediary role in moving the expert

panel towards agreement on the final report, as guided by the CCA's Council Assessment Lifecycle Methodology (CALM).

Conclusions. In this chapter, I have discussed the roles and actions of different social actors – the CCA's staff team, the expert panel, and the CCA communications unit. These actors collaborated in transforming and re-purposing – that is, recontextualizing (Linell, 1998) – expert-produced scientific knowledge for use by government policy-makers. Through my textography (Swales, 1998), I have paid particular attention to the types of writing done during the CCA's boundary work, and to the mediating roles that the staff team played in this collaborative discursive activity. Several elements shaping the collaborative discursive activity of producing *Older Canadians on the Move* were unique to the CCA's boundary work. A CCA panel meeting can be understood as a boundary encounter (Wegner, 1998), where an intermediary staff team brokers knowledge from several disciplinary domains. While brokering knowledge, the staff team sought panel agreement on the claims made in the final report.

The assessment process as a black box of the CCA's boundary work. The black box of the CCA's assessment process remains obscured in the CCA's public display of its expert panel reports. In unpacking the roles and social actions that the many social actors were involved in in producing the transport report between summer 2016 and Christmas 2017, I have found the black box of the CCA's assessment process to reflect the CCA's culture. The culture, discussed earlier, includes the CCA's overarching goal to provide evidence-based advice to its clients using its specific understanding of science and the nature of expertise. I found that these cultural constructs played major roles in the assessment activity.

After the staff team had taken up Transport Canada's original questions, the team simultaneously recontextualized these questions through the CCA's cultural constructs of science, evidence, and expertise to frame the selection of panel members. This meant that, early on, staff members had to start identifying potential types of expertise to use in producing the final report. This involved, first, identifying the relevant disciplinary expertise needed to address the original questions, and then finding panel members possessing that expertise.

When the CCA sent its final report to Transport Canada, the report implicitly reflected a number of cultural assumptions that characterize the CCA. For example, the CCA's broad definition of science, which includes both the natural and social sciences, determines the type of question that the CCA can address. Questions that are considered "good" must have an existing base of expert-produced science and other types of credible evidence. For the transport project, the questions related to existing expert science, predominantly in the social science disciplines. These questions guided the staff team in determining the areas of expertise needed to answer Transport Canada's questions. The panel members were then chosen as representatives of their particular area of expertise and what they would be able to contribute to the project. This in turn aided the CCA's claim to have produced a credible and authoritative report in *Older Canadians on the Move*. As individuals with the appropriate expertise, the panel identified the specific sources of evidence required, drawing on pre-existing categories of evidence identified by the staff team.

The boundary work performed through the assessment process required both the staff team and the panel members to enter the other's discursive world. Where the staff had to learn from the panel about specific areas of expertise related to the transport project, the panel simultaneously had to learn about the CCA's Council Assessment Lifecycle Methodology

(CALM). To be effective in their boundary work, the staff team needed to earn the panel's trust. In large measure, the staff members earned the panel's trust by demonstrating competence in their ability to learn the different disciplinary discourses relevant to the project. Another way that the staff team gained the panel's trust was by demonstrating their expertise in brokering scientific knowledge in a manner through which the recontextualized knowledge was useable by government policy-makers.

Activities and texts produced. The CCA engaged in a number of CALM-prescribed activities in producing *Older Canadians on the Move*. These activities included: accepting the project; recruiting a Chair and panel; interpreting the sponsor's questions; preparing a preliminary research plan; updating that research plan in collaboration with the panel; drafting materials for the panel to review and develop a response to the sponsor's questions; getting and incorporating panel feedback on those materials; organizing and carrying-out the peer-review of the report; having the panel sign-off on the content of the report and "dropping the pen"; preparing the report for publication via further editing, proofing, laying-out, translating, and verifying the report; de-briefing the sponsor; releasing the report publically via the distribution plan; and managing all external communications (notably through the web-text and social media).

Panel meetings were a particularly important ongoing activity. As boundary encounters, the panel meetings are a site where cross-disciplinary collaboration occurred (Nicolini, Mengis, & Swan, 2012; Sunderberg, 2007) in that the panel was composed of individuals with expertise from different sectors and academic disciplines. This cross-disciplinary collaboration led to the creation of the boundary object that is the final report. The staff used the panel's oral feedback recorded during the panel meetings to revise drafts of the final report. As discussed above, the

panel's cross-disciplinary collaboration enabled the CCA assessment team to produce a credible and authoritative report.

Writing was another crucial activity that occurred throughout the entire assessment process leading to the creation of *Older Canadians on the Move*. I found that several texts appear to be closely associated with the recontextualization of scientific knowledge as performed by the CCA. These texts include the Proposal and Charge to the Panel, panel and Chair compositional guidelines, panel briefing materials, panel meeting summaries, compositional guidelines for peer-reviewers, web-text, News Release, Executive Summary, and the final report (English and French). The intermediary genres (Tachino, 2012) produced during the panel meeting process, such as the compositional guidelines, the panel briefing materials, and the panel meeting summaries, were particularly important to the recontextualization activities performed during the transport assessment.

While the staff team played an intermediary role during panel meetings, they also took on a more active role outside of panel meetings. As mentioned above, the panel understood the staff as doing the “grunt work” (*Panel 06*) throughout the assessment process. Using the panel briefing materials, the staff team pulled data and literature, analyzed it, and synthesized it into a draft before each panel meeting. Through the multiple iterations of the intermediary genres mentioned above, these texts served to move the staff closer to their goal of establishing the agreement of panel members on content presented in *Older Canadians on the Move*.

In Chapter 7, I continue my account of the CCA's boundary work of recontextualizing science by describing the rhetorical dimensions of the boundary object produced through the assessment process, the final report.

Chapter 7: Findings—Rhetorically Recontextualizing Scientific Knowledge in a Boundary Object

Chapter 6 described the Council of Canadian Academies' (CCA) boundary work by identifying the roles and actions of the social actors involved in the collaborative discursive activities carried out in producing the boundary object, *Older Canadians on the Move*. In doing so, the chapter unpacked the black box (Latour, 1987) of the CCA's assessment process and focused on the types of writing the staff assessment team and panel members used to produce the transport report. I accounted for the rhetorical functions that the CCA ascribes to the various intermediary genres (Tachino, 2012) that were used to perform this boundary work.

In Chapter 7, I further address the third sub-question guiding this study: 3) what texts are produced in this discursive activity of recontextualization and what rhetorical functions are performed by these texts? In taking up this question, I report on findings from my rhetorical analysis of *Older Canadians on the Move*, the boundary object that was created through the CCA's assessment process. Looking at the boundary object, I describe the ways in which the panel and CCA staff team recontextualized science and other sources of evidence.

The discussion proceeds as follows: I first describe the rhetorical situation to which the panel and staff members responded in producing *Older Canadians on the Move*, as this situation was situated within the culture of the CCA. I then focus on three aspects of this culture, the cultural constructs of "science", "evidence", and "expertise". I also explore the traces of these constructs as they appear in the report itself. Finally, I discuss the rhetorical strategies that the panel and staff used in recontextualizing expert-produced scientific knowledge and other sources

of evidence into another form of knowledge accessible and useful to government policy-makers in the report.

The Rhetorical Situation of *Older Canadians on the Move*

As Bitzer (1968) notes, the rhetorical function of any language use is determined by the situation in which a social actor uses language. In the case of the transport assessment, Transport Canada received *Older Canadians on the Move* as an “independent, authoritative, and evidence-based expert assessment” that policy-makers working in that department could use to inform their decision-making. In Chapter 6, we learned of the importance of the questions that the panel took up as the “Charge to the Panel”. The overarching question that served as the starting point for the transport report was “How can technology and innovation help the Canadian transportation system (under the legislative authority of Parliament) adapt to the needs of an aging population?” (CCA, 2017, 2). As sub-questions, the transport report addresses four main themes: (1) the impact of an aging demographic on economics, social role, and physical design of the transportation system (including current research and knowledge gaps related to safety, security, multimodal integration, services standards, and equipment design); (2) the international trends and best practices for accommodating an aging population; (3) the practical examples or case studies of new technologies and innovations used to accommodate the travel needs of older adults either domestically or internationally; and (4) the ways to incorporate an integrated or “door-through-door” view on how to adapt the national transportation system for older adults. The uptake and recontextualization of Transport Canada’s questions into the CCA’s work required the CCA staff team to re-purpose the questions into functional terms related to the culture of the CCA.

The Final Report and the Panel’s Vision. To paraphrase one staff member’s comment, Transport Canada got answers to their questions related to an aging demographic to serve as a reference for their decision-making. The six chapters of the final report considered as a whole provided these answers. The introduction presents the topic and the methodology used, and outlines the report’s structure. The second chapter surveys the policy-oriented literature required to contextualize the national transportation system, and considerations to make when adapting it to meet the needs of older adults. The third chapter discusses the known needs of older adults while travelling. The fourth chapter details obstacles faced by older adults in a door-through-door journey and the opportunities these obstacles present to improve travel experiences for older adults. The fifth chapter that explains ways to adapt the transportation system through policy-oriented initiatives and describes the opportunities identified in chapter four. The conclusion summarizes the panel’s “vision” for an inclusive transportation system. As with other CCA expert panel reports, *Older Canadians on the Move* was written using an academic register.

Older Canadians on the Move reflects “...engineering and transportation research, demographic data related to older adults in Canada, and sources related to physical, sensory, cognitive, and social changes associated with aging [and] social science research on the preferences and abilities of older adults with respect to technology and travel” (CCA, 2017, 8). Like all CCA expert panel reports, the CCA staff members put this report through a “formal peer-review process...to assure the quality and objectivity of the report” (CCA, 2017, 9). Unlike any previous report, however, the CCA also undertook a member-checking exercise using an online survey and data obtained through one of the panel members. The interdisciplinary character of the report reflects the CCA’s broad definition of science, with science defined as interdisciplinary knowledge produced in the social, behavioural, and health sciences as well as

engineering and, in some cases, the humanities. In this sense, it is the CCA's broad definition of science that enabled the organization to produce the report.

Older Canadians on the Move presents the panel's "vision" for an inclusive transportation system that "supports social equity by providing equal access to transportation while creating economic benefits as more people are given the opportunity to travel and enhance their well-being" (CCA, 2017, 1). One suggestion made by the panel to Transport Canada is to make the transportation system inclusive by adopting a "door-through-door" perspective on transit to provide a system that "allow[s] people to plan trips from their home, move comfortably through their doors, through transport venues such as terminals and stations, and finally through the door of their chosen destination" (CCA, 2017, 3).

The report focuses on the federal transportation system, or all modes of transportation that fall under federal authority, including air travel, railway use, intercity bus, and interprovincial (or international) ferries. This means that many provincial, territorial, and municipal modes of transportation were not considered; however, Transport Canada agreed to consider them as parts of the "door-through-door" approach championed by the panel.

Another central concept in the report is the term "older adults". This means that terms like "seniors" were not used because of the negative connotations associated with older adults living with disabilities or those facing difficulties related to their capability to move. In this view, people living with disabilities are not necessarily older adults and the term "senior" is seen as an

“ageist” term, as described in Chapter 6.⁹ Taken this way, older adults have “a wide range of travel needs and preferences relating to their respective physical, sensory, and cognitive abilities, their social contexts, as well as their income and geographical location. Older adults include those who are aging without the onset of any disability, those who are aging into disability, and those who are aging with disability” (CCA, 2017, 5).

The transport report claims that it adds to existing literature by focusing more broadly on the “larger social and cultural issues facing older adults, or other types of travel facilitators, such as respect for passengers, encouraging independence and social participation, and addressing preferences or fears” (CCA, 2017, 6). Additionally, the panel claims that while most reports on similar topics have given a “good deal” of attention to personal vehicle travel, in doing so “creates a knowledge gap with respect to the use of other modes of transportation by adults” (CCA, 2017, 6) such as intercity buses, planes, and trains. The panel also suggests that technology is but one means of improving the transportation system and alternatively proposes an “inclusive system”. Finally, the report addresses the “Canadian context” to account for “the country’s unique geography, vast size, low population density, and jurisdictional division of transportation control” (CCA, 2017, 7).

⁹ Interestingly, the broader research questions in the Charge to the Panel seem to avoid the term “seniors”. Yet, the term appears three times in the sub-questions that were agreed upon at the first panel meeting. According to panel members, this was around the same time that “older adults” was established as the preferred term when referring to the general population of older Canadians.

CCA Cultural Constructs Appearing in the Report

This section explores the cultural constructs of science, evidence, and expertise as they appear in the final report – a boundary object featuring the panel and staff’s recontextualized science and other forms of evidence. As discussed above, staff members described a “traditional” model of evidence used in a CCA report that includes original knowledge produced by social actors working external to the CCA. The knowledge came from scientific researchers who published in academic journals, organizations that produced grey literature, and data tables produced by government departments. The authors of the transport report also drew on two other sources of evidence: media articles covering obstacles to transportation, and the Panel’s expertise “where findings do not have a cited reference” (CCA, 2017, 8). The assessment team and the panel of experts, who worked as knowledge brokers (Wegner, 1998) to re-conceptualize the “evidence” through the CCA’s boundary work, accessed this knowledge.

The section proceeds in the following manner: first, I focus on the use of science and show examples of how scientific knowledge was recontextualized for Transport Canada; next, I describe the other types of evidence drawn on in the report as a boundary object, namely grey literature, data sources, and media reports; and, I discuss the ways in which the cultural construct of expertise appears in the report with references to “the Panel” as a rhetorical device.

Science in *Older Canadians on the Move*. The expert-produced scientific knowledge found in the transport report generally came from published academic sources. These were primarily journal articles from peer-reviewed journals, but there were also academic books and academic conference papers. These academic sources are indicative of what counts as scientific knowledge in the transport report.

For example, articles cited were from the following types of academic disciplines:

- The health-sciences and medicine (*Maturitas, Journal of Clinical Interventions in Aging, Canadian Geriatrics Journal, Gait & Posture, The Journals of Gerontology: Series A, The Gerontologist, Journal of the American Geriatrics Society, HSOA Journal of Gerontology & Geriatric Medicine, and Journal of Integrated Care*).
- The natural sciences (*Sensors*).
- The social sciences (*Social Indicators Research, Journal of Social Issues, Ageing & Society, Journal of Aging Studies, Age and Ageing, Journal of Risk Research, Social Psychology Quarterly, and Disability and Rehabilitation*).
- Business and management (*Journal of Business Research, Tourism Management, Current Issues in Tourism, Journal of Direct, Data and Digital Marketing Practice, Research in Transportation Business & Management, and Journal of Travel Research*).
- Psychology (*Nordic Psychology, Trends in Cognitive Science, NeuroImage, Psychology of Aging, and International Journal of Geriatric Psychiatry*).
- Engineering-related transportation research (*Transportation Journal, Traffic Injury Prevention, IEEE Vehicular Technology Magazine, and Transportation Research Record: Journal of the Transportation Research Board*).
- Technology (*Information Technology & Tourism, Behaviour & Information Technology, Journal of the American Medical Informatics Association, and JR East Technical Review*).
- Education (*eLearning Papers and Educational Gerontology*).
- Multi-disciplinary journals, including humanities-related publications (*Quality in Ageing and Older Adults, Canadian Journal on Aging, Intellectual and Developmental Disabilities, and Environment and Behavior*).

The CCA's broad definition of science connected this otherwise extremely diverse body of literature. The CCA's definition of science includes disciplines in the social, natural, behavioural, and health sciences as well as engineering and, in some cases, the humanities. For the transport report, this diverse range of academic disciplines suggests that in this case scientific knowledge employed consisted predominantly of social science and health science bodies of knowledge. It is interesting to note that the authors of *Older Canadians on the move* referred to only one natural science journal.

Examples of recontextualized science. Having explained what counted as science in *Older Canadians on the Move*, I will now outline examples of how the report recontextualized the multi-disciplinary science cited within it. The scientific knowledge used in the report and taken from academic publications was re-interpreted – that is, transformed and re-purposed – to fit the panel’s response to Transport Canada’s questions.

Below, I provide three excerpts from the report that illustrate how scientific knowledge had been recontextualized through the staff assessment team’s boundary work:

Interviews with adults aged 65 or older in New Zealand who gave up driving found that some were relieved to do so (Davey, 2007). Nevertheless, studies have found that, for many older adults, losing or voluntarily giving up their licence is a stressful and major event that greatly changes their lives. It may also lead to feelings of isolation and a sense of being a burden on those around them (Adler & Rottunda, 2006; Davey, 2007). A meta-analysis that included studies of driver cessation in older adults (with subjects ranging from 55 and older to 70 and older) from the United States, Australia, and Kuwait found that giving up driving almost doubles the risk of self-reported depressive symptoms (Chihuri *et al.*, 2016). The increase of depressive symptoms is found even when accounting for health-related and sociodemographic factors (Marottloi *et al.*, 1997; Windsor *et al.*, 2007) (CCA, 2017, 37-38).

An inclusive transportation system that leads to a greater number of travellers has a range of social benefits that extend far beyond the individual. These include the promotion of social equity and social inclusion for everyone in Canada including, but not limited to, older adults. An increase in the number of older travellers may also lead to high-quality intergenerational interactions, something that has been demonstrated to reduce ageist attitudes (Caspi, 1984; Schwartz & Simmons, 2001) (CCA, 2017, 43).

Older travellers who drive to terminals/stations can be supported by a number of innovations, such as simple vehicle modifications, assistive technologies, or autonomous vehicles (i.e., self-guiding automobiles). Vehicle modifications that enable prolonged driving by older adults and enhance the safety and usability of cars include easy-lock belts or steering wheel covers to improve grip (Dickerson *et al.*, 2007). New innovations, such as assistive technologies that sense the environment around the vehicle (Abraham *et al.*, 2016), and learning-capable systems that modify vehicle behaviour based on past experience (Dimitrakopoulos & Demestichas, 2010), could support safe, independent vehicle use among older adults. As of 2017, autonomous vehicles are not currently available for purchase, but may allow for continued independent vehicle ownership by older adults in the future (CCA, 2017, 61).

The recontextualized scientific knowledge informed high-level, topic-specific claims based on scientific research. Later in the chapter, I discuss specific rhetorical strategies used to present the recontextualized science in the report.

Other Sources of Evidence used in the Transport Report. The evidence presented in the report reflects the prevailing notion of what constitutes credible evidence within the CCA. The CCA has established underlying assumptions of what evidence counts in providing a response to government-initiated questions. In categorizing sources of evidence according to specific criteria, the transport report provided Transport Canada with a non-systematic review of different bodies of knowledge that are considered within the CCA to be relevant to the decision making activities of that department. I provide examples of how these other sources of evidence were recontextualized in the transport project below.

As explained in a footnote in *Older Canadians on the Move*, “Grey literature refers to various types of documents produced by government, academia, industry, and other organizations that are not published commercially or formally” (CCA, 2017, 8). For the transport report, grey literature came from external sources, which included reports produced by federal, provincial, and municipal governments and agencies, non-governmental organizations, and private companies.¹⁰ It also consisted of websites from various organizations working in the transportation industry, such as transportation service providers like Greyhound, and private technology companies like Apple. This diverse range of grey literature incorporated many types of knowledge, including technical, social-scientific, and policy-related knowledge.

¹⁰ A CCA report is an example of grey literature.

External data sources came from external organizations such as Statistics Canada, Transport Canada, the Bank of Canada, and the Royal Bank of Canada and included publically available charts. Though not included in the reference list, there were also a number of references to data accessed through a private research agreement between the CCA and the Canadian Longitudinal Study on Aging (CSLA). External sources of evidence also consisted of technical, social-scientific, and policy-related knowledge.

Finally, media sources included news articles from a variety of media outlets. These ranged from local newspapers (e.g., *The Brandon Sun* and *The Edmonton Journal*) and national media organizations (e.g., *The Globe and Mail*, *Maclean's*, and the Canadian Broadcasting Corporation).

I created Figure 3 to illustrate the variety of references used in each chapter of the transport report (see Appendix F for a full list of the citations by chapter). I found two errors in

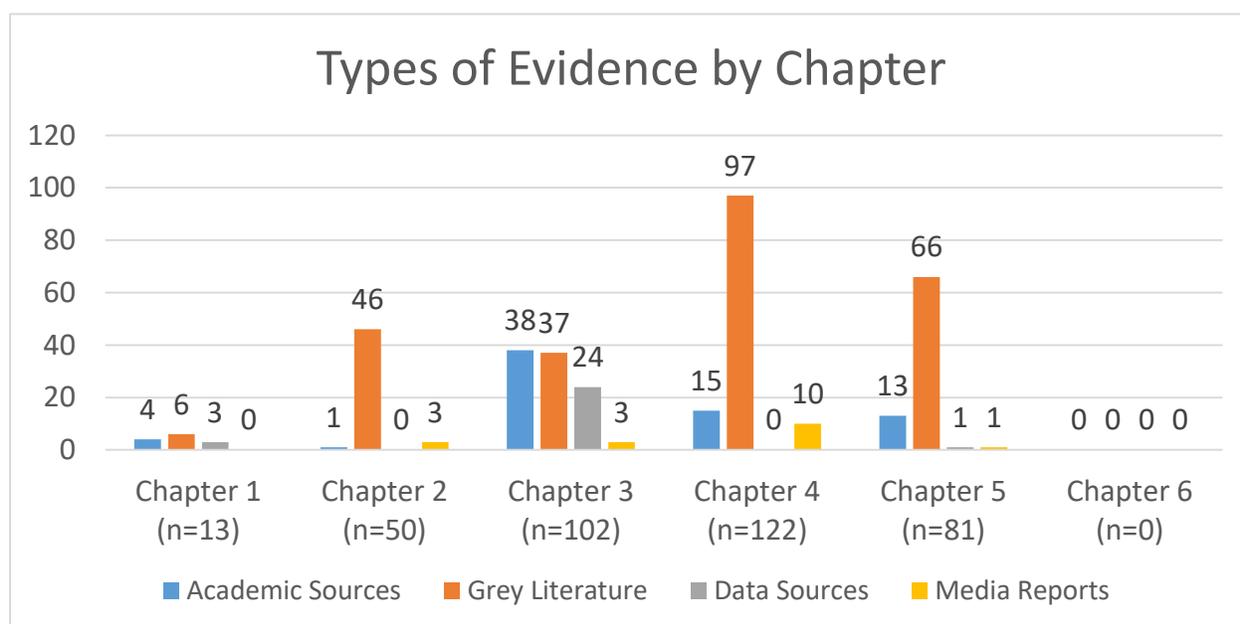


Figure 3: A tally of the types of sources of evidence cited in Older Canadians on the Move by chapter, including academic sources, grey literature, data sources, and media reports.

the report's reference list: (1) an expert testimony from the Canadian Transportation Agency, cited in the text, did not appear in the reference list, and (2) the source of CSLA data, presented in tables in the report, was not publically available as of July 2019.

As depicted in Figure 4, there were a number of academic journals cited throughout the report, although grey literature appears to have been the main source of evidence used in *Older Canadians on the Move*. Save for Chapter 3 of the report, where the use of academic and grey literature was comparatively close, grey literature was the dominant source of evidence used in *Older Canadians on the Move*. This was somewhat surprising given the CCA's cultural preference for using scientific knowledge. The reliance on grey literature may have been related to the gaps in scientific knowledge and research related to the topics of interest that came in Transport Canada's Charge to the Panel. Additionally, many of the external data sources came from Statistics Canada surveys. These surveys, typically based on scientific approaches to data collection, often presented results using descriptive statistics.

Expertise and "The Panel". Finally, the CCA's cultural construct of "expertise" also appears in *Older Canadians on the Move*. In the report, the term "the Panel" refers to the collective expertise of the panel members and serves three rhetorical purposes: 1) to indicate the collective voice of the author of the transport report; 2) to make assertions regarding methodological decisions made in producing the report; and 3) to make claims based on the recognized collective expertise of the panel.

In parts of the report, the term "the Panel" refers to a collective authorial voice to help the reader navigate through the report. For example,

"In the second part, **the Panel examines** how Canada can achieve a transportation system that minimizes obstacles for older travellers... **The Panel also describes** three

forward-thinking pathways to support adapting the Canadian transportation system to better meet the needs of an aging population (Chapter 5)...” (CCA, 2017, 10, bold text not in original).

“At the end of this [Chapter 4], **the Panel presents** a table summarizing the obstacles discussed, along with possible opportunities to minimize them, and the stakeholder(s) responsible for implementing these opportunities (Table 4.1)” (CCA, 2017, 50, bold text not in original).

“The Panel” also justified methodological decisions made in producing the report. Some examples of this include:

“While most of the available literature pertains to air travel, **the Panel sought** to include obstacles related to train and bus travel as well. Many of the obstacles, and opportunities for minimizing their impact, are drawn from literature on disability; it is important to emphasize that this literature does not encompass all the needs of all older travellers” (CCA, 2017, 50, bold text not in original).

“Canadian data exist on both accessibility and obstacles related to travel for individuals with disabilities, but there is no tracking of complaints or issues frequently encountered by older travellers using the Canadian transportation system. **What research the Panel could find** focuses on older travellers who use air travel (e.g., Mein *et al.*, 2014)... The lack of data related to modes of transportation other than air presented **a challenge for the Panel**, which was charged with studying all federally mandated modes” (CCA, 2017, 80, bold text not in original).

Finally, “the Panel”, as a collective voice, was used as a warrant for making various expert assertions. This was a particularly delicate situation as the CCA is careful to ensure that all expert panel reports avoid providing recommendations, as explained in the CCA’s Style Guide. In the case of *Older Canadians on the Move*, some phrases used to indicate an assertion included: “The panel notes”, “the panel considered”, “the panel identified”, “the panel believes”, “the panel acknowledges”, and “in the view of the panel”. Below are four excerpts demonstrating this:

Interviews with older adults (60+) in Finland have further demonstrated that older travellers are a heterogeneous group with different preferences and levels of comfort when it comes to using technology as part of the travel process; some are “very avid user[s] of technology and [very] independent traveller[s]” [p. 34] (Pesonen *et al.*, 2015). **The Panel notes**, however, that even older adults who consider themselves IT literate

may want the reassurance of information from supporting staff (CCA, 2017, 35, bold text not in original).

Travel companies are well positioned to organize trips for older adults wanting to travel individually, with family members, or within a group of peers. Importantly, **in the view of the Panel**, travel consultants can be most effective if they are aware of the needs and preferences of older travellers and avoid ageist attitudes (CCA, 2017, 55, bold text not in original).

In 2016, [the federal government] announced \$27.6 million in funding for 13 regional airports under the Airports Capital Assistance Program (CAC, 2016) and \$867.3 million in Budget 2017 to support the operations and capital requirements of Via Rail Canada (GC, 2017c)... One of the CIB's goals is building 'communities that are socially inclusive' (GC, 2017b). As such, **the Panel believes** there is an opportunity for the federal government to tie inclusivity guidelines to CIB-supported projects, thereby developing infrastructure (including transportation infrastructure projects) that supports older travellers (CCA, 2017, 102, bold text not in original).

There are obstacles present at every stage of a door-through-door journey in Canada that make it challenging for older adults to travel... **The Panel identified** national and international examples that minimize these obstacles and support the vision for an inclusive transportation system... **The Panel acknowledges** that there are challenges with the inclusive approach, including design cost, moving population targets (as characteristics of groups change over time), and integration of new innovations (CCA, 2017, 108, bold text not in original).

Rhetorical Strategies Used in Recontextualizing Science and Other Evidence

Having identified different cultural constructs – namely science, evidence, and expertise – that appear in the final boundary object of the transport report, I now describe the strategies used to recontextualize knowledge taken from scientific articles and other sources of evidence.

Twelve Rhetorical Strategies. There are at least twelve rhetorical strategies used in the boundary object of *Older Canadians on the Move* to discursively recontextualize knowledge.

These include:

- 1) make an assertion supported by a claim from one particular scientific study;
- 2) make claims drawing on multiple expert-produced scientific articles;
- 3) identify and explain relevant details from a single study;

- 4) provide expert-produced definitions of concepts;
- 5) describe Canadian policies related to the federal transportation system;
- 6) identify Canadian-specific contextual factors related to older adults as a population;
- 7) cite international examples of best practices;
- 8) provide examples of available resources and technologies;
- 9) use visual representations of data to characterize specific parts of the population;
- 10) synthesize existing data into a representation of trends over time using one or more data sets;
- 11) provide a written explanation summarizing specific data, often in describing a population; and,
- 12) tell a story of recent events.

In *Older Canadians on the Move*, strategies one through four appear when using academic sources; strategies five through eight appear when using grey literature; strategies nine through eleven appear when using data sources; and, strategy twelve appears when using media reports. Below, I discuss these strategies in relation to the particular type of evidence cited in the transport report.¹¹

Science from academic journals. The third chapter of the transport report used the most academic citations or, put another way, the most recontextualization of expert-produced scientific knowledge from academic journals. Journal articles are ranked as the highest form of evidence used in the transport report. With academic sources, four rhetorical strategies consistently used throughout *Older Canadians on the Move* included: 1) making an assertion that is supported with reference to claims from a particular scientific study; 2) making a claim that

¹¹ Two points to note about the discussion of these rhetorical strategies: 1) not all sources cited below are included in my reference list, although they are available in Appendix F; and 2) in *Older Canadians on the Move*, several passages draw on different types of evidence. I did not identify different rhetorical strategies that the panel and staff used in drawing on multiple sources of evidence simultaneously.

draws on or summarizes multiple expert-produced studies; 3) identifying and explaining relevant lower-level details from a single study; and 4) providing expert-produced definitions of concepts.

The primary strategy used when citing academic sources was the first strategy identified above, making an assertion based on claims from a particular scientific study. This strategy, used with quantitatively- and qualitatively-based studies found in the literature, speaks to the multi-disciplinary nature of the CCA's boundary work. Here is a selection taken from the transport report that exhibits the use of this rhetorical strategy:

While the vast majority of older adults do not have cognitive disabilities, changes in cognitive processes do affect the broader population. Cognitive difficulties that increase with age can be associated with changes in physical performance (Best *et al.*, 2016) that may result in a decline in mobility (Sorond *et al.*, 2015). For example, gait performance has been linked to specific cognitive changes in older adults (Cohen *et al.*, 2016). Cognitive changes may also include short-term memory loss, changes in reaction time, and may change the way an individual generally interacts with the environment. Stress, which is often associated with travel, may also interact and accentuate cognitive difficulties. Older adults are more susceptible to distracting information, or information on the periphery of one's focus of attention as a result of reduced ability to prevent unwanted cognitive processing (Amer *et al.*, 2016a, 2016b). This change does have benefits, however, as older adults remember more things outside their primary focus compared to younger adults (Rowe *et al.*, 2006) (CCA, 2017, 31).

The second rhetorical strategy, used less often than the first, was making claims drawing on multiple expert-produced studies. Where this strategy appeared, a single sentence often represents multiple claims. Here is one example of this strategy:

Often, the so-called "digital divide" between older adults and the rest of the population is attributed to characteristics of the former group, including lack of know-how, perceived lack of usefulness, fear of technology, reduced cognitive and physical faculties, and low computer literacy (Porter & Donthu, 2006; Hetzner *et al.*, 2014; Wu *et al.*, 2015) (CCA, 2017, 35).

The third rhetorical strategy of identifying and explaining specific details from a single study also featured prominently in the recontextualization of scientific knowledge. These details

often related to specific populations in identified countries. Below, I provide an excerpt to demonstrate how the report uses this strategy:

Research on older adults has shown that there are a number of factors correlated with increased overnight travel. For example, leisure travel participation increases with income for older adults (50+) in the United States (Jang & Ham, 2009). Being married also increases travel participation (Jang & Ham, 2009). An interview questionnaire directed at older adults (55+) in Spain found that having a high income, and having self-perceived time, were linked to greater [p. 41] likelihood of travel (Alén *et al.*, 2016). This research also showed that older adults who had travelled for leisure in the past (at any age) were more likely to travel in the future (compared to non-travellers) (Alén *et al.*, 2016). The study also found that older adults appeared to have different travel preferences compared to other demographics. For example, organized trips (e.g., through touring companies) versus independent or self-directed trips are more popular among older adults than younger adults for a variety of reasons, including having people to travel with, security, and convenience (Alén *et al.*, 2016) (CCA, 2017, 41-42).

The fourth rhetorical strategy used in the report was to introduce expert-accepted definitions of terms. For example, a passage from section 3.2.1 “Older Adults and Technology” defines “ageism”:

While these factors are relevant, ageism may also play a role (McDonough, 2016). Ageism includes negative behaviours such as demeaning attitudes toward older adults and a general assumption that they are too old to learn new things (Butler, 1969) (Box 3.1). Research has demonstrated that “elderly people” are perceived as having high levels of warmth but low levels of competence (Cuddy & Fiske, 2002; Cuddy *et al.*, 2005) and “ageism may lead to a reduction in self-efficacy among older adults,” which in turn leads to more anxiety about their ability to use the internet, for example (McDonough, 2016) (CCA, 2017, 35).

Above, I have listed the four rhetorical strategies used to recontextualize academic literature and have identified passages where these strategies were used.

Grey literature. Grey literature was the most diverse source of evidence drawn on in *Older Canadians on the Move*, which meant that there were a variety of rhetorical strategies employed in taking up and recontextualizing this type of evidence. Some strategies I identified included: 1) describing Canadian policies related to the federal transportation system; 2)

identifying Canadian-specific contextual factors related to older adults as a population; 3) citing international examples of best practices; and 4) providing examples of available resources and technologies.

The strategy of describing Canadian policies related to the federal transportation system appears most often in earlier parts of the report. This strategy serves to identify federal Acts and related jurisdictional issues surrounding the transportation system in Canada, which has federal, provincial, regional, and municipal facets. The following excerpt from the report cites the Government of Canada (GC) and Transport Canada (TC):

Discrimination based on disability is explicitly prohibited in the *Canadian Human Rights Act* (GC, 2014). Furthermore, accessibility within the federal transportation system is protected by numerous government statutes and regulations. Some of these protections are legally binding accessible transport regulations developed as a result of authority provided under an act, and therefore administered under the legislative authority of Parliament (TC, 2016c). Specifically, the right to accessible transport is laid out in the *Canada Transportation Act*, which states that the [Canadian Transportation Agency] CTA has the authority to “make regulations for the purpose of eliminating undue obstacles in the transportation network under the legislative authority of Parliament to the mobility of persons with disabilities” (GC, 2015c). The Act does not go so far as to specify standards and protections related to accessibility, but it does empower the CTA to make regulations that eliminate unnecessary obstacles in the transportation network (GC, 2015c) (CCA, 2017, 15-16).

Another important strategy employed while using grey literature in *Older Canadians on the Move* involved identifying Canadian-specific contextual factors related to older adults as a population. There are several different sources of grey literature from different organizations ranging from Statistics Canada (StatCan), a not-for-profit non-governmental organization (Alzheimer Society), government analysts (Hudon & Milan, Turcotte), Transport Canada (TC), a transportation service-provider (Greyhound), the Government of Canada, and a government agency (PHAC). Below, I give four examples from the report to highlight the diversity of these organizations.

As the population ages, there are also an increasing number (although a stable percentage) of cases of cognitive disabilities, including dementia (StatCan, 2016a). Diagnoses of cognitive impairment, including dementia, in Canada for those aged 65 or older rose to almost 750,000 in 2011 (Alzheimer Society of Canada, 2013). By 2031, the number of diagnoses is expected to increase to 937,000 (Alzheimer Society of Canada, 2017) (CCA, 2017, 29-30).

While smartphone ownership remains relatively low, the majority of older adults engage in online activities. In Canada, 54% of women and 59% of men aged 65 or older reported using the internet in the past 12 months in 2013 (Hudon & Milan, 2016) and it is likely these percentages are higher today. Furthermore, 37% of women and 31% of men aged 65 or older who used the internet in 2013 were on social media, with the most popular platform being Facebook (Hudon & Milan, 2016). Although dated, these data do suggest that there is a sizable population of older adults, however, who do not access online sources such as booking services (see Chapter 4). This is true for people with disabilities as well (CCA, 2017, 35).

Information is available on the use of air, rail, and intercity bus, and generally this data can be useful for assessing the relative popularity of each mode of transport. An estimated 131 million passengers boarded planes and deplaned in Canada in 2015, with approximately 60% on domestic services, 20% on services between Canada and the United States, and 20% on other international services (TC, 2016a). Approximately 90% of this passenger traffic involved Canada's 26 NAS airports. Canada's busiest three airports are Toronto Pearson International, Vancouver International, and Montréal–Pierre Elliott Trudeau International (TC, 2016a). ... Canada's passenger rail company, VIA Rail Canada, moved 3.82 million passengers by train in 2015, which was slightly more than the previous year, but still less than its peak of 4.6 million in 2008 (TC, 2016a). There is currently less known about intercity bus use. In 2006, the most recent year for which Statistics Canada released data on passenger numbers, 16.8 million passengers used intercity bus services in Canada (TC, 2012). Greyhound is Canada's largest intercity bus company (Greyhound, 2016a) and from 2003 to 2013, the number of intercity bus companies significantly decreased from 32 to 18 (TC, 2014, 2016f) (CCA, 2017, 40-41).

Many older adults in Canada live in rural or remote locations. About one-fifth (22%) of those aged 65 or older live in regions outside census metropolitan areas (CMA, areas with populations greater than 100,000) (Turcotte, 2012). Some live in rural communities, which can be defined as populated areas with fewer than 1,000 inhabitants, or remote communities, which have no roads into the community (GC, 2015a; StatCan, 2015a). In rural and remote communities, transportation infrastructure is associated with higher costs compared to urban and suburban regions. These costs arise due to the difficulty of accessing more remote regions (TC, 2006; GC, 2015a) and inability to reach the economies of scale needed for cost-effective transit system development because of low population densities (TC, 2006; PHAC, 2011) (CCA, 2017, 42).

Another important strategy involves citing international examples of best practices. These sources come from American research consortiums and international bodies, such as the Organisation for Economic Cooperation and Development (OECD) and the World Health Organization (WHO). Below, I provide four examples that cite different organizations:

When mobility is moderately or severely limited, older adults may need to use mobility assistive devices such as canes, walkers, or wheelchairs, as illustrated by the personas of Charlotte and François. For some, these assistive devices provide enough support to allow them to maintain some independence in their mobility. Others need the support of another individual in addition to an assistive device. For instance, approximately 60% of wheelchair users between 65–84 years report needing help with getting around in a wheelchair and this increases to approximately 75% for people who are 85+ (Shields, 2004). Aging also impacts both hearing and vision according to comparable U.S. studies; a person who is 60 generally needs three times as much light to see compared to a 20-year-old (Green, 2013) and almost half of Americans over 75 have difficulty hearing (NIDCD, 2016) (CCA, 2017, 29).

More than a quarter of U.S. travellers with disabilities have taken trips internationally within the last five years and spent, on average, US\$2,500 (much higher than the average traveller expenditure of approximately US\$500) (Mandala Research LLC, 2015). Another study from Europe estimates that spending per vacation averages €620 per traveller (as cited in Alén, 2012). It is estimated that the potential revenues from tourism for people with reduced mobility total between €83 billion to €166 billion in Europe alone (as cited in Alén, 2012) (CCA, 2017, 45).

The geographical location of one's home may increasingly act as an obstacle to travel. Many older adults in countries from the Organisation for Economic Cooperation and Development (OECD) have spent their lives in urban areas, and will "age in place" with public transit and services supporting their transportation needs (OECD, 2001). But there are also many middle-aged adults who inhabit low-density suburbs, where car ownership is essential for daily living (OECD, 2001). These adults will likely encounter obstacles to travel when they stop driving (OECD, 2001) (CCA, 2017, 64).

The obstacles faced by older travellers can be similar to challenges faced by older adults in other aspects of day-to-day life. An increase in age-friendly and inclusive approaches across a range of sectors represents a move towards a global culture that is responding to the aging demographic and promoting healthy aging for all (WHO, 2007, 2015, 2016). For example, the WHO's Global Network for Age-Friendly Cities and Communities and the Age-Friendly Cities Framework represent a global movement in promoting age-friendly culture, with an emphasis on sharing practices among cities and communities (WHO, 2017b) (CCA, 2017, 96).

One final rhetorical strategy used in recontextualizing grey literature for Transport Canada involved providing specific examples of available resources and technologies, both domestically and internationally. These sources came from private organizations, such as Apple (iTunes), and international airports and other travel services (Hong Kong, Honolulu, and Switzerland). Below, I provide two examples:

Information relevant for older travellers can also come from accreditation organizations and resource guides that identify destinations compliant with accessibility standards. In Canada, there are several apps and resource guides to help travellers evaluate the physical accessibility and inclusivity of travel destinations (iTunes, 2017a, 2017c, 2017d; Access Now, n.d.), as well as initiatives that attempt to harmonize existing data within a single platform (Accessibility.Cloud, n.d.) (CCA, 2017, 55).

If travellers can identify services in the planning stage that will help with physical tasks during the journey (e.g., baggage handling), concerns about the trip may be alleviated and travel itself becomes more appealing. For example:

- Hong Kong International Airport offers remote options for baggage transport, including free baggage check-in at two major central train stations (MTR, 2016), or home baggage pickup and delivery for travellers in metropolitan Hong Kong (for approximately \$86 per trip for up to four regular-size luggage items as of June 2017 (WFS, n.d.))....

These types of services can also support multimodal travel. It should be noted that, while these services enable baggage-free travel for some, most options are associated with additional costs and therefore may not be available to all travellers (CCA, 2017, 56-57).

In referring to specific Acts and related jurisdictional issues, *Older Canadians on the Move* becomes more than a scientific report in that the legal considerations surrounding the question of adapting the transportation system to meet the needs of an aging population frame the discussion. The strategies used in recontextualizing grey literature were particularly helpful. These grey literature sources are diverse and very subject matter specific; however, taken together, they represent a diverse range of knowledge that are important to the considerations expressed in the transport report.

Data sources. *Older Canadians on the Move* features a number of figures, tables, and text that synthesize large amounts of quantitative data. The report employs these data sources to accomplish three purposes: 1) to use visual representations of data to exemplify the “personas”, described below; 2) to synthesize existing data into a visual representation of particular trends over time using one or multiple data sets; and 3) to represent data in written discourse.

The first strategy used with data sources was “personas”, which are visual “representations of a group of people” (*Staff 04*), portrayed through stories that depict common traits among a certain part of the population. These personas summarize the common challenges facing older adults in this category who are travelling in Canada. Personas serve as an example of a narrative device (Fischer, 2003) used in the report. Figure 4 provides one example of a persona.

YUMI (73 years old)
British Columbia

Yumi is a divorced Japanese-Canadian who immigrated to British Columbia in 1972 with her former husband. After Yumi’s divorce, money grew tight; because she was a homemaker while raising her daughter, Misato, the only work she could find after the divorce was a minimum-wage cashier job. Yumi now lives alone in a small apartment in Burnaby.



Misato lives in Seattle with her husband and son. Now that their son is older, Misato and her family have many weekend commitments and rarely get a chance to visit Yumi. Yumi misses them and, having two weeks’ worth of unused vacation, she considers travelling down to Seattle by train for the first time.

Yumi has a number of concerns about the trip:

- How will she manage planning the trip and travelling alone? She has never been to the train station and would have to travel by bus to get there.
- Can she afford the train ticket? Will she be able to bring food on the train to avoid having to buy an expensive meal?
- How will she contact Misato when she arrives? Will the prepaid cell phone Misato gave her work outside Canada?

Figure 4: A persona for “Yumi” as depicted in *Older Canadians on the Move* (page 34)

The second rhetorical strategy used for recontextualizing data involved synthesizing existing data into a visual representation of particular trends over time using one or multiple data sets. Figure 5 provides two examples of this strategy in “figure 3.2” and “figure 3.3” of the transport report. “Figure 3.3” in the report connects explicitly to the Yumi persona:

These data demonstrate that, while older adults are generally wealthier than past generations, many still live on small incomes and face the challenges associated with such, as is the case for the persona of Yumi. These challenges will often extend to transportation, as the costs associated with travel — especially over longer distances using modes that are within the federal transportation system (air, rail, intercity bus) — are often significant (CCA, 2017, 32).

That the text refers specifically to a specific persona suggests that “figure 3.3” in Figure 5 was designed in part as a response to the issues identified through the challenges presented in the Yumi persona.

The final rhetorical strategy used in recontextualizing data sources involves representing data in written discourse. This strategy appears in parts of the report that provide a written description of predominantly statistical information. The following excerpt, taken from Chapter 3 of *Older Canadians on the Move*, provides an example of this:

The population age structure among provinces and territories is highly variable. The percentage of the population over 65 is higher in the Atlantic provinces, British Columbia, and Quebec compared to the Canadian average, while it is lower in Alberta and the territories (StatCan, 2017b). At the extremes, as of 2016, 20% of Nova Scotians were over 65 while the same was true for only 3.8% of Nunavummiut (StatCan, 2017b). The proportion of Indigenous adults aged 65 or older was about 6% in 2011, compared to over 14% for non-Indigenous adults in the same year (StatCan, 2013) (CCA, 2017, 26).

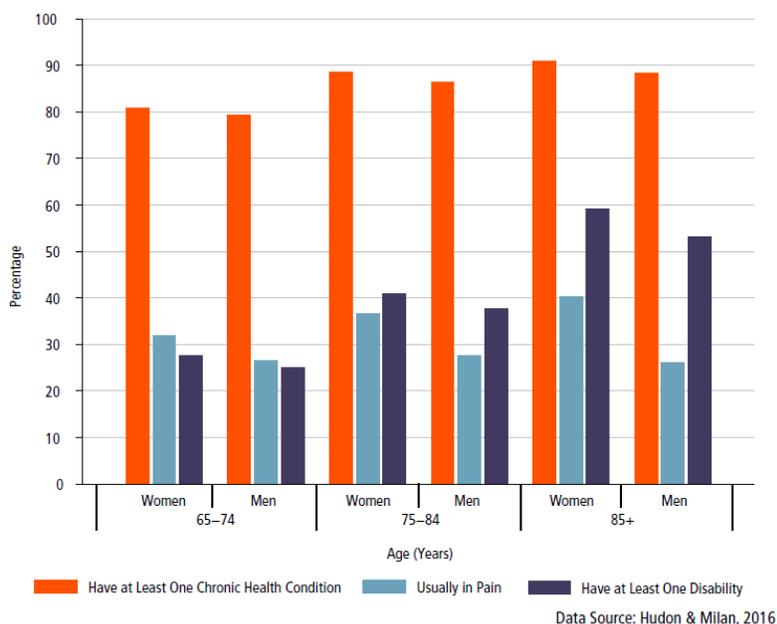


Figure 3.2
Older Adults in Canada with Certain Health Conditions, Divided by Age and Sex
 The percentage of the population of older adults in Canada who have at least one chronic health condition (orange bars), are usually in pain (blue bars), or who have at least one disability (purple bars), stratified by age and sex.

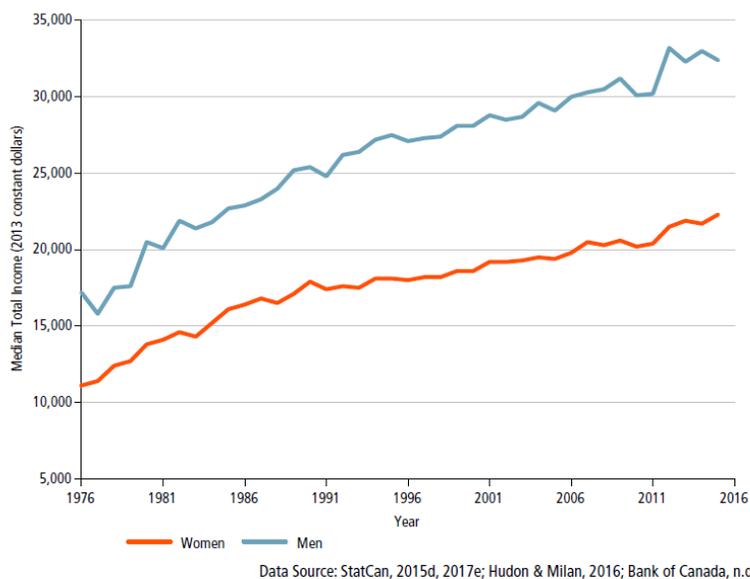


Figure 3.3
Median Total Income of Adults Aged 65 or Older in Canada, Divided by Sex
 The median income (in 2013 constant dollars) of men (blue line) and women (orange line) aged 65 or older in Canada from 1976 to 2015. Data for 2014 and 2015 were converted to 2013 constant dollars using the Bank of Canada Inflation Calculator in September 2017.

Figure 5: Image of Figures 3.2 and 3.3 from *Older Canadians on the Move* (CCA, 2017, p. 29 & 33), reproduced with permission from the CCA. These figures are examples where large quantitative of data were synthesized using either a single source of data (figure 3.2) or multiple sources of data (figure 3.3).

Box 4.1**Moving the Location of the Edmonton Intercity Bus Station**

In 2016, Greyhound Canada relocated the Edmonton intercity bus station from the downtown core to the Edmonton VIA Rail station, located approximately five kilometres away. While the new site does provide intermodal transportation for Greyhound and VIA Rail, it was not easily accessed by municipal transit as of February 2017. The nearest public transit stop is over a kilometre away with no sidewalks, and the stop itself is served by only a single route. Although Greyhound offers a shuttle from the site of the old downtown bus station, it only runs twice daily, which means cab transit is sometimes the only option for travellers. This may present a significant obstacle to would-be intercity bus users who are unable to afford cab fare, which is much more expensive than bus fare. This example highlights the importance of connected and accessible transit modality options that allow door-through-door travel, whose absence creates obstacles for travellers, particularly those of limited financial means.

(Adams, 2016; Mah, 2016; Kendrick, 2017)

Figure 6: A “call-out box” using media reports taken from the transport report (page 59)

Media reports. There are very few instances where information from media reports was used in *Older Canadians on the Move*. When they were employed as evidence, such information was used to tell a story of recent events. Below, I give three examples, including a “call-out box” taken from Chapter 4 of the report (seen in Figure 6):

The economic benefits of developing an inclusive transportation system may be particularly significant for northern Canada. The lack of transportation infrastructure in the North has been identified as an important challenge that leads to “lost economic potential” (TC, 2016h)... In August 2016, 1,000 passengers on the Northwest Passage trip of the *Crystal Serenity* cruise ship disembarked in Cambridge Bay, Nunavut (Brown, 2016). Although cruise ships were common in the area (with about five ships stopping in the community every year), the *Crystal Serenity* was 10 times [p. 46] larger than any ship that had previously visited the community (Brown, 2016; Hopper, 2016). As of June 2017, the cost of the Northwest Passage trip ranged from approximately \$29,000 to \$160,000 (Crystal Cruises, 2017); the high cost of tickets suggests that passengers likely have high disposable incomes and are likely to spend money in the communities they visit” (CCA, 2017, 46-47 – *Brown and Hopper are news articles*).

In May 2017, the Saskatchewan government shut down the service because of declining ridership and increasing operational costs (Bains, 2017; CBC, 2017b). This decision highlights a challenge inherent in rural and remote communities: although there is a demonstrated need for services and often customer satisfaction (the most recent STC

annual report noted a 93% customer satisfaction rating), low population density still makes these services economically unviable (Bains, 2017; STC, 2017). This closure has resulted in the elimination of transportation options for individuals in rural and remote communities who relied on the [Saskatchewan Transportation Company] as a means of transport. NDP MLA Cathy Sproule noted this will have a disproportionately negative impact on older adults (Warick, 2017)” (CCA, 2017. 65 – *Bains, CBC, and Warick are news articles*).

These sources were used to tell stories of events regarding local/regional concerns associated with travelling in Canada, particularly in and around northern parts of the country. These sources accounted for events not documented in academic or grey literature.

Chapter Summary and Conclusions

In this chapter, I have described the rhetorical nature of the final report, the boundary object, created by the Council of Canadian Academies’ (CCA) staff assessment team and panel members through the boundary work of the assessment process. In doing so, I have shown how *Older Canadians on the Move* was written in response to the specific questions that Transport Canada had provided. I have also suggested that the boundary object reflected the CCA’s cultural constructs of science, evidence, and expertise. I have identified twelve rhetorical strategies appearing in the report; these strategies served to recontextualize science and other sources of evidence.

Conclusions. Chapter 7 adds insights to our understanding of the collaborative discursive activity of recontextualizing (Linell, 1998) expert-produced scientific knowledge into a new form of knowledge accessible and useful to policy-makers. More specifically, the chapter has shown how such boundary work, as found in one organization, reflects the culture within which it is situated. Further, we have seen how the influence of cultural constructs are apparent in the resulting boundary object (Star & Griesemer, 1989), the final report. Finally, the chapter reveals

how these cultural constructs also inform the rhetorical strategies employed in the activity of recontextualizing science and other sources of policy-relevant evidence.

Having discussed the findings of my ethnographic study, I conclude this dissertation in the next chapter. Chapter 8 re-states the overarching purpose and argument presented above and then outlines the contributions of the study, its implications, and some possibilities for future research.

Chapter 8: Conclusion

This chapter concludes the dissertation, first by summarizing the findings presented in Chapters 5, 6, and 7. I then identify the contributions my research makes to both Discourse Studies and Science and Technology Studies (STS), point to the practical implications of my research for the Council of Canadian Academies, and suggest a line of future research that could follow from my study.

Summary of Research and Contributions to the Field

Through my research, I have described the collaborative discursive activity performed by the CCA's panel of outside experts and the CCA staff in accomplishing the boundary work of recontextualizing expert-produced scientific knowledge into a new form of scientific knowledge accessible and useful to government policy-makers. I suggest that certain aspects of the CCA's culture, including the use of the constructs "science", "evidence", and "expertise" in the CCA's assessment process, shape the CCA's boundary work. Traces of these constructs also appear in the boundary object known as an "expert panel report". The CCA's culture and discourse (Gee, 2011; Hajer, 1995, 2006) enable and constrain both the social actors involved in the boundary work of a CCA assessment *and* the claims made in the boundary object of a CCA expert panel report.

Using interpretive ethnography (Geertz, 1973, 1983), I set out to address research questions relating to the Council of Canadian Academies' (CCA) boundary work (Guston, 2001) performed in transforming and re-purposing expert-produced scientific knowledge for use by policy-makers. I sought to understand the nature of the collaborative discursive activity performed by the CCA, as a boundary organization (Guston, 2001), in recontextualizing (Linell,

1998) scientific knowledge for use by government policy-makers. Additionally, my research investigated the cultural constructs and cultural tools that function within the CCA and their influence on the CCA's boundary work. One key cultural tool used as a guide to the boundary work was the Council Assessment Lifecycle Methodology (CALM). My study also examined the roles and social actions of the various individuals involved in the CCA's collaborative discursive work.

Additionally, I focused on the rhetorical purposes of the intermediary texts (Tachino, 2012). In using a textographic approach (Swales, 1998) to explore the types of writing carried out by a boundary organization, I found that the staff team employed multiple iterations of intermediary texts to move the panel towards agreement. Examples of these texts include the panel briefing materials, panel meeting minutes, panel meeting summaries, and web-texts. Lastly, I also considered the rhetorical strategies used in the final boundary object, *Older Canadians on the Move*, produced by the CCA for Transport Canada. I found twelve rhetorical strategies used in the report to recontextualize scientific knowledge and other sources of evidence for use by policy-makers.

Contributions to the Field. My study examined the boundary work of an organization operating between the discursive domains of science and policy-making. The focus here was on the recontextualization – that is, the transformation and re-purposing – of expert-produced science into a new form of knowledge accessible and useful for government policy-makers. Here, I have unpacked the “black box” of the collaborative discursive activity of recontextualization. In doing so, I have revealed the influence of a boundary organization's culture on this activity, including the rhetorical strategies employed in the final report, viewed as a boundary object.

For writing scholarship, a key contribution of my research was to illuminate the ways in which a boundary organization's culture shapes its writing. At the same time, the research has shed light on the intermediary genres produced behind the scenes, an important part of the boundary work.

For Science and Technology Studies, my research has added a new understanding of the role of discourse in accomplishing the boundary work of providing science-informed advice to policy-makers. As well, the research has shown that the notion of "science" can include a wider range of disciplines than only the natural sciences.

Practical Implications for the Council of Canadian Academies

For the CCA, who generously allowed me to complete this research, my study suggests that there is an evolving understanding of what science, evidence, and expertise mean within the CCA. I believe that the broad definition of science used within the CCA – a definition that includes not only the natural sciences, but also the social sciences, engineering, and the humanities – served the CCA very well in the transport project. The staff were able to incorporate evidence and expertise from beyond the natural sciences to respond to Transport Canada's questions and to develop the final report.

Additionally, CALM functioned very effectively in the transport project, especially as a guide the staff team use for each project that helps changing personnel on the assessment team join the project part way through. The staff also shared relevant aspects of CALM with the panel members, which contributed to the project's positive conclusion. The transport project's "lessons learned" should be an invaluable resource for future projects that encounter similar changes in staff personnel throughout the project.

Lastly, the CCA's flexibility was important for adapting CALM in responding to some of the panel's demands during the transport project. One example was the inclusion, at the suggestion of a panel member, of a member-checking exercise. The staff were able to address the panel's concerns in this regard.

Future Research

One project could further explore the relationship between an organization's culture and the boundary work it performs: What other organizations perform boundary work and how does their culture influence their discursive activity?

Another very useful project would be to pick up the research story of a final report produced by a boundary organization, such as the CCA, by investigating the life of the report once it was given to a client. Such research could determine the extent to which the report was taken up: Who used the report and for what purposes? What was its ultimate impact in the policy-making sphere?

References

- Adler, P. A., & Adler, P. (1987). *Membership roles in field research*. London, UK: Sage Publications.
- Adler, P. A., & Adler, P. (2008). Of rhetoric and representation: The four faces of ethnography. *The Sociological Quarterly, 49*, 1-30.
- Agar, M. (1990). Text and fieldwork: Exploring the excluded middle. *Journal of Contemporary Ethnography, 19* (1), 73-88.
- Argote, L., & Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational Behavior and Human Decision Processes, 82* (1), 150-169.
- Artemeva, N. (2006). A time to speak, a time to act: A rhetorical genre analysis of a novice engineer's calculated risk taking. In Artemeva, N. & Freedman, A. (Eds.), *Rhetorical genre studies and beyond* (pp. 189-240). Winnipeg, MB: Inkshed Publications.
- Artemeva, N., & Freedman, A. (Eds.) (2006). *Rhetorical genre studies and beyond*. Winnipeg, MB: Inkshed Publications.
- Artemeva, N., & Freedman, A. (Eds.) (2016). *Genre studies around the globe: Beyond the three traditions*. Winnipeg, MB: Inkshed Publications.
- Asen, R. (2010). Reflections on the role of rhetoric in public policy. *Rhetoric & Public Affairs, 13* (1), 121-143.
- Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. [Eds.] (2007). *Handbook of ethnography*. London, UK: Sage Publications.
- Bazerman, C. (1988). *Shaping written language: The genre and activity of the experimental article in science*. Madison: University of Wisconsin Press.

- Bazerman, C., Little, J., & Chavkin, T. (2003). The production of information for genred activity spaces: Informational motives and consequences of the Environmental Impact Statement. *Written Communication, 20* (4), 455-477.
- Bednarek, A. T., Shouse, B., Hudson, C. G., & Goldberg, R. (2016). Science-policy intermediaries from a practitioner's perspective: The Lenfest Ocean Program experience. *Science and Public Policy, 43*, 291-300.
- Bejermi, J. (2010). *How Parliament works* (7th ed.). Ottawa, ON: Borealis Press.
- Bensaude-Vincent, B. (2001). A genealogy of the increasing gap between science and the public. *Public Understanding of Science, 10*, 99-113.
- Berger, P. L., & Luckmann, T. (1967). *The social construction of reality: A treatise in the sociology of knowledge*. New York, NY: Penguin.
- Bitzer, L. F. (1968). The rhetorical situation. *Philosophy & Rhetoric, 1*, 6-12.
- Blackler, F. (1993). Knowledge and the theory of organizations. Organizations as activity systems and the reframing of management. *Journal of Management Studies, 30* (6), 863-884.
- Blackler, F. (1995). Knowledge, knowledge work and organizations: An overview and interpretation. *Organization Studies, 16* (6), 1021-1046.
- Borgenschneider, K., and Corbett, T. J. (2010). *Evidence-based policymaking: Insights from policy-minded researchers and research-minded policymakers*. London, UK: Routledge.
- Bröstrom, A., & McKelvey, M. (2018). Engaging experts: Science-policy interactions and the introduction of congestion charging in Stockholm. *Minerva, 56* (2), 183-207.
- Burke, K. (1966). *Language as symbolic action*. Cambridge, UK: Cambridge University Press.
- Cairney, P. (2016). *The politics of evidence-based policy making*. London, UK: Palgrave.

- CCA (Council of Canadian Academies) (2009). *History of the Creation of the Council of Canadian Academies*. Retrieved from: [http://www.scienceadvice.ca/uploads/eng/workshop%20report%20and%20history/\(2009\)%20history%20of%20the%20council%20of%20canadian%20academies.pdf](http://www.scienceadvice.ca/uploads/eng/workshop%20report%20and%20history/(2009)%20history%20of%20the%20council%20of%20canadian%20academies.pdf).
- CCA (Council of Canadian Academies) (2012a). *The state of science and technology in Canada, 2012*. Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2012b). *40 priority research questions for ocean science in Canada*. Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2014). *Environmental impacts of shale gas extraction in Canada*. Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2015a). *Some assembly required: STEM skills and Canada's economic productivity*. Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2015b). *Health product risk communication: Is the message getting through?* Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2015c). *CCA Style Guide*. Unpublished document.
- CCA (Council of Canadian Academies) (2017). *Older Canadians on the Move*. Ottawa, ON: Council of Canadian Academies.
- CCA (Council of Canadian Academies) (2018). *Annual report 2017/18*. Retrieved online: <https://scienceadvice.ca/corporate-publications/>.
- CCA (Council of Canadian Academies) (2019). *About us*. Retrieved online: <http://scienceadvice.ca/en/about.aspx>.
- Cecarelli, L. (2011). Manufactured scientific controversy: Science, rhetoric, and public debate. *Rhetoric & Public Affairs*, 14 (2), 195-228.

- Clifford, J., & Marcus, G. E. (1986). *Writing culture: The poetics and politics of ethnography*. Berkley, CA: University of California Press.
- Collins, H. (2014). Rejecting knowledge claims inside and outside science. *Social Studies of Science*, 44 (5), 722-735.
- Collins, H. M., & Evans, R. (2002). Third wave of Science Studies: Studies of expertise and experience. *Social Studies of Science*, 32 (2), 235–296.
- Condit, C. M., Lynch, J., & Winderman, E. (2012). Recent rhetorical studies in public understanding of science: Multiple purposes and strengths. *Public Understanding of Science*, 21 (4), 386-400.
- Coupland, N. & Coupland, J. (1998). Reshaping lives: Constitutive identity work in geriatric medical consultations. *Text*, 18 (2), 159-190.
- Dahl, T. (2015). Contested science in the media: Linguistic traces of news writers' framing activity. *Written Communication*, 32 (1), 39-65.
- Davidson, B. (2017). Storytelling and evidence-based policy: Lessons from the grey literature. *Palgrave Communications*, 3, DOI: 10.1057/palcomms.2017.93.
- Dear, P. (2004). Mysteries of state, mysteries of nature: Authority, knowledge and expertise in the seventeenth century. In Jasanoff, S. [Ed.], *States of knowledge: The co-production of science and social order* (pp. 206-224). London, UK: Routledge.
- Denzin, N. K. (1997). *Interpretive ethnography: Ethnographic practices for the 21st century*. London, UK: Sage Publications, Inc.
- Denzin, N. K. (1999). Interpretive ethnography for the next century. *Journal of Contemporary Ethnography*, 28 (5), 510-519.

- Devitt, A. (1991). Intertextuality in tax accounting: Generic, referential, and functional. In Bazerman, C. & Paradis, J. (Eds.), *Textual Dynamics of the professions* (pp. 306-335). Madison, WI: University of Wisconsin Press.
- Doern, G. B., Castle, D., & Phillips, P. W. B. (2016). *Canadian science, technology and innovation policy The innovation economy and society nexus*. Montreal, QC and Kingston, ON: McGill-Queens University Press.
- Dörnyei, Z. (2007). *Research methods in Applied Linguistics*. Oxford, UK: Oxford University Press.
- Douglas, H. (2009). *Science, policy, and the value-free ideal*. Pittsburgh, PA: University of Pittsburgh Press.
- Douglas, H. (2012). Weighing complex evidence in a democratic society. *Kennedy Institute of Ethics Journal*, 22 (2), 139-162.
- Dryer, D. (2016). Disambiguating uptake: Toward a tactical research agenda on citizens' writing. In Reiff, M. J., & Bawarshi, A. (Eds.), *Genre and the performance of publics* (pp. 60-79). Logan, UT: Utah State University Press.
- Dunn, W. N. (2013). Policy analysis – A multidisciplinary framework. In Theodoulou, S. Z. & Cahn, M. A. (Eds.), *Public policy: The essential readings* (2nd ed.) (pp. 316-324). Boston, MA: Pearson.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2007). Participant observation and fieldnotes. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. [Eds.], *Handbook of ethnography* (pp. 352-368). London, UK: Sage Publications.
- Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes* (2nd ed.). Chicago, IL: The University of Chicago Press.

- Engeström, Y. (2015). *Learning by expanding: An activity theoretical approach to developmental research, 2nd ed.* New York, NY: Cambridge University Press.
- Esler, C. (2013). *The operations of power: Federal government discourse and the Northern Gateway Pipeline.* Unpublished Masters thesis. Ottawa, ON: Carleton University.
- Estabrooks, C. A., Thomson, D.S., Lovely, J. E., & Hofmeyer, A. (2006). A guide to knowledge translation theory. *Journal of Continuing Education in the Health Professions, 26*, 25-36.
- Estrada, F. C. R., & Davis, L. S. (2015). Improving visual communication of science through the incorporation of graphic design theories and practices into science communication. *Science Communication, 27* (1), 140-148.
- Evans, R., & Collins, H. (2008). Expertise: From attribute to attribution and back again? In Hackett, E. J., Amsterdamska, O, Lynch, M., & Wajcman, J. (Eds.), *The hand book of science and technology studies* (3rd ed.) (pp. 609-630). Cambridge, MA: The MIT Press.
- Fahnestock, J. (1999). *Rhetorical figures in science.* New York: Oxford University Press.
- Fahnestock, J. (2004). Preserving the figure: Consistency in the presentation of scientific arguments. *Written Communication, 21* (1), 6-31.
- Fahnestock, J. (2005). Rhetoric of science: Enriching the discipline. *Technical Communication Quarterly, 14* (3), 277-286.
- Falconer, M. A. (2013). *Tutor training in a Canadian university's Academic Writing Centre: An ethnographic study of the pre-service training and socialization of junior tutors.* Unpublished Masters thesis. Ottawa, ON: Carleton University.
- Feuer, M. J., & Maranto, C. J. (2010), Science advice as procedural rationality: Reflections on the National Research Council. *Minerva, 48*, 259-275.

- Fischer, F. (2003). *Reframing public policy: Discursive politics and deliberative practices*. Oxford, UK: Oxford University Press.
- Foucault, M. (2002a). *The archaeology of knowledge*. (Original work published 1969). London, UK: Routledge.
- Foucault, M. (2002b). *The order of things*. (Original work published 1966). London, UK: Routledge.
- Freadman, A. (1994). Anyone for tennis? In Freedman, A. & Medway, P. (Eds.), *Genre and the new rhetoric* (pp. 43- 66). London, UK: Taylor & Francis.
- Freadman, A. (2002). Uptake. In Coe, R., Lindgard, L., & Teslenko, T. [Eds.], *The rhetoric and ideology of genre* (pp. 39-53). Cresskill, NJ: Hampton.
- Gee, J. P. (2011). *An introduction to discourse analysis: Theory and method* (4th ed.). London, UK: Routledge.
- Geertz, C. (1973). *The interpretation of cultures*. New York, NY: Basic Books.
- Geertz, C. (1983). *Local knowledge: Further essays in interpretive anthropology* (3rd ed.). New York, NY: Basic Books.
- Gieryn, T. F. (1983). Boundary-work and the demarcation of science from non-science: Strains and interests in professional ideologies of scientists. *American Sociological Review*, 48 (6), 781-795.
- Gieryn, T. F. (1995). Boundaries of science. In Jasanoff, S., Markle, G. E., Peterson, J. C., & Pinch, T. [Eds.], *Handbook of science and technology studies* (pp. 393-443). Thousand Oaks, CA: Sage.
- Gieryn, T. F. (1999). *Cultural boundaries of science: Credibility on the line*. Chicago, IL: The University of Chicago Press.

- Gilbert, N. G., & Mulkay, M. J. (1985). *Opening Pandora's box: A sociological analysis of scientists' discourse*. Cambridge, UK: Cambridge University Press.
- Glaser, B. G., & Strauss, A. L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Piscataway, NJ: Transaction Publishers.
- Gluckman, P. (2014). The art of science advice to government. *Nature*, 507, 163-165.
- Gluckman, P. (2017). *Scientific advice in a troubled world*. Available online: <http://www.pmcsa.org.nz/blog/scientific-advice-in-a-troubled-world/>.
- Gluckman, P., & Allen, K. (2016). The balancing act of science in public policy. In MacDonald, B. H., Soomai, S. S., De Santo, E. M., & Wells, P. G. (Eds.), *Science, information, and policy interface for effective coastal and ocean management* (pp. 231-251). Boca Raton, FL: CRC Press.
- Google (2018). *Image of 180 Elgin Street, Ottawa, ON*. Available online: <https://www.google.ca/maps/place/180+Elgin+St,+Ottawa,+ON/@45.4198914,-75.6920075,3a,75y,196.21h,120.03t/data=!3m6!1e1!3m4!1sUlwvetT5BGM1yEM9-jGdQw!2e0!7i13312!8i6656!4m5!3m4>
- Graves, H. (2005). *Rhetoric in(to) science: Style as invention in inquiry*. Cresskill, NJ: Hampton Press, Inc.
- Graves, H. (2011). Rhetoric, knowledge, and the 'brute facts of nature' in science research. In Starke-Meyerring, D., Paré, A., Artemeva, N., Horne, M., & Yousoubova, L. (Eds.), *Writing in knowledge societies* (pp. 179-192). Fort Collins, Colorado: The WAC Clearinghouse. Available online at <http://wac.colostate.edu/books/winks/>.
- Graves, H. (2014). The rhetoric of (interdisciplinary) science: Visuals and the construction of facts in nanotechnology. *Poroi*, 10 (2), [dx.doi.org/10.13008/2151-2957.1207](https://doi.org/10.13008/2151-2957.1207).

- Gregory, J., & Miller, S. (1998). *Science in public: Communication, culture, and credibility*. New York, NY: Plenum Press.
- Gross, A. (2006). *Starring the text: The place of rhetoric in Science Studies*. Carbondale, IL: Southern Illinois University.
- Guston, D. H. (1999). Stabilizing the boundary between US politics and science: The role of the Office of Technology Transfer as a boundary organization. *Social Studies of Science*, 29 (1), 87-111.
- Guston, D. H. (2000). *Between politics and science: Assuring the integrity and productivity of research*. Cambridge, UK: Cambridge University Press.
- Guston, D. H. (2001). Boundary organizations in environmental policy and science: An introduction. *Science, Technology, & Human Values*, 26 (4), 399-408.
- Guston, D. H. (2003). Principal-agent theory and the structure of science policy, revisited: 'Science in policy' and the US *Report on Carcinogens*. *Science and Public Policy*, 30 (5), 347-357.
- Hajer, M. (1993). Discourse coalitions and the institutionalization of practice: The case of acid rain in Britain. In Fischer, F., and Forester, J. (Eds.), *The argumentative turn in policy analysis and planning* (pp. 43-76). London, UK: Duke University Press.
- Hajer, M. (1995). *The politics of environmental discourse: Ecological modernization and the policy process*. Oxford, UK: Clarendon Press.
- Hajer, M. (2006). Doing discourse analysis: Coalitions, practices, meaning. In Van den Brink, M., & Metze, T. (Eds.), *Words matter in policy and planning* (pp. 65-74). Utrecht, The Netherlands: Koyvinklijck Nederlands Aardrijkskundig Genootschap.

- Hammersley, M. (1992). *What's wrong with ethnography?: Methodological explorations*. London, UK: Routledge.
- Harris, R. (2009). Alan Gross and the rhetoric of science. *Perspectives on Science*, 17 (3), 346-380.
- Head, B., Ferguson, M., Cherney, A., & Boreham, P. (2014). Are policy-makers interested in social research? Exploring the sources and uses of valued information among public servants in Australia. *Policy and Society*, 33, 89-101.
- Hecker, A. (2012). Knowledge beyond the individual? Making sense of a notion of collective knowledge in organization theory. *Organization Studies*, 33 (3), 423-445.
- Hesse-Biber, S. N., & Leavy, P. (Eds.) (2008). *Handbook of emergent methods*. New York, NY: Guilford Press.
- Hessels, L. K., van Lente, H., & Smits, R. (2009). In search of relevance: The changing contract between science and society. *Science and Public Policy*, 36 (5), 387-401.
- Hewitt, S. (2009). Discourse analysis and public policy research. *Centre for Rural Economy Discussion Paper Series*, 24. Newcastle, UK: Centre for Rural Economy, Newcastle University.
- Heyl, B. S. (2007). Ethnographic interviewing. In Atkinson, P., Coffey, A., Delamont, S., Lofland, J., & Lofland, L. [Eds.], *Handbook of ethnography* (pp. 369-383). London, UK: Sage Publications.
- Hockey, J. (2002). Interviews as ethnography? Disembodied social interaction in Britain. In Rapport, N. (Ed.), *British subjects: An anthropology of Britain* (pp. 209-22). London, UK: Berg.

- Hockey, J., & Forsey, M. (2012). Ethnography is not participant observation: Reflections in the interview as participatory qualitative research. In Skinner, J. (Ed.) *The interview: An ethnographic approach* (pp. 69-83). London, UK: Berg.
- Howells, J. (2006). Intermediation and the role of intermediaries in innovation. *Research Policy*, 35, 715-728.
- Hutchins, E. (1995). *Cognition in the wild*. Cambridge, MA: MIT Press.
- Hutchins, J. A., & Stenseth, N. C. (2016). Communication of science advice to government. *Trends in Ecology & Evolution*, 31 (1), 7-11.
- Irwin, A., & Wynne, B. [Eds.] (1996). *Misunderstanding science? The public reconstruction of science and technology*. London, UK: Cambridge University Press.
- Jacobs, K. R., Nicholson, L., Murry, B. A., Maldonado-Roman, M., & Gould, W. W. (2016). Boundary organizations as an approach to overcoming science-delivery barriers in landscape conservation: A Caribbean case study. *Caribbean Naturalist*, 1, 87-107.
- Jasanoff, S. (1990). *The fifth branch: Science advisors as policymakers*. Cambridge, MA: Harvard University Press.
- Jasanoff, S. (1996). Is science socially constructed – and can it still inform public policy? *Science and Engineering Ethics*, 2 (3), 263-276.
- Jasanoff, S. (2004). Science and citizenship: A new synergy. *Science and Public Policy*, 31 (2), 90-94.
- Jasanoff, S. (2012). *Science and public reason*. London, UK: Routledge.
- Johnson, D. R., Eckland, E. H., & Lincoln, A. E. (2014). Narratives of science outreach in elite contexts of academic science. *Science Communication*, 36 (1), 81-105.

- Jones, M. D., & McBeth, M. K. (2010). A narrative policy framework: Clear enough to be wrong? *Policy Studies Journal*, 28 (2), 329-353.
- Journet, D. (1993). Interdisciplinary discourse and “boundary rhetoric”: The case of SE Jelliffe. *Written Communication*, 10 (4), 510-541.
- Journet, D. (2010). The resources of ambiguity: Context, narrative, and metaphor in Richard Dawkins 'The selfish gene'. *Journal of Business and Technical Communication* 24, 29-59.
- Keith, W., & Rheg, W. (2008). Argumentation in science: The cross-fertilization of argumentation theory and science studies (pp. 211-239). In Hackett, E., Amsterdamska, O., Lynch, M., & Wajcman, J. (Eds.), *The handbook of science and technology studies* (3rd ed.). Cambridge, MA: The MIT Press.
- Kinder, J., & Dufour, P. (2018). *A lantern on the bow: A history of the Science Council of Canada and its contributions to the science and innovation policy debate*. Ottawa, ON: Invenire
- Kitto, S. C., Sargeant, J., Reeves, S., & Silber, I. (2012). Towards a sociology of knowledge translation: The importance of being dis-interested in knowledge translation. *Advances in Health Science Education*, 17, 289-299.
- Knorr-Cetina, K. (1985). *The manufacture of knowledge: An essay on the constructivist and contextual nature of science*. New York, NY: Pergamon Press.
- Knorr-Cetina, K. (1999). *Epistemic cultures: How the sciences make knowledge*. Cambridge: Harvard University Press.
- Kuhn, T. S. (1970). *The structure of scientific revolutions* (2nd ed.). Chicago: University of Chicago Press.

- Kvale, S. (1996). *InterViews: An introduction to qualitative research interviewing*. London, UK: Sage Publications.
- Latour, B. (1987). *Science in action: How to follow scientists and engineers through society*. Milton Keynes, England: Open University Press.
- Latour, B. (2004). *Reassembling the social: An introduction to actor-network theory*. Oxford, UK: Oxford University Press.
- Latour, B., & Woolgar, S. (1986). *Laboratory life: The construction of scientific facts*. Princeton, NJ: Princeton University Press.
- Leith, P., & Vanclay, F. (2015). Translating science to benefit diverse publics: Engagement pathways for linking climate risk, uncertainty, and agricultural identities. *Science, Technology, & Human Values, 40* (6), 939-964.
- Leith, P., Haward, M., Rees, C., & Ogier, E. (2016). Success and evolution of a boundary organization. *Science, Technology, & Human Values, 41* (3), 375-401.
- Lindeman, N. (2007). Creating knowledge for advocacy: The discourse of research at a conservation organization. *Technical Communication Quarterly, 16* (4), 431-451.
- Lindeman, N. (2013). Subjectivized knowledge and grassroots advocacy: An analysis of an environmental controversy in Northern California. *Journal of Business and Technical Communication, 27* (1), 62-90.
- Linell, P. (1998). Discourse across boundaries: On recontextualizations and the blending of voices in professional discourse. *Texts, 18* (2), 143-157.
- Lønsmann, D. (2015). Negotiating positionality in ethnographic investigations of workplace settings: Student, consultant or confidante? In Alessi, G. M. (Eds.), *The ins and outs of*

- business and professional discourse research: Reflections on interacting with the workplace* (pp. 13-36). New York, NY: Palgrave.
- Luzón, M. J. (2013). Public communication of science in blogs: Recontextualizing scientific discourse for a diversified audience. *Written Communication*, 30 (4), 428-457.
- Lynch, M., & Woolgar, S. [Eds.] (1990). *Representation in scientific practice*. Cambridge, MA: The MIT Press.
- Majdik, Z. P. (2016). On rhetoric between science and society. *Rhetoric & Public Affairs*, 19 (1), 91-107.
- Marcus, G. E., & Fischer, M. M. J. (1986). *Anthropology as cultural critique: An experimental moment in the human sciences*. Chicago, IL: The University of Chicago Press.
- Martello, M. L. (2008). Arctic Indigenous peoples as representations and representatives of climate change. *Social Studies of Science*, 38 (3), 351-376.
- Maxwell, J. A. (2013). *Qualitative research design: An interactive approach* (3rd ed.). Thousand Oaks, CA: SAGE.
- Maxwell, J. A., & Miller, B. A. (2008). Categorizing and connecting strategies in qualitative data analysis. In Hesse-Biber, S. N., & Leavy, P. (eds.), *Handbook of emergent methods* (pp.461-477). New York, NY: Guilford Press.
- McNie, E. C., Parris, A., & Sarewitz, D. (2015). A typology for assessing the role of users in scientific research: Discussion Paper. *Consortium for Science, Policy & Outcomes Project on Innovation in Energy Systems and Conservation Science* [un-published paper]. Retrieved from: <http://cspo.org/wp-content/uploads/2015/02/Typology-Workshop-Paper.pdf>.

- Mehlenbacher, A. R. (2019). Registered reports: Genre evolution and the research article. *Written Communication, 36* (1), 38-67.
- Merton, R. K. (1973). *The sociology of science: Theoretical and empirical investigations*. Chicago, IL: The University of Chicago Press.
- Meyer, M. (2010). The rise of the knowledge broker. *Science Communication, 32* (1), 118-127.
- Miller, C. (1984). Genre as social action. *Quarterly Journal of Speech 70*, 151-167.
- Miller, C. R., Walsh, L., Wynn, J., Kelly, A. R., Walker, K. C., White, W. J., & Winderman, E. (2016). The great chain of being: Manifesto on the problem of agency in science communication. *Poroi, 12* (1), 1-16.
- Mishler, E. (1986). *Research interviewing: Context and narrative*. Cambridge, MA: Harvard University Press.
- Mitchell, G. R. (2010). Switch-side debating meets demand-driven rhetoric of science. *Rhetoric & Public Affairs, 13* (1), 95-120.
- Morgendorff, K., Molder, H., van Woerkum, C., & Gremman, B. (2016). Turning experts into self-reflexive speakers: The problematization of technical-scientific expertise relative to alternative forms of expertise. *Science Communication, 38* (1), 26-50.
- Mulkay, M. (1979). *Science and the sociology of knowledge*. London, UK: George Allen & Unwin.
- Myers, G. (1990) *Writing biology: Texts in the social construction of scientific knowledge*. Madison: University of Wisconsin Press.
- Myers, G. (2003). Discourse studies of scientific popularization: Questioning the boundaries. *Discourse Studies, 5* (2), 265-279.

- Myers, G., & Macnaghten, P. (1998). Rhetoric of environmental sustainability: Commonplaces and places. *Environment and Planning*, 30, 333-353.
- Nelson, J. (2003). Strategy studies: Explications of rhetorical performance. *Poroi*, retrieved online: <http://digital.lib.uiowa.edu/poroi/poroifeaturetypes.htm#strategystudies>.
- Nicolini, D., Mengis, J., & Swan, J. (2012). Understanding the role of objects in cross-disciplinary collaboration. *Organization Science*, 23 (3), 612-629.
- Nowotny, H., Scott, P., & Gibbons, M. (2001). *Re-thinking science: Knowledge and the public in an age of uncertainty*. Cambridge, UK: Polity Press.
- OECD (Organization for Economic Co-operation and Development) (2015). Scientific advice for policy making: The role and responsibility of expert bodies and individual scientists. *OECD Science, Technology and Industry Policy Papers*, 21. Paris, FR: OECD Publishing.
- Pallet, H. (2015). Public participation organizations and open policy: A constitutional moment for British democracy? *Science Communication*, 37 (6), 769-794.
- Paltridge, B., & Stevenson, M. (2017). Textography as a strategy for investigation: Writing in higher education and in the professions. *Oslo Studies in Language*, 9 (3), 45-58.
- Paroske, M. (2012). Overcoming burdens of proof in science regulation: Ephedra and the FDA. *Rhetoric & Public Affairs*, 15 (3), 467-497.
- Passera, S. (2018). Flowcharts, swimlands, and timelines: Alternatives to prose in communicating legal-bureaucratic instructions to civil servants. *Journal of Business and Technical Communication*, 32 (2), 229-272.
- Paul, D. (2004). Spreading chaos: The role of popularizations in the diffusion of scientific ideas. *Written Communication*, 21 (1), 32-68.

- Pawson, R. (2006). *Evidence-based policy: A realist perspective*. London, UK: Sage.
- Perelman, C., & Olbrechts-Tyteca, L. (1969). *The new rhetoric: A treatise on argumentation*. University of Notre Dame Press.
- Pielke, R. A., Jr. (2007). *The honest broker: Making sense of science in policy and politics*. Cambridge, UK: Cambridge University Press.
- Pielke, R., Jr., & Klein, R. (2009). The rise and fall of the Science Advisor to the President of the United States. *Minerva*, 47 (1), 7-29.
- Pilkington, O. A. (2016). Popular science as a means of emotional engagement with the scientific community. *International Journal of Science Culture and Sport*, 4 (1), 118-125.
- Polanyi, O. M. (1964). *Science, faith, and society: A searching examination of the meaning and nature of scientific inquiry*. Chicago, IL: The University of Chicago Press.
- Powell, W. W., Owen-Smith, J., & Smith-Doerr, L. (2011). Sociology and the science of science policy. In Fealing, K. H., Lane, J. I., Marburger, J. H. III, & Shipp, S. S. [Eds.], *The science of science policy: A handbook* (pp. 56-84). Stanford, CA: Stanford University Press.
- Pregernig, M. (2014). Framings of science-policy interactions and their discursive and institutional effects: Examples from conservation and environmental policy. *Biodivers Conserv*, 23, 3615-3639.
- Prelli, L. J. (1989). *A rhetoric of science: Inventing scientific discourse*. Columbia, SC: University of South Carolina Press.
- Rachul, C. (2016). *Digesting data: The social and ideological actions of Eating well with Canada's food guide* (unpublished doctoral dissertation). Carleton University, Ottawa, ON.

- Rachul, C. (2019). Digesting data: Tracing chromosomal imprint of scientific evidence through the development and use of Canadian dietary guidelines. *Journal of Business and Technical Communication*, 33 (1), 26-59.
- Rapport, N. (1991). Writing fieldnotes: The conventionalities of note-taking and taking note in the field. *Anthropology Today*, 7 (1), 10-13.
- Rapport, N. (2012). The interview as a form of talking=partnership: Dialectical, focussed, ambiguous, special. In Skinner, J. (Ed.) *The interview: An ethnographic approach* (pp. 53-68). London, UK: Berg.
- Ravotas, D. & Berkenkotter, C. (1998). Voices in the text: The uses of reported speech in a psychotherapist's notes and initial assessments. *Text*, 18 (2), 211-240.
- Reiff, M. J., & Bawarshi, A. [Eds.] (2016). *Genre and the performance of publics*. Boulder, CO: University Press of Colorado.
- Rein, M., & Schön, D. A. (1991). Frame-reflective policy discourse. In Wagner, P., Weiss, C. H., Wittrock, B., Wollmann, H. [Eds.]. *Social sciences and modern state: National experiences and theoretical crossroads* (pp. 262-289). Cambridge, UK: Cambridge University Press.
- Rudd, M. A. (2015). Scientists' framing of the ocean science-policy interface. *Global Environmental Change*, 33, 44-60.
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). London, UK: Sage Publications.
- Saner, M. (2014). A map of the interface between science & policy. *ISSP Policy Brief Series: Science/Policy Interface*, 6. Ottawa, ON: Institute for Science, Society and Policy, University of Ottawa.

- Saner, M. (2016). Temporal and spatial dimensions in the management of scientific advice to governments. *Palgrave Communications*, 2, DOI: 10.1057/palcomms.2016.59.
- Sapolsky, H. M., & Taylor, M. Z. (2011). Politics and the science of science policy. In Fealing, K. H., Lane, J. I., Marburger, J. H. III, & Shipp, S. S. [Eds.], *The science of science policy: A handbook* (pp. 31-55). Stanford, CA: Stanford University Press.
- Sarangi, S. (2001). On demarcating the space between 'lay expertise' and 'expert laity'. *Text*, 21 (1/2), 3-11.
- Schleirf, K., & Meyer, M. (2013). Situating knowledge intermediation: Insights from science shops and knowledge brokers. *Science and Public Policy*, 40, 430-441.
- Schön, D. A., & Rein, M. (1994). *Frame reflection: Toward the resolution of intractable policy controversies*. New York, NY: Basic Books.
- Sharp, L., & Richardson, T. (2001). Reflections on Foucauldian discourse analysis in planning and environmental policy research. *Journal of Environmental Policy & Planning*, 3, 193-209.
- Siler, K., Lee, K., & Bero, L. (2015). Measuring the effectiveness of scientific gatekeeping. *PNAS*, 112 (2), 360-365.
- Silverman, D. (2000). *Doing qualitative research: A practical handbook*. London, UK: Sage Publications.
- Skinner, J. (2012). A four-part introduction to the interview: Introducing the interview; society, sociology and the interview, anthropology and the interview; anthropology and the interview—edited. In Skinner, J. (Ed.), *The interview: An ethnographic approach* (pp. 1-50). London, UK: Berg.

- Smajgl, A., & Ward, J. (2013). A framework to bridge science and policy in complex decision making arenas. *Futures*, 52, 52-58.
- Smart, G. (1998). Mapping conceptual worlds: Using interpretive ethnography to explore knowledge-making in a professional community. *The Journal of Business Communication*, 35 (1), 111-127.
- Smart, G. (2006). *Writing the economy: Activity, genre and technology in the world of banking*. London, UK: Equinox.
- Smart, G. (2008). Ethnographic-based discourse analysis: Uses, issues and prospects. In Bhatia, V. K., Flowerdew, J., & Jones, R. H. (Eds.), *Advances in discourse studies* (pp. 56-66). London, UK: Routledge.
- Smart, G. (2011). Argumentation across web-based organizational discourses: The case of climate change. In Sarangi, S. & Candlin, C. (Eds.), *Handbook of communication in organisations and professions* (pp. 363-386). Berlin and Boston: Mouton De Gruyter.
- Smart, G. (2012). The discursive production and impairment of public trust through rhetorical representations of science: The case of global climate change. In Candlin, C. & Crichton, J. (Eds.), *Discourses of trust: The discursive construction of 'trust' within applied linguistic research* (pp. 252-268). Basingstoke, U.K., and New York: Palgrave Macmillan.
- Smart, G. (2016). Discourse coalitions, science blogs and public debate on global climate change. In Bawarshi, A. & Reiff, M.J. (Eds.), *Genre and the performance of publics* (pp. 157-177). Logan, Utah: Utah State University Press.
- Smart, G, Currie, S., & Falconer, M. (2014). Research on knowledge-making in professional discourses: The use of theoretical resources. In Bhatia, V. & Bremner, S. (Eds.), *The*

- Routledge handbook of language and professional communication* (pp. 85-98). London and New York: Routledge.
- Smart, G., & Falconer, M. (forthcoming). The uptake and recontextualization of climate-change science within ‘denialist’ cultural communities. In Sunesen, C., Bildsøe, H., Auken, S., and Andersen, J. [Eds.], *Genres of the climate debate*. Berlin, Germany: De Gruyter.
- Smith, B. L. R. (1992) *The Advisors: Scientists in the policy process*. Washington DC: The Brookings Institution.
- Snow, C. P. (1998). *The two cultures* (Originally published in 1959). Cambridge, UK: Cambridge University Press.
- Star, S. L. (2010). This is not a boundary object: Reflections on the origin of a concept. *Science, Technology, & Human Values*, 35 (5), 301-317.
- Star, S. L., & Griesemer, J. R. (1989). Institutional ecology, “translations” and boundary objects: Amateurs and professionals in Berkeley’s Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19, 387-420.
- Stirling, A. (2008). ‘Opening up’ and ‘closing down’: Power, participation, and pluralism in the social appraisal of technology. *Science, Technology, & Human Values*, 33 (2), 262-294.
- Straus, S. E., Tetroe, J., & Graham, I. (2009). Defining knowledge translation. *Canadian Medical Association Journal*, 181 (3-4), 165-168.
- Sundberg, M. (2007). Parameterizations as boundary objects on the climate arena. *Social Studies of Science*, 37 (3), 473-488.
- Swales, J. (1998). *Other floors, other voices: A textography of a small university building*. Mahwah, NJ: Laurence Erlbaum.

- Tachino, T. (2012). Theorizing uptake and knowledge mobilization: A case for intermediary genre. *Written Communication, 29* (4), 465-476.
- Tehara, A. K. (2010). Government 101 – Why understand the government matters for public policy. Available online: http://www.innoversity.com/RMfiles/Government_101.pdf.
- Theodoulou, S. Z. (2013). In search of a framework to understand the policy process. In Theodoulou, S. Z. & Cahn, M. A. (Eds.), *Public policy: The essential readings* (2nd ed.) (pp. 123-133). Boston, MA: Pearson.
- Turnhout, E., Stuver, M., Klostermann, J., Harms, B., & Leeuwis, C. (2013). New roles of science in society: Different repertoires of knowledge brokering. *Science and Public Policy, 40*, 354-365.
- Van Assche, K., Beunen, R., Duineveld, M., & Gruezmacher, M. (2017). Power/knowledge and natural resource management: Foucaultian foundations in the analysis of adaptive governance. *Journal of Environmental Policy & Planning, 19* (3), 308-322.
- van der Meulen, B. (1998). Science policies as principal-agent games: Institutionalization and path dependency in the relation between government and science. *Research Policy, 27* (4), 397-414.
- van der Sanden, M. C. A., & Meijman, F. J. (2008). Dialogue guides awareness and understanding of science: An essay on different goals of dialogue leading to difference science communication approaches. *Public Understanding of Science, 17*, 89-103.
- Van Maanen, J. (2011). *Tales of the field: On writing ethnography* (2nd ed.). Chicago, IL: The University of Chicago Press.

- Varpio, L., & St-Onge, C. (2011, May). Documenting rigor with the Study CV: A tool for research and scholarly work in medical education. In *Workshop Presented at the Canadian Conference on Medical Education*, Toronto, ON, Canada.
- Vignola-Gagne, E. (2014). Argumentative practices in science, technology and innovation policy: The case of clinician-scientists and translational research. *Science and Public Policy*, 41, 94-106.
- Waeraas, A., & Nielsen, J. A. (2016). Translation theory “translated”: Three perspectives on translation in organizational research. *International Journal of Management Reviews*. DOI: 10.1111/ijmr.12092.
- Walker, K. C. (2016). Mapping the contours of translation: Visualized un/certainties in the ozone hole controversy. *Technical Communication Quarterly*, 25 (2), 104-120.
- Waitt, G. (2012). Doing Foucauldian discourse analysis – Revealing social realities. In Hay, I. (Ed.), *Qualitative research methods in Human Geography* (3rd ed.) (pp. 217-240). Oxford, UK: Oxford University Press.
- Walsh, L. (2015). The double-edged sword of popularization: The role of science communication research in the popsci.com comment shutoff. *Science Communication*, 37 (5), 658-669.
- Walsh, L., & Ross, A. B. (2015). The visual invention practices of STEM researchers: An exploratory topology. *Science Communication*, 37 (1), 118-139.
- Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity*. New York, NY: Cambridge University Press.

- Wenger-Trayner, E., & Wenger-Trayner, B. (2015). *Communities of practice: A brief introduction*. Retrieved online: <http://wenger-trayner.com/introduction-to-communities-of-practice/>.
- Wickman, C. (2010). Writing material in chemical physics research: The laboratory notebook as locus of technical and textual integration. *Written Communication*, 27 (3), 259-292.
- Wickman, C. (2015). Locating the semiotic power of writing in science. *Journal of Business and Technical Communication*, 29 (1), 61-92.
- Wilson, G., & Herndl, C. (2007). Boundary objects as rhetorical exigence: Knowledge mapping and interdisciplinary cooperation at the Los Alamos National Laboratory. *Journal of Business and Technical Communication* 21, 129-154.

Appendix A: Research Agreement



Council of Canadian Academies
Conseil des académies canadiennes

December 2015

RESEARCH AGREEMENT – MATTHEW FALCONER

1. GENERAL

1.1. This agreement confirms that Matthew Falconer commenced an on-site research study about the Council of Canadian Academies processes on September 9, 2015.

2. SCOPE OF AGREEMENT AND RESEARCH TO BE CONDUCTED

- 2.1. Matthew is permitted to conduct research about the Council of Canadian Academies process of knowledge translation - specifically, the roles that people and language play in transforming research into science-related policy advice. The research will be ethnographic in nature and will be conducted mostly through participant-observation while also employing interview and survey techniques.
- 2.2. Matthew will be granted access to an active expert panel to complete his research. At the outset, he will be required to make the assessment team and the panel aware of his research project and intentions. He must also obtain written consent for any and all individuals participating in any interviews.
- 2.3. Matthew's original Research Proposal is attached to this agreement. Should the research proposal be altered in any way, a revised proposal will be given to the Council and appended to this agreement.
- 2.4. All interactions with staff and expert panelists for research purposes will be supervised by Samantha R. Ayoub.

3. CONFIDENTIALITY

- 3.1. The confidential nature of the all assessment content will remain protected at all times, as will the content-related deliberations of the research team and the Expert Panel. Matthew is only permitted to write about the knowledge translation process overall.
- 3.2. As part of data collection, Matthew is permitted to use the Council's Assessment and Methodology (CALM) about the overarching nine steps/process. The finer details of the methodology, including all "internal and explanatory" and all work-aids are confidential and confidential.
- 3.3. Financial support of the organization will not be disclosed in this research.
- 3.4. Care will be taken to protect the identities of participants involved in the study. All interview results will be anonymized and data collected will be de-identified. All audio and interview recordings will be kept under lock and key.
- 3.5. Any participant has the right to end their participation in the study at any time, for any reason, at any time after an interview session is given.
- 3.6. The President of the Council of Canadian Academies has granted permission for the full name of the organization to be used in the final study.

4. ETHICS

- 4.1. The ethics protocol for this project was reviewed by the Carleton University Research Ethics Board, which provided clearance to carry out the research (project #10-3873).

5. DURATION

- 5.1. Matthew will be permitted to carry out his research at the Council of Canadian Academies up to March 31, 2020.

6. PUBLICATION OF FINAL RESEARCH

- 6.1. The Council reserves the right to flag any factual errors as it relates to the organization specifically (e.g., date of incorporation, vision and mission statements etc.).
- 6.2. The Council shall not directly or indirectly interfere with the publication of Matthew's dissertation.

By signing this agreement, both the Matthew Falconer and the Council of Canadian Academies agree to all terms above.

Date: June 22, 2019

X

Da

Tom Bursey
VP Corporate Services & CFO
Council of Canadian Academies
613-567-5000 ext.224

Matthew Falconer, MA
PhD Student
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Atch #1: Research Proposal of Matthew Falconer

Appendix B: Sample of Interview Scripts

In this appendix, I provide samples of the types of questions I asked during the different phases of my research. Samples come from 2013, 2015-16, and 2017-18 data collection phases.

Sample from 2013 Interviews

1. Could you tell me about your experiences in the Council and the changes you've seen while working here?
2. Can you tell me a little bit about the first assessment you worked on?
 - a. What was your role on the staff team?
 - b. What was the writing and researching process like?
3. What types of documents do you prepare during the assessment lifecycle? And do these documents help you achieve any specific goals?
4. Could you describe the Council's methodology?
5. What is your general writing process?
6. Do you find it difficult to write in a team environment?
7. In what ways does the Council Assessment Lifecycle Methodology influence your writing process?
8. Could you describe how you see your role as a [program director/program coordinator/research associate/communications] in the Council?
 - a. How does your role relate to others on the assessment teams?
9. Could you describe your aspects of an assessment that you've enjoyed and those you have not enjoyed? Are there any specific examples of either case?
10. Overall, how do you feel the council's assessment life cycle works in practice?

Sample from 2015-16 Interviews

Thank you for agreeing to participate in this study. Over the next 25-30 minutes, I will ask a series of questions related to your understanding of the Council's knowledge translation practices. Specifically, I am interested in learning about how you understand the process of accessing and changing scientific information through your experience as a member of the Council staff. I am curious to learn about this process in relation to the Council's assessment methodology.

Before proceeding, let me remind you that you are not obligated to answer all of the questions – if there is one that you are not comfortable answering, we will skip it and proceed to the next.

With your permission, I will now turn on the recording device.

1. In your experience, how does the Council of Canadian Academies go about accessing and

changing scientific information into policy-oriented advice for its sponsors?

2. In your experience, where do members of the Council assessment team find original knowledge/evidence that will be used in a Council report?
3. Could you explain what is involved in changing this information into something that is used in a report?
4. Does your personal understanding of this knowledge translation process differ from your experience working with expert panels? If so, how?
5. Do you feel that the majority of staff in the Council share this perspective on how information is accessed and changed through a report? Why or why not?

Sample from 2017-18 Interviews

In this subsection, I provide samples of the interview questions used with members of the Council of Canadian Academies' staff and panel members working on the transportation project.

Staff Team Interviews

Thank you for agreeing to participate in this study. Over the next 45 minutes, I will ask a series of questions about your understanding of the Council of Canadian Academies' (CCA) knowledge translation practices and the transportation project that led to the publication of the Expert Panel Report, *Older Canadians on the Move*, for Transport Canada.

By knowledge translation, I mean learning about what counts as credible information, how this information is accessed, the tasks involved in working with this information, and the ways that this information may be changed or re-purposed.

To learn about the knowledge translation work done by the CCA for Transport Canada, I will ask questions about: Your work in the CCA and your understanding of the Council Assessment Lifecycle Methodology (or CALM), the interactions between staff team members and between staff and panellists, and your understanding of how science is used and changed through the work of the CCA and the transportation panel in particular.

Before proceeding, let me remind you that you are not obligated to answer all of the questions – if there is one that you are not comfortable answering, we will skip it and proceed to the next. Is it okay for me to now turn on the recording device?

- 01.** What is your professional background? How long have you been working in the CCA?

02. What was your role in the transportation project? What kind of work did your role involve?
- a. Did you help with identifying or finding sources?
 - b. Did you write any text during the project?
03. How did the staff team work together? What kind of work was involved and how were people organized? And how was this determined?
04. Did any of the workload change at different stages of the process? If so, how?
-
05. How would you describe the dynamic between the staff and panel during the transportation project?
06. How did the staff team engage the panel during the face-to-face panel meetings?
07. How did staff engage panel members between meetings?
08. Do you know of any strategies used to get information from panelists? If so, what were they?
09. Overall, how do you feel the transportation project went?
-
10. In your experience working in the CCA, what is an “expert”? What is “expertise”?
11. How did the staff determine what kind of expertise was needed for the transportation project?
12. From your perspective, what is scientific research? Was there any science used in the transportation project?
13. Generally speaking, what counts as “evidence” in the CCA’s work?
14. To what extent do you feel that science is translated for policymakers through the CCA’s work?

Panel Member Interview Script

Thank you for agreeing to participate in this study. Over the next 30-45 minutes, I will ask a series of questions related to your understanding of the Council of Canadian Academies’ (CCA) knowledge translation practices. I am interested in learning about the transportation assessment/ project. I am interested to learn about your involvement and the work of others. I am curious to learn about this process in relation to the CCA’s assessment methodology and how you understand the process of accessing and changing scientific information through your experiences.

Before proceeding, let me remind you that you are not obligated to answer all of the questions – if there is one that you are not comfortable answering, we will skip it and proceed to the next. With your permission, I will now turn on the recording device.

The first questions focus on your background and involvement with the CCA.

- 01.** What is your professional background? How do you feel your background fit with the transportation project?
- 02.** Were you aware of or familiar with the Council of Canadian Academies prior to working on the transportation project?
- 03.** Have you heard about or read the CCA’s “methodology”? Did the CCA share this or any other internal resources with you throughout the process of the transportation project?
- 04.** Overall, how do you feel the transportation project went?

The next series of questions focuses on the work done by different people and the activities of those involved in the process.

- 05.** How were you involved in the CCA’s transportation project?
 - a. Did your involvement change at different stages of the project?
 - b. Were you involved with any writing during the project?
 - c. Did you provide feedback on any writing?
 - d. Did you help staff in any way with identifying sources or examples of relevant activities used in the transportation industry?
- 06.** How was the workload divided up during the transportation project?
- 07.** How would you describe the dynamic between the staff and panel for the transportation project?

The next questions address the use of science in the transportation project.

- 08.** From your perspective, was there any scientific research used in the transportation report?
 - a. If so, could you explain what research and how it was used?
- 09.** Generally speaking, what is “evidence”?
- 10.** As someone who has now participated in an expert panel, do you think that using this approach to provide science and technology advice to policymakers is a good tool for gathering evidence? Why or why not?
- 11.** Using evidence in policy is a growing trend around the world. Do you see this as valuable for government decision makers? Why or why not?

Appendix C: Study CV STUDY CURRICULUM VITAE

LAST UPDATE: 2018-AUGUST-13

PROJECT SUMMARY & ESSENTIAL INFORMATION

RESEARCH COLLABORATORS: Graham Smart (Supervisor & Primary Investigator)

COLLABORATORS:

(Include dates joined & left) Matthew Falconer (PhD Candidate, Researcher)

STEERING COMMITTEE MEMBERS: Natasha Artemeva, Carleton University (April 2016 – September 2019)

(Include dates joined & left)

Christen Rachul, University of Manitoba (April 2016 – September 2019)

Joe Rowsell, Council of Canadian Academies (April 2016 – September 2019)

FINANCIAL SUPPORT:

NAME OF GRANT: Ontario Graduate Scholarship

TOTAL FUNDING AWARDED: \$15,000

START/END DATES OF FUNDING: May 2017-April 2018

NA

REPORT FOR FUNDING AGENCY

NAME OF GRANT: Ontario Graduate Scholarship

TOTAL FUNDING AWARDED: \$15,000

START/END DATES OF FUNDING: May 2018-April 2019

REPORT FOR FUNDING AGENCY: NA

ETHICS APPROVAL(S):

BOARDS SUBMITTED TO:	Carleton University Research Ethics Board – A
PROTOCOL NUMBER:	10-5296
DATE(S) APPROVAL(S) RECEIVED:	January 31, 2017
DATE(S) OF RENEWAL(S):	January 03, 2018
VALID UNTIL:	January 2019

DATA TO BE STORED UNTIL: June 2024

**RESEARCH
PROPOSAL /
PROJECT
DESCRIPTION:**

Proposal: [Falconer-DP2v5\(27-11-2017\)](#) -- The research questions guiding my investigation are the following:

1. What is the nature of the collaborative discursive activity performed by the Council of Canadian Academies (CCA), as a “boundary organization”, in recontextualizing expert-produced scientific knowledge originally published in academic journals into a new form of scientific knowledge that is comprehensible and useful to government policy-makers?
2. What are the roles and social actions of the different individuals involved in this collaborative transformation and re-purposing of scientific knowledge?
3. What rhetorical functions are performed by the various genres involved in this discursive activity of recontextualization? Are there related genres sets that can be identified and investigated?

RECRUITMENT:

<i>STRATEGIES AND DATES COMPLETED:</i>	<i>NUMBER OF PARTICIPANTS RECRUITED</i>	<i>NUMBER OF DECLINED PARTICIPANTS:</i>
DIRECT EMAIL TO PARTICIPANT 1 (SEPT 2017)	One (1)	None (0)
EMAIL TO ALL PANEL MEMBERS (DEC 2017, FOLLOW-UP JAN 2018 & FEB 2018)	Seven (7)	Two (1 on sabbatical, 1 too busy)
EMAIL DIRECTLY TO ALL CCA STAFF ON PROJECT	Seven (7)	None (0)

CONSENT:

CONSENT FOR “EARLIER STUDIES” – 2013 & 2015 – EXPLICIT WITH ALL 10 CCA STAFF INTERVIEWED. THE FOLLOWING DOCUMENTS “CYCLE 3” INTERVIEW CONSENT

<i>CONSENT FORM (VERSION NUMBER)</i>	<i>FILENAME (PARTICIPANT PSEUDONYM)</i>	<i>EXPLICIT VS. IMPLICIT CONSENT</i>	<i>CONSENTOR (INITIALS)</i>	<i>STORAGE LOCATION</i>
	Staff 01	Explicit	Matthew Falconer (MF)	Private (home)
	Panel 01	Explicit	MF	Ibid
	Panel 02	Explicit	MF	Ibid
	Panel 03	Explicit	MF	Ibid
	Panel 04	Explicit	MF	Ibid
	Panel 05	Explicit	MF	Ibid
	Panel 06	Explicit	MF	Ibid
	Panel 07	Explicit	MF	Ibid
	Staff 02	Explicit	MF	Ibid
	Staff 03	Explicit	MF	Ibid

	Staff 04	Explicit	MF	Ibid
	Staff 05	Explicit	MF	Ibid
	Staff 06	Explicit	MF	Ibid
	Staff 07	Explicit	MF	Ibid
	Staff 08	Explicit	MF	Ibid

CONTEXT / SETTING DETAILS:

	<i>DESCRIPTION</i>	<i>NOTED IN DATA COLLECTED VIA:</i>
<i>PHYSICAL SETTING WHERE DATA WERE COLLECTED:</i>	<p><i>INTERVIEWS HELD IN-PERSON DONE IN OFFICE OF THE COUNCIL OF CANADIAN ACADEMIES</i></p> <p><i>INTERVIEWS HELD ON THE PHONE WERE DONE IN PRIVATE RESIDENCE OF RESEARCHER</i></p> <p><i>OBSERVATIONAL DATA COLLECTED DURING RESEARCHER'S PREVIOUS EMPLOYMENT IN THE COUNCIL OF CANADIAN ACADEMIES (RESEARCH SITE) – 2013, 2015-16</i></p>	<p><i>INTERVIEWS</i></p> <p><i>INTERVIEWS</i></p> <p><i>OBSERVATIONS</i></p>
<i>ANALYSIS RELEVANT FACTORS RELATED TO SETTING CONTEXT:</i>	<p>Researcher previously employed by Council of Canadian Academies (2013; 2015-16)</p> <p>Previous research done and included in current study (detailed in data collection below)</p>	
<i>OTHER CONTEXT SPECIFICITIES THAT COULD IMPACT ANALYSIS, TRANSFERABILITY/GENERALIZABILITY:</i>	<p>Research agreement between Council of Canadian Academies and Matthew Falconer changed in August 2017 – no longer allowed to do ethnographic observations and only</p>	

	permitted access to a CCA project done all panel meetings	
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DATA COLLECTION

OBSERVATIONS:

MY OBSERVATIONS TOOK PLACE WHILE I WAS EMPLOYED BY THE COUNCIL OF CANADIAN ACADEMIES DURING MY INTERNSHIP FROM JULY TO DECEMBER 2013 AND AGAIN FROM SEPTEMBER 2015 TO AUGUST 2016. DURING 2013, I WORKED 5 DAYS A WEEK AS A RESEARCH INTERN ON TWO PROJECTS, THE STEM SKILLS IN THE LABOUR ECONOMY AND HEALTH RISK COMMUNICATION. DURING 2015-16, I WORKED TWO DAYS A WEEK AS A COMMUNICATIONS ASSISTANT AND PARTICIPATED IN WEEKLY MEETINGS, TOOK ON SEVERAL COMMS-RELATED PROJECTS, AND HELPED WITH THE CCA'S BOOTH AT THE CANADIAN SCIENCE POLICY CONFERENCE IN NOVEMBER 2015. I ALSO HAVE WORKED AS A NOTETAKER IN THE CANADIAN ACADEMY OF HEALTH SCIENCE'S ANNUAL FORUM IN 2015, 2016, AND 2017. THE CAHS IS A MEMBER ACADEMY AND MY EXPERIENCE THERE HAS BEEN AN INTRODUCTION TO ONE WAY IN WHICH THE CCA STARTS AN ASSESSMENT.

IN GENERAL, MY OBSERVATIONS INCLUDE MEETING NOTES TAKEN DURING MY RESPECTIVE TENURES IN THE OFFICE AND INCLUDE HOW TEAMS FUNCTION COLLABORATIVELY IN WEEKLY MEETINGS, HOW THE STAFF AND PANEL INTERACT DURING PANEL MEETINGS, AND HOW COMMUNICATIONS OPERATES WITHIN THE CCA. I ALSO ATTENDED BI-WEEKLY ALL STAFF MEETINGS AND SAW HOW THE ORGANIZATION SHARES INFORMATION ON THAT FRONT. IN 2013, I PARTICIPATED IN RECRUITING A CHAIR AND PANEL FOR THE HEALTH RISK COMMUNICATION PROJECT, WHICH INCLUDED BACKGROUND RESEARCH AND SHARING PREFERRED INDIVIDUALS. I ALSO PARTICIPATED IN A PANEL MEETING FORM STEM SKILLS IN DECEMBER 2013 BY PREPARING MATERIALS, ATTENDING THE MEETING, PRESENTING TO THE PANEL, AND INTERACTING WITH ALL PANELISTS OUTSIDE OF THE MEETING (AND STAFF – THERE WAS A LOT OF BACK-DOOR CONVERSATIONS THROUGHOUT THOSE TWO DAYS).

INTERVIEWS:

Inter #	Inter Cycle # (C) / interview #	Interviewee Participant Code Name	Date & Time of Interview	Length of Interview (in min)	Interview protocol used (file name)	Interviewer's Initials	Date Transcribed	Length of file (1.5 spc)	Transcribed Interview File Name
01	C1 / int 1	Staff 1 (RA)	Sept 09 2013	65 min	CCA Writing practices	MF	Sept 2013	32	I1_RA1 Sept 9 2013
02	C1 / int 2	Staff 2 (RA)	Sept 19 2013	58 min	CCA Writing practices	MF	Sept 2013	21	I1_RA2 Sept 19 2013

03	C1 / int 3	Staff 3 (RA)	Sept 27 2013	78 min	CCA Writing practices	MF	Oct 2013	41	I1_RA3 Sept 27 2013
04	C1 / int 4	Staff 4 (PD)	Sept 20 2013	~60 min	CCA Writing practices	MF	Sept 20 2013	4	I1_PD1_Sept 20 2013_NOTES
05	C1 / int 5	Staff 5 (PD)	Oct 01 2013	58 min	CCA Writing practices	MF	Oct 2013	21	I1_PD2_Oct_01
06	C1 / int 6	Staff 6 (COMMS)	Sept 24 2013	63 min	CCA writing practices	MF	Oct 2013	28	I1_CT1 Sept 24 2013
07	C1 / int 7	Staff 7 (PC)	Oct 01 2013	39 min	CCA writing practices	MF	Oct 2013	19	I1_PC1 Oct 01
				~421 min				166	
08	C2 / int 1	Staff 1 (RA)	Dec 16 2015	29 min	CCA Knowl Trans	MF	Dec 23 2015	10	CIKT-Int01(16-12-15)
09	C2 / int 2	Staff 3 (RA)	Dec 17 2015	26 min	CCA Knowl Trans	MF	Dec 23 2015	10	CIKT-Int02(17-12-15)
10	C2 / int 3	Staff 4 (RA)	Dec 21 2015	23 min	CCA Knowl Trans	MF	Dec 23 2015	8	CIKT-Int03(21-12-15)
				78 min				28	Total Top2=194
11	C3 / int 1	Staff 3 (RA)	Sept 17 2017	78 min	(2017-09-15)Falconer_Staff-InterviewQ	MF	October 24 2017	30	001-CCA-KT-S01(2017-Sept-17)

12	C3 / int 2	Panel 1	Jan 19 2018	50 min	(2018-01-08)Panel- InterviewQ	MF	Feb 07 2018	21	002-CCA-KT- P01(2018-Jan-19)
13	C3 / int 3	Panel 2	Jan 22 2018	32 min	(2018-01-08)Panel- InterviewQ	MF	Jan 31, 2018	17	003-CCA-KT- P02(2018-Jan-22)
14	C3 / int 4	Panel 3	Jan 24 2018	46 min	(2018-01-22)Panel- InterviewQ2	MF	Feb 09, 2018	20	004-CCA-KT- P03(2018-Jan-24)
15	C3 / int 5	Panel 4	Feb 09 2018	36 min	(2018-01-22)Panel- InterviewQ2	MF	Feb 22, 2018	15	005-CCA-KT- P04(2018-Feb-09)
16	C3 / int 6	Panel 5	Feb 09 2018	29 min	(2018-01-22)Panel- InterviewQ2	MF	Feb 21, 2018	15	006-CCA-KT- P05(2018-Feb-09)
17	C3 / int 7	Panel 6	Feb 15 2018	38 min	(2018-02-12)Panel- InterviewQ3	MF	Feb 23, 2018	18	007-CCA-KT- P06(2018-Feb-15)
18	C3 / int 8	Panel 7	Feb 28 2018	59 min	(2018-02-12)Panel- InterviewQ3	MF	Mar 02, 2018	27	008-CCA-KT- P07(2018-Feb-28)
19	C3 / int 9	Staff 8 (PC)	Mar 26 2018	51 min	(2018-03-15)Staff- InterviewQ2	MF	Apr 20, 2018	26	009-CCA-KT- S02(2018-Mar- 26)
20	C3 / int 10	Staff 9 (PC)	Mar 28 2018	56 min	(2018-03-15)Staff- InterviewQ2	MF	June 04, 2018	30	10-CCA-KT- S03(2018-Mar- 28)
21	C3 / int 11	Staff 10 (RA)	Apr 25 2018	53 min	(2018-04-23)Staff- InterviewQ3	MF	Apr 30, 2018	32	011-CCA-KT- S04(2018-Apr-25)

22	C3 / int 12	Staff 11 (PD)	May 04 2018	67 min	(2018-05-01)Staff- InterviewQ4	MF	June 04, 2018	28	012-CCA-KT- S05(2018-May- 04)
23	C3 / int 13	Staff 12 (SAC)	May 15 2018	60 min	(2018-05-10)SAC- InterviewQ	MF	June 15, 2018	36	013-CCA-KT- S06(2018-May- 15)
24	C3 / int 14	Staff 13 (Comms)	June 11 2018	80 min	(2018-06-07)Staff- InterviewQ6	MF	June 18, 2018	47	014-CCA-KT- S07(2018-June- 11)
25	C3 / int 15	Staff 14 (Dir Assessments)	Aug 13 2018	34 min	(2018-06-13)Staff- InterviewQ7	MF	Aug 13, 2018	20	015-CCA-KT- S08(2018-Aug- 13)
				Total: 769 min			Total:	382	
			TOTAL AUDIO	~1268 min (21 hrs)			TOTAL PAGES	576 pages	

DOCUMENTS:

Document #	Name and/or Description of Document Collected	Electronic (E) or paper-based (P) document	Anonymization completed by (initials)
01	History of the creation of the Council of Canadian Academies (Written by Stavroula Papadopoulos in 2007, details the formation of the CCA’s Board of Directors, securing funding from Paul Martin Jr.’s government in 2005, and the history of similar “assessment” work in Canada from the Science Council of Canada (1966-1992) to the CCA).	E (printed – downloaded 2013)	NA
02	Council Assessment Lifecycle Methodology (Draft, version 8, June 2015)	P (received during second contract)	NA
03	Council Assessment Lifecycle Methodology (Draft, version 9, November 2016)	E (printed – rec Dec 2017)	NA
04	Style Guide 4.0 - internal style guide used by CCA staff (researchers and communications) to standardize the writing done by all staff for any publication (includes templates etc.)	E (printed – rec Dec 2017)	NA
05	Proposal to CCA from Transport Canada (Provides list of funding department and supporting departments, main question and sub-questions sent to CCA, background/need for assessment, rationale/literature review to start the panel process, and a detailed reference list, among other notes of interest)	E (printed – collected 2015 during second contract)	NA
06	Final report titled “Older Canadians on the move: The expert panel on the transportation needs of an aging population” (published Dec 14 2017, first read Jan 19 2018)	P (received by mail from CCA)	NA
07	Panel meeting 1 – September 22-23 2016 (Gatineau, QC) – meeting materials – (2016-09-16) PM1 Meeting Package (FOR PRINT) briefing materials for meeting 22-23 Sept 2016 (contains all preliminary research done by CCA staff and given to the panel as a form	E (printed – rec Nov 2017)	

	of thinking through the proposal, getting all panel members on the same page, and beginning the conversation)		
08	Panel meeting 1 meeting summary (05-Oct-2016) – outlines work done during first panel meeting, directions panel agreed to and work for staff to accomplish before next panel meeting.	E (printed – rec Nov 2017)	NA
09	Panel meeting 1 – meeting notes – “transportation mtg day 2 (2016-09-23)”	E (printed – rec Nov 2017)	NA
10	Panel meeting 1 – meeting notes – “innovation and outline,”	E (printed – rec Nov 2017)	NA
11	Panel meeting 1 – meeting notes – “sponsor presentation, Q+A”	E (printed – rec Nov 2017)	NA
12	Panel meeting 1 – meeting notes – “the older traveller”	E (printed – rec Nov 2017)	NA
13	Panel meeting 1 – meeting notes – “the transportation system”	E (printed – rec Nov 2017)	NA
14	Panel meeting 1 – meeting notes – “potential questions for Transport Canada”	E (printed – rec Nov 2017)	NA
15	Panel meeting 1 – meeting notes – minutes from staff (2 researchers)	E (printed – rec Nov 2017)	NA
16	Panel meeting 1 – presentations – “(2016-09-20) older traveller and innovation	E (printed – rec Nov 2017)	NA

17	Panel meeting 1 – presentations – (2016-09-20) report outlines	E (printed – rec Nov 2017)	NA
18	Panel meeting 1 – presentations – (2016-09-21) CCA transportation panel meeting	E (printed – rec Nov 2017)	NA
19	Panel meeting 1 – presentations – (2016-09-21) federally regulated trans sys	E (printed – rec Nov 2017)	NA
20	Panel meeting 1 – presentations – (2016-09-21) overview of Council	E (printed – rec Nov 2017)	NA
21	Panel meeting 1 – presentations – (2016-09-21) Transport Canada presentation	E (printed – rec Nov 2017)	NA
22	Panel meeting 1 – presentations – (2016-09-21) Transportation panel meeting complete staff slides	E (printed – rec Nov 2017)	NA
23	Panel meeting 1 – presentations – (2016-09-23) Transportation panel meeting complete staff slides	E (printed – rec Nov 2017)	NA
24	Panel meeting 1 – presentations – Framework (can edit)	E (printed – rec Nov 2017)	NA
25	Panel meeting 1 – presentations – Sponsor presentation	E (printed – rec Nov 2017)	NA
26	Panel meeting 1 – sponsor – formal invitation to first panel meeting	E (printed – rec Nov 2017)	NA
27	Panel meeting 1 – sponsor – risk communications panel – questions for the sponsor	E (printed – rec Nov 2017)	NA

28	<u>Panel meeting 2- December 13-14 2016 (Ottawa)</u> – meeting materials – meeting package – CCA PM2 meeting materials – FOR PRINT	E (printed – rec Nov 2017)	NA
29	Panel meeting 2 – meeting materials – meeting package – A-A – ACCESS committee presentation	E (printed – rec Nov 2017)	NA
30	Panel meeting 2 – meeting materials – meeting package – A-B- CAA memo to CCA transport panel	E (printed – rec Nov 2017)	NA
31	Panel meeting 2 – post meeting – (2016-12-20) report outline BC	E (printed – rec Nov 2017)	NA
32	Panel meeting 2 – post meeting – (2016-12-20) Report outline	E (printed – rec Nov 2017)	NA
33	Panel meeting 2 – post meeting – (2016-12-21) Meeting summary	E (printed – rec Nov 2017)	NA
34	Panel meeting 2 – post meeting – (2016-12-21) Transport minutes BC	E (printed – rec Nov 2017)	NA
35	Panel meeting 2 – post meeting – MeetingSummary.TI	E (printed – rec Nov 2017)	NA
36	Panel meeting 2 – post meeting – Opening remarks and TONS presentations	E (printed – rec Nov 2017)	NA
37	Panel meeting 2 – post meeting – notes – (2016-12-12) Meeting notes (WX day 2)	E (printed – rec Nov 2017)	NA
38	Panel meeting 2 – post meeting – notes – notes from JwB on second panel meeting	E (printed – rec Nov 2017)	NA

39	Panel meeting 2 – post meeting – notes – panel meeting 2 – EM	E (printed – rec Nov 2017)	NA
40	Panel meeting 2 – post meeting – notes – panelMeeting2Notes.TI	E (printed – rec Nov 2017)	NA
41	Panel meeting 2 – post meeting – notes – potential report outline – post day 1 - EM	E (printed – rec Nov 2017)	NA
42	Panel meeting 2 – post meeting – panel feedback – folder contains series of emails from 7 panel members with feedback on briefing materials and panel meeting. Feedback ranges from general comments in emails to some general comments and editing in with comments throughout attached word documents	E (printed – rec Nov 2017)	NA
43	<u>Panel meeting 3 – March 21-22, 2017 (Calgary)</u> – meeting materials – (2017-02-16) Transport P3 Materials	E (printed – rec Nov 2017)	NA
44	Panel meeting 3 – meeting materials - (2017-03-20) Transport Narrative	E (printed – rec Nov 2017)	NA
45	Panel meeting 3 – meeting materials - CCA (2017-03-15) Transportation Report - Draft 1.0	E (printed – rec Nov 2017)	NA
46	Panel meeting 3 – meeting materials – Email to Panel	E (printed – rec Nov 2017)	NA
47	Panel meeting 3 – meeting materials – for panel – (2017-03-15) CCA Transportation Panel Meeting 3 Materials FOR PRINT	E (printed – rec Nov 2017)	NA
48	Panel meeting 3 – post meeting materials – (2017-03-30) PM3 Meeting Summary - Transportation Needs_forNC	E (printed – rec Nov 2017)	NA

49	Panel meeting 3 – post meeting materials – CCA (2017-03-30) PM3 Meeting Summary - Transportation Needs_Final	E (printed – rec Nov 2017)	NA
50	Panel meeting 3 – post meeting materials – Implementation options from group 3	E (printed – rec Nov 2017)	NA
51	Panel meeting 3 – post meeting materials – PM3 D1 + Marian mtg_Maria	E (printed – rec Nov 2017)	NA
52	Panel meeting 3 – post meeting materials – PM3 D1 Chapter5 Implementation notes_MG	E (printed – rec Nov 2017)	NA
53	Panel meeting 3 – post meeting materials – PM3 D1 notes_Janet	E (printed – rec Nov 2017)	NA
54	Panel meeting 3 – post meeting materials – PM3 D2 notes_Janet	E (printed – rec Nov 2017)	NA
55	Panel meeting 3 – post meeting materials – PM3 D2 notes_Maria	E (printed – rec Nov 2017)	NA
56	Panel meeting 3 – post meeting materials – PM3 notes _ Anita	E (printed – rec Nov 2017)	NA
57	Panel meeting 3 – post meeting materials – PM3 notes _Becky	E (printed – rec Nov 2017)	NA
58	Panel meeting 3 – post meeting materials – PM3_Chpt Barriers&Solns	E (printed – rec Nov 2017)	NA
59	Panel meeting 3 – presentation – (2017-03-17) Transportation PM3 (day 1)	E (printed – rec Nov 2017)	NA

60	Panel meeting 3 – presentation – (2017-03-17) Transportation PM3 (day 2)	E (printed – rec Nov 2017)	NA
61	Panel meeting 3 – presentation – Key findings PM3	E (printed – rec Nov 2017)	NA
62	Panel meeting 4 – June 6-7, 2017 (Calgary) – meeting materials – (2017-05-26) Transport Narrative	E (printed – rec Nov 2017)	NA
63	Panel meeting 4 – meeting materials – (2017-05-29) CCA Transportation Panel Meeting 4 MaterialsV6	E (printed – rec Nov 2017)	NA
64	Panel meeting 4 – meeting materials – (2017-05-30) Aging and Transport - Full Report for Panel (no field codes)	E (printed – rec Nov 2017)	NA
65	Panel meeting 4 – meeting materials – (2017-05-30) Transportation Meeting Materials - Panel Meeting #4	E (printed – rec Nov 2017)	NA
66	Panel meeting 4 – post meeting materials – (2017-06-06) Transportation PM4 (day 1)	E (printed – rec Nov 2017)	NA
67	Panel meeting 4 – post meeting materials – (2017-06-08) Term Changes	E (printed – rec Nov 2017)	NA
68	Panel meeting 4 – post meeting materials – (2017-06-09) Chapter 5 Outline	E (printed – rec Nov 2017)	NA
69	Panel meeting 4 – post meeting materials – (2017-06-09) Chapter 5 Summary	E (printed – rec Nov 2017)	NA
70	Panel meeting 4 – post meeting materials – (2017-06-13) Key Findings Sorted by Chapter	E (printed – rec Nov 2017)	NA

71	Panel meeting 4 – post meeting materials – (2017-06-16) PM4 Meeting Summary - FINAL	E (printed – rec Nov 2017)	NA
72	Panel meeting 4 – post meeting materials – CCA (2017-06-14) PM4 Meeting Summary - Transportation Needs_AM	E (printed – rec Nov 2017)	NA
73	Panel meeting 4 – post meeting materials – CCA (2017-06-14) PM4 Meeting Summary - Transportation Needs_LM	E (printed – rec Nov 2017)	NA
74	Panel meeting 4 – post meeting materials – Chapter 5	E (printed – rec Nov 2017)	NA
75	Panel meeting 4 – post meeting materials – Chapter 6 Structure	E (printed – rec Nov 2017)	NA
76	Panel meeting 4 – post meeting materials – Key Findings discussion	E (printed – rec Nov 2017)	NA
77	Panel meeting 4 – post meeting materials – NC (2017-06-14) PM4 Meeting Summary - Transportation Needs	E (printed – rec Nov 2017)	NA
78	Panel meeting 4 – post meeting materials – PM4 notes_Anita	E (printed – rec Nov 2017)	NA
79	Panel meeting 4 – post meeting materials – PM4 notes_Becky	E (printed – rec Nov 2017)	NA
80	Panel meeting 4 – post meeting materials – PM4 notes_Maria	E (printed – rec Nov 2017)	NA
81	Panel meeting 4 – presentation – (2017-06-06) Transportation PM4 (day 1)	E (printed – rec Nov 2017)	NA

82	Panel meeting 4 – presentation – WA-511 PM4 Meeting Presentation (example)	E (printed – rec Nov 2017)	NA
83	<u>Panel meeting 5 – August 17-18, 2017 (Ottawa)</u> – Meeting materials – archive [Folder]	E (printed – rec Nov 2017)	NA
84	Panel meeting 5 – meeting materials – Final reviewer comments grid	E (printed – rec Nov 2017)	NA
85	Panel meeting 5 – meeting materials – PRINTING -Transportation Panel Meeting 5 Materials	E (printed – rec Nov 2017)	NA
86	Panel meeting 5 – meeting materials – Transportation Panel Meeting 5 Materials	E (printed – rec Nov 2017)	NA
87	Panel meeting 5 – post meeting materials – archive [Folder]	E (printed – rec Nov 2017)	NA
88	Panel meeting 5 – meeting materials – (2017-08-22) Transport Narrative	E (printed – rec Nov 2017)	NA
89	Panel meeting 5 – meeting materials – (2017-08-22) Updated Personas	E (printed – rec Nov 2017)	NA
90	Panel meeting 5 – meeting materials – (2017-08-22) Updated Personas_BC	E (printed – rec Nov 2017)	NA
91	Panel meeting 5 – meeting materials – (2017-08-28) Key Findings	E (printed – rec Nov 2017)	NA
92	Panel meeting 5 – meeting materials – Framework	E (printed – rec Nov 2017)	NA

93	Panel meeting 5 – meeting materials – Melnyk_Meeting Notes	E (printed – rec Nov 2017)	NA
94	Panel meeting 5 – meeting materials – Transport PM5 MG	E (printed – rec Nov 2017)	NA
95	Panel meeting 5 – presentation – (2017-08-02) Transport PM5 draft	E (printed – rec Nov 2017)	NA
96	Panel meeting 5 – presentation – askingCanadians_methodsImage	E (printed – rec Nov 2017)	NA
97	Panel meeting 5 – presentation – Figures	E (printed – rec Nov 2017)	NA
98	Transport web progress update	E (printed – rec May 2018)	NA
99	(2017-12-04) Sponsor briefing	E (printed – rec May 2018)	NA
100	(2018-01-18) Older Canadians on the Move - release analysis	E (printed – rec May 2018)	NA
101	(2018-05-02) Staff Meeting Presentation	E (printed – rec May 2018)	NA
102	transportaging_newsrelease_en [NEWS RELEASE]	E (printed – rec Dec 2017)	NA
103	transportaging_execsumm_en [EXECUTIVE SUMMARY]	E (printed – rec Dec 2017)	NA

DATA ANALYSIS

*QUALITATIVE ANALYSIS***DATA ANALYSIS:**

Analysis session #	Analysis Participants' Names	Date & Time of Analysis Session	Type of Minutes Recorded (Briefs recorded by team or audio recorded)	Key Discussion Items	Analysis Notes File Name
01	Matthew Falconer (MF)	November-December 2013		CCA methodology	Intern paper/ presentation
02	MF	December 2015 – May 2016		Pilot study	Analysis, paper, & presentations (ALDS 6102, CASDW 2016)
03	MF	April-May 2018		“Textography” for CASDW	Notes in Word, PPT slides

NOTEWORTHY EVENTS RELATED TO STUDY PROGRESS / FINDINGS (IF APPLICABLE):**(DESCRIBE ALL EVENTS/ISSUES THAT COULD INFLUENCE ANALYSIS/RESULTS.)**

<p>Research agreement re-negotiations (January to August 2017 – prompted by CCA) limited scope of initial plan by removing access to observing an active panel throughout it's time working together.</p>

DISSEMINATION**CONFERENCE PRESENTATIONS:**

<i>NAME OF CONFERENCE</i>	<i>RESULTS REPORTED</i>	<i>AUTHORS (INITIALS)</i>	<i>FILENAME</i>	<i>ACCEPTED</i>	
				<i>YES</i>	<i>NO</i>
<i>CASDW 2016</i>	<i>Pilot study</i>	<i>MF</i>		<i>YES</i>	
<i>CASDW 2018</i>	<i>Preliminary analysis – textography</i>	<i>MF</i>		<i>Yes</i>	

Appendix D: Research Ethics Board Approval



Research Compliance Office
511 Tory | 1125 Colonel By Drive
Ottawa, Ontario K1S 5B6
613-520-2600 Ext: 2517
ethics@carleton.ca

CERTIFICATION OF INSTITUTIONAL ETHICS CLEARANCE

The Carleton University Research Ethics Board-A (CUREB-A) has granted ethics clearance for the research project described below and research may now proceed.

CUREB-A is constituted and operates in compliance with the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans* (TCPS2).

Ethics Protocol Clearance ID: Project # 105296

Project Team Members: Graham Smart (Primary Investigator)
Matthew Falconer (Student - Phd)

Project Title: Informing government science and technology policy-making: The role of the Council of Canadian Academies discursive "translation" of expert knowledge [Matthew Falconer]

Funding Source (If applicable):

Effective: **January 31, 2017**

Expires: **January 31, 2018.**

Restrictions:

This certification is subject to the following conditions:

1. Clearance is granted only for the research and purposes described in the application.
2. Any modification to the approved research must be submitted to CUREB-A via a Change to Protocol Form. All changes must be cleared prior to the continuance of the research.
3. An Annual Status Report for the renewal of ethics clearance must be submitted and cleared by the renewal date listed above. Failure to submit the Annual Status Report will result in the closure of the file. If funding is associated, funds will be frozen.
4. A closure request must be sent to CUREB-A when the research is complete or terminated.
5. Should any participant suffer adversely from their participation in the project you are required to report the matter to CUREB-A.

Failure to conduct the research in accordance with the principles of the *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans 2nd edition* and the *Carleton University Policies and Procedures for the Ethical Conduct of Research* may result in the suspension or termination of the research project.

Please contact the Research Compliance Coordinators, at ethics@carleton.ca, if you have any questions or require a clearance certificate with a signature,

CLEARED BY:

Date: January 31, 2017

Andy Adler, PhD, Chair, CUREB-A

Shelley Brown, PhD, Vice-Chair, CUREB-A

Appendix E: Texts Described in Council Assessment Lifecycle Methodology

The following table shows the texts produced through the CCA's assessment process.

CALM Process #	Text(s) produced)	Count of New Texts	Actor responsible
1 - Define and select the proposal	Call for Proposals	1	Industry Canada (IC)
	Proposal Outline	1	IC & CCA Staff
	Full Proposal	1	Sponsor/Client
	Assessment Proposal - Staff Analysis	1	CCA Staff
	Assessment Proposal - Staff Analysis (2)	0	CCA staff
	Minister of Science referral	1	IC
	Preliminary Background & Situational Analysis	2	CCA Staff (w/Director of Assessments (DA))
	Acceptance of Question Letter	1	CCA staff
	Criteria for Board Approval, Board Approval of Assessment Questions	2	CCA staff & Board
	Communique of new question & Website text	2	Program Director (PD) & Communications Link (CL)
	Assessment Plan	1	PD
	Milestone 1 Package	1	CCA Staff & Board
2.1 - Chair & Panel Appointment	Advice on panel candidates email to Member Academies (MA)	1	PD & Research Associate (RA)
	Compositional guidelines, short-list of candidates	2	PD, RA, and Project Coordinator (PC)
	Short and Long term work plans	1	PD
	"Grid" or compositional guidelines	0	PD, MA liaison
	Board Approval for Chair Candidates	1	PD, DA, Board
	Information Package, recruitment script, Presidents email, panel email	4	PD
	Chair Acceptance Package, Chair Appointment communique (bio of Chair), Panel acceptance Package	3	PD, CL, PC
	Board Approval of Expert Panel	1	PD, DA, Board
	Agenda, meeting materials	2	PD, PC, RA, CL
	Media analysis	1	PC, CL
2.2 - Plan report, panel meeting 1	Meeting/Briefing Materials (literature review), presentations	2	PD & RA
	Invitation to Sponsor	1	DA, PD

	Talking Points/Q&A	1	PD, CL
	M2 Milestone Report	1	PD w/team
	Email to Panel, email to sponsor, Qs from sponsor, admin for panelists	1	PD w/team
3 - Report/Content Development - Detailed Outline	Panel meeting 1 minutes	1	PD w/team
	Shared understanding of the charge	1	PD
	Second draft/updated version of Assessment Plan, reset timeline as needed	0	PD
	Volunteer recognition letter 1	1	PC, PD
	Literature review, report outline, report narrative	3	RA, PD
	"Community map" for outreach	1	PD, CL, PC, RA
	Statement of work (contract)	1	PD, PC
	Meeting package, meeting presentations, hotel scoping/proposal, comms presentation, talking points	5	PC, OD (DA, Chair), RA, CL
	Web text	1	CL, PC
Milestone 3 Package	1	Assessment team	
4 - Report Content Development DRAFT 1 READY	Panel meeting 2 minutes	1	Assessment team
	Web text	1	CL, PC
	Detailed report outline	1	RA, PD
	Draft 1	1	RA, PC, PD
	PM 3 meeting package, presentations, hotel scoping, talking points, comms plan	5	Assessment Team (DA, Corporate team)
	Milestone 4 materials	1	Assessment Team
5 - Report Content Development - DRAFT 2 READY, substantive editing & prep for peer-review	Panel meeting 3 minutes	1	PD, PC
	Progress Report	1	PC, CL
	Draft 2.0	1	RA, PD
	Scope of work	1	PD, Comms Director
	Peer review compositional guidelines, short-list, reviewer acceptance package, criteria for Board approval	4	PD, DA, RA, PC
	Panel Package for PM4 (agenda, goals, report draft 2.0)	1	PD, RA, PC, DA, Chair, CL
	Milestone 5 materials (Milestone report)	1	Assessment team, DA
6 - Peer review, pre-publication, & Launch planning	Panel meeting 4 minutes	1	PD, PC, RA
	Report narrative, draft for teleconference 1 sign-off	2	PD, RA, PC, CL
	Publication timeline "Launch & Dissemination plan"	1	PD, Comms Director, CL
	Reviewer instructions & info. & role package, "draft for peer review", peer review monitor bio	3	PD, RA, PC, CL
	Draft for peer-review - fact checked	1	PD, RA, PC
	Figure permission tracker (aka "the green monster")	1	CL, PD, PC, RA supports
	Launch and Dissemination Plan	1	PD & CommsDir.

	Peer review comment grid	1	PD, RA, PC
	Panel Meeting 5 Panel Package	1	PD, PC, RA, CL, DA, CommsDir, Chair
	meeting 5 minutes, letter of attestation, peer review comment grid w/actions, web text/progress report	4	Assessment team
	Draft - Post Review (3-6weeks)	1	RA, PC, PD
	Panel Package (post review)	1	Assessment team, panel
	Report draft for publication	1	PD, RA, PC, & Senior Bilingual Publications Specialist (SBPS)
	Milestone 6 materials (deliverables listed above)	1	Assessment team & DA
7 - Publication, Launch, & Distribution	Sponsor briefing package, email to sponsor, Board approval	3	Assessment Team
	2 tasks: English layout text; translated text	2	external consultants layout & translation
	Talking points (for sponsor briefing); 'embargo copy' of report	2	SBPS, team, panel
	Report in focus, news release, email for panel, and generic email	4	CL, PD, CommsDir, RA, PC
	Board approval of public release	1	PD
	Sponsor PowerPoint	1	PD, PC, RA, Chair/Panel, sponsor
	Milestone 7 Report	1	Assessment team, comms team, DA, president
8 - Dissemination, Impact Monitoring, and Lessons Learned	Release Analysis	1	CL/Comms (w/PD, PC, RA); DA reviews
	Lessons Learned Minutes	1	PD, PC, RA, Comms, DA
	Staff PPT - Findings	1	PD, RA
	Project Close-Out Report	1	PC, PD, RA, CL
	Milestone 8 Materials	1	PD, PC, RA, CL, DA
9 - Project Close Out	Impact data, Impact report (2 page summary by Impact Committee)	2	PD, RA, PC, CL
	Milestone 9 materials	1	PD, corporate team, DA, CFO

Total

113

Appendix F: References from *Older Canadians on the Move*

The following citations were taken from the CCA's final report titled *Older Canadians on the Move* and sorted according to pre-determined categories of types of evidence that are used within the CCA.

Chapter 1 References

There were 13 sources referred to in chapter 1, including 4 academic, 6 grey literature, 3 data sources, and 0 news/media articles.

Academic Literature (n=4)

1. Iversen, T. N., Larsen, L., & Solem, P. E. (2009). A conceptual analysis of ageism. *Nordic Psychology*, 61(3), 4-22.
2. Palmore, E. (1999). *Ageism: Negative and Positive*, 2nd Edition. New York (NY): Springer Publishing Company.
3. Pruitt, J. & Adlin, T. (2010). *The Persona Lifecycle. Keeping People in Mind Throughout Product Design*. San Francisco (CA): Elsevier.
4. Saxon, S. V., Etton, M. J., & Perkins, E. A. (2014). *Physical Change and Aging: A guide for the Helping Professions*. New York (NY): Springer Publishing Company.

Grey Literature (n=6)

1. GC (Government of Canada). (2014). *Canadian Human Rights Act*. Ottawa (ON): GC.
2. GC (Government of Canada). (2015b). *Pathways: Connecting Canada's Transportation System to the World. Volume 1*. Ottawa (ON): GC.
3. GC (Government of Canada). (2015c). *Canada Transportation Act*. Ottawa (ON): GC.
4. TRB (Transportation Research Board). (2004). *Transportation in an Aging Society. A Decade of Experience. Technical Papers and Reports from a Conference November 7-9, 1999*. Washington (DC): Transportation Safety Board of the National Academies.
5. UNDP (United Nations Development Program). (2010). *A Review of International Best Practice in Accessible Public Transportation for Persons with Disabilities*. Kuala Lumpur, Malaysia: UNDP.
6. WHO (World Health Organization). (2017c). *Disabilities*. Retrieved August 2017, from <http://www.who.int/topics/disabilities/en/>.

Data Sources (n=3)

1. StatCan (Statistics Canada). (2015c). *Canada's Population Estimates: Age and Sex, July 1, 2015*. Retrieved May 2016, from <http://www.statcan.gc.ca/daily-quotidien/150929/dq150929b-eng.htm>.

2. StatCan (Statistics Canada). (2015e). National Seniors Day... by the Numbers. Retrieved May 2016, from http://www.statcan.gc.ca/eng/dai/smr08/2014/smr08_191_2014#a1.
3. StatCan (Statistics Canada). (2016c). *CANSIM Table 427-0007. Travel by Canadians to Foreign Countries, Top 15 Countries Visited Annual*. Ottawa (ON): StatCan.

Media Reports (n=0)

Chapter 2 References

The following citations were taken from the CCA's final report titled *Older Canadians on the Move* and sorted according to pre-determined categories of types of evidence that are used within the CCA. There were 50 sources referred to in chapter 2, including 1 academic, 46 grey literature, 0 data sources, and 3 news/media articles.

Academic Literature (n=1)

1. Oum, T., Stanbury, W., & Tretheway, M. (1991). Airline deregulation in Canada and its economic effects. *Transportation Journal*, 30(4), 4-22.

Grey Literature (n=46)

1. Angus Reid Institute. (2015). *Disability and Accessibility: Canadians See Significant Room for Improvement in Communities Where They Live*. Vancouver (BC): Angus Reid Institute.
2. Ashby, R. C. (2015). *Comparative Analysis of Canadian and U.S. Approaches to Accessible Transportation Standards: Summary Report Submitted to the Canada Transportation Act Review*. Washington (DC): U.S. Department of Transportation.
3. Australian Government. (2016). *Disability Discrimination Act 1992*. Canberra, Australia: Australian Government.
4. Baker, D. (2006). *Moving Backwards: Canada's State of Transportation Accessibility in an International Context*. Winnipeg (MB): Council of Canadians with Disabilities.
5. CATSA (Canadian Air Transport Security Authority). (n.d.-b). About Us. Retrieved June 2017, from <http://www.catsa.gc.ca/about-us>.
6. CCD (Council of Canadians with Disabilities). (2014). *Building an Inclusive and Accessible Canadian Transportation System*. CCD Submission to Canada Transportation Act Review. Winnipeg (MB): CCD.
7. City of Toronto. (2017). *Union Station Revitalization Milestones*. Retrieved June 2017, from <http://www1.toronto.ca/wps/portal/contentonly?vgnextoid=8515962c8c3f0410VgnVCM10000071d60f89RCRD>.
8. CTA (Canadian Transportation Agency). (1998). *Code of Practice: Passenger Rail Car Accessibility and Terms and Conditions of Carriage by Rail of Persons with Disabilities*. Ottawa (ON): CTA.
9. CTA (Canadian Transportation Agency). (2007). *Code of Practice: Passenger Terminal Accessibility*. Ottawa (ON): CTA.

10. CTA (Canadian Transportation Agency). (2014a). *Ferry Accessibility for Persons with Disabilities Code of Practice*. Ottawa (ON): CTA.
11. CTA (Canadian Transportation Agency). (2014b). *Strategic Plan 2014–2017: Transforming the Way We Work*. Ottawa (ON): CTA.
12. CTA (Canadian Transportation Agency). (2015a). Monitoring the Industry for Accessibility. Retrieved August 2016, from <https://www.otc-cta.gc.ca/eng/compliance-and-enforcement>.
13. CTA (Canadian Transportation Agency). (2015c). FAQ: Complaints. Retrieved July 2016, from <https://services.otc-cta.gc.ca/eng/faq-complaints#a7>.
14. CTA (Canadian Transportation Agency). (2015d). *100 Years at the Heart of Transportation*. Ottawa (ON): CTA.
15. CTA (Canadian Transportation Agency). (2016c). *Canadian Transportation Agency. Annual Report 2015–2016*. Ottawa (ON): CTA.
16. CTA (Canadian Transportation Agency). (2016d). Acts and Regulations. Retrieved June 2016, from <https://www.otc-cta.gc.ca/eng/acts-and-regulations>.
17. CTA (Canadian Transportation Agency). (2016e). Partner Organizations. Retrieved June 2016, from <https://www.otc-cta.gc.ca/eng/partnerorganizations>.
18. CTA (Canadian Transportation Agency). (2016f). Accessibility for Air Carriers: About Accessibility Standards. Retrieved August 2016, from <https://www.otc-cta.gc.ca/eng/accessibility-aircraft>.
19. CTA (Canadian Transportation Agency). (2017a). Mandate, Tools and Values. Retrieved March 2017, from <https://www.otc-cta.gc.ca/eng/mandatetools-values>.
20. CTA (Canadian Transportation Agency). (2016b). Chair and CEO Scott Streiner Addresses the Economic Club of Canada on May 26, 2016. Retrieved February 2017, from <https://www.otc-cta.gc.ca/eng/content/movecanadian-transportation-agency-and-opportunities-national-transportationsystem>.
21. DOJ (U.S. Department of Justice). (2009). *Americans with Disabilities Act of 1990, As Amended*. Washington (DC): DOJ.
22. ESDC (Employment and Social Development Canada). (2017). *Accessible Canada*. Ottawa (ON): ESDC.
23. EU (European Union). (2006). *Regulation (EC) No 1107/2006 of the European Parliament and of the Council of 5 July 2006 Concerning the Rights of Disabled Persons and Persons with Reduced Mobility When Travelling by Air*. Brussels, Belgium: EU.
24. FCM (Federation of Canadian Municipalities). (2006). *Your Guide to Municipal Institutions in Canada*. Ottawa (ON): FCM.
25. GC (Government of Canada). (2006). *Motor Vehicle Transport Act*. Ottawa (ON): GC.
26. GC (Government of Canada). (2010). Voluntary Codes Guide – What Is a Voluntary Code? Retrieved August 2016, from <https://www.ic.gc.ca/eic/site/oca-bc.nsf/eng/ca00963.html>.
27. GC (Government of Canada). (2014). *Canadian Human Rights Act*. Ottawa (ON): GC.

28. GC (Government of Canada). (2015b). *Pathways: Connecting Canada's Transportation System to the World. Volume 1*. Ottawa (ON): GC.
29. GC (Government of Canada). (2015c). *Canada Transportation Act*. Ottawa (ON): GC.
30. GC (Government of Canada). (2015b). *Pathways: Connecting Canada's Transportation System to the World. Volume 1*. Ottawa (ON): GC.
31. GC (Government of Canada). (2015c). *Canada Transportation Act*. Ottawa (ON): GC.
32. GC (Government of Canada). (2017c). *Federal Budget 2017: Building a Strong Middle Class*. Ottawa (ON): GC.
33. Greyhound. (2016a). About Greyhound. Retrieved August 2016, from <https://www.greyhound.ca/en/about/default.aspx>.
34. Industry Canada. (2011). *Canada's Federal Tourism Strategy: Welcoming the World*. Ottawa (ON): Industry Canada.
35. Padova, A. (2005). *The Current State of Transportation in Canada: Road, Rail, Water and Air*. Ottawa (ON): Library of Parliament.
36. Prime Minister of Canada. (2016). Statement by the Prime Minister on the International Day of Persons with Disabilities. Retrieved March 2017, from <http://pm.gc.ca/eng/news/2016/12/03/statement-prime-ministerinternational-day-persons-disabilities>.
37. SCC (Supreme Court of Canada). (2007). *Council of Canadians with Disabilities v. VIA Rail Canada Inc.* Ottawa (ON): SCC.
38. Sylvestre, G., Christopher, G., & Snyder, M. (2006). *The Mobility Needs and Transportation Issues of the Aging Population in Rural Manitoba*. Winnipeg (MB): Manitoba Seniors and Healthy Aging Secretariat.
39. TC (Transport Canada). (2010). National Airports Policy. Retrieved August 2016, from <https://www.tc.gc.ca/eng/programs/airports-policy-nas-1129.htm>.
40. TC (Transport Canada). (2011). *Intercity Bus Code of Practice*. Ottawa (ON): TC.
41. TC (Transport Canada). (2013). What We Do. Retrieved June 2016, from <http://www.tc.gc.ca/eng/aboutus-whatwedo.htm>.
42. TC (Transport Canada). (2016b). Transportation 2030 — A Strategic Plan for the Future of Transportation in Canada. Retrieved March 2017, from <https://www.tc.gc.ca/eng/future-transportation-canada.html>.
43. TC (Transport Canada). (2016c). List of Regulations. Retrieved August 2017, from <https://www.tc.gc.ca/eng/acts-regulations/regulations.htm>.
44. TC (Transport Canada). (2016d). Rail Safety. Retrieved May 2017, from <https://www.tc.gc.ca/eng/railsafety/menu.htm#s3>.
45. TC (Transport Canada). (2016e). Accessible Transportation. Retrieved August 2016, from <http://www.tc.gc.ca/eng/policy/acc-accf-menu.htm>.

46. TSB (Transportation Safety Board of Canada). (2016). About the TSB. Retrieved July 2017, from <http://www.tsb.gc.ca/eng/qui-about/index.asp>.

Data Sources (n=0)

Media Reports (n=3)

1. Press, J. (2017). Ottawa Unveils \$2.1B in Spending on Transportation Corridors and More. Retrieved July 2017, from <http://www.cbc.ca/beta/news/business/infrastructure-spending-ports-airports-borders-1.4189359>.
2. Rabson, M. (2017, May 16). Passenger Rights Bill Stops Airlines from Bumping Passengers Without Consent, The Globe and Mail.
3. Tierney, D. (2009, June 20). Cruise Ships Chart New Course to Accessibility, The Toronto Star.

Chapter 3 References

The following citations were taken from the CCA's final report titled *Older Canadians on the Move* and sorted according to pre-determined categories of types of evidence that are used within the CCA. There were 102 sources referred to in chapter 3, including 38 academic, 37 grey literature, 24 data sources, and 3 news/media articles.

Academic Literature (n=38)

1. Adler, G. & Rottunda, S. (2006). Older adults' perspectives on driving cessation. *Journal of Aging Studies, 20*, 227-235.
2. Alén, E., Domínguez, T., & Losada, N. (2012). New Opportunities for the Tourism Market: Senior Tourism and Accessible Tourism. In M. Kasimoglu (Ed.), *Visions for Global Tourism Industry — Creating and Sustaining Competitive Strategies* (Vol. 127). Rijeka, Croatia: In Tech.
3. Alén, E., Losada, N., & Domínguez, T. (2016). The impact of ageing on the tourism industry: An approach to the senior tourist profile. *Social Indicators Research, 127*(1), 303-322.
4. Amer, T., Anderson, J. A. E., Campbell, K. L., Hasher, L., & Grady, C. L. (2016a). Age differences in the neural correlates of distraction regulation: A network interaction approach. *NeuroImage, 139*, 231-239.
5. Amer, T., Campbell, K. L., & Hasher, L. (2016b). Cognitive control as a double-edged sword. *Trends in Cognitive Science, 20*(12), 905-915.
6. Asher, L., Aresu, M., Falaschetti, E., & Mindell, J. (2012). Most older pedestrians are unable to cross the road in time: A cross-sectional study. *Age and Ageing, 41*, 690-694.
7. Best, J. R., Liu-Ambrose, T., Boudreau, R. M., Ayonayon, H. N., Satterfield, S., Simonsick, E. M., . . . Rosano, C. (2016). An evaluation of the longitudinal, bidirectional associations

- between gait speed and cognition in older women and men. *The Journals of Gerontology: Series A*, 71(12), 1616-1623.
8. Butler, R. N. (1969). Age-ism: Another form of bigotry. *The Gerontologist* 9, 243-246.
 9. Caspi, A. (1984). Contact hypothesis and inter-age attitudes: A field study of cross-age contact. *Social Psychology Quarterly*, 47(1), 74-80.
 10. Chihuri, S., Mielenz, T. J., DiMaggio, C. J., Betz, M. E., DiGuseppi, C., Jones, V. C., & Li, G. (2016). Driving cessation and health outcomes in older adults. *Journal of the American Geriatrics Society*, 64(2), 332-341.
 11. Cohen, J. A., Verghese, J., & Zwerling, J. L. (2016). Cognition and gait in older people. *Maturitas*, 93, 73-77.
 12. Cuddy, A. J. C. & Fiske, S. T. (2002). Doddering but Dear: Process, Content, and Function in Stereotyping of Older Persons. In T. D. Nelson (Ed.), *Ageism: Stereotyping and Prejudice Against Older Persons*. Cambridge (MA): The MIT Press.
 13. Cuddy, A. J. C., Norton, M. I., & Fiske, S. T. (2005). This old stereotype: The pervasiveness and persistence of the elderly stereotype. *Journal of Social Issues*, 61(2), 267-285.
 14. Davey, J. A. (2007). Older people and transport: Coping without a car. *Ageing & Society*, 27, 49-65.
 15. Dobbs, B. M. (2008). Aging Baby Boomers — A blessing or challenge for driver licensing authorities. *Traffic Injury Prevention*, 9(4), 379-386.
 16. Edwards, J. D., Lunsman, M., Perkins, M., Rebok, G. W., & Roth, D. L. (2009). Driving cessation and health trajectories in older adults. *The Journals of Gerontology: Series A*, 64(12), 1290-1295.
 17. Forrester. (2016). *2017 Predictions: Dynamics That Will Shape the Future in the Age of the Customer*. Cambridge (MA): Forrester.
 18. Hetzner, S., Tenckhoff-Eckhardt, A., Slysach, A., & Held, P. (2014). Promoting digital literacy for seniors, the aptitude of tablet-pcs. *eLearning Papers*, 38, 1-12.
 19. Hung, K., Petrick, J. F., & O'Leary, J. T. (2007). *Do We Change Our Travel Behaviours as We Get Older? An Investigation on the Variations of Travel Behaviour Across Different Age Cohorts*. Paper presented at the Travel and Tourism Research Associated Conference, Las Vegas (NV).
 20. Jang, S. & Ham, S. (2009). A double-hurdle analysis of travel expenditure: Baby boomer seniors versus older seniors. *Tourism Management*, 30, 372-380.
 21. Joseph, A. E. & Fuller, A. M. (1991). Towards an integrative perspective on the housing, services and transportation implications of rural aging. *Canadian Journal on Aging*, 10(2), 127-148.
 22. Kirkland, S. A., Griffith, L. E., Menec, V., Wister, A., Payette, H., Wolfson, C., & Raina, P. S. (2015). Mining a unique Canadian resource: The Canadian Longitudinal Study on Aging. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 34(3), 366-377.

23. Lee, C.-F. & King, B. (2016). Determinants of attractiveness for a seniors-friendly destination: A hierarchical approach. *Current Issues in Tourism*, 2016, 1-20.
24. Marottloi, R. A., Mendes de Leon, C. F., Glass, T. A., Williams, C. S., Cooney Jr., L. M., Berkman, L. F., & Tinetti, M. E. (1997). Driving cessation and increased depressive symptoms: Prospective evidence for the New Haven EPESE. *Journal of the American Geriatrics Society*, 45(2), 202-206.
25. McDonough, C. C. (2016). The effect of ageism on the digital divide among older adults. *HSOA Journal of Gerontology & Geriatric Medicine*, 2(1), 100008.
26. Metz, D. H. (2000). Mobility of older people and their quality of life. *Transport Policy*, 7, 149-152.
27. Musselwhite, C. & Haddad, H. (2008). *A Grounded Theory Exploration Into the Driving and Travel Needs of Older People*. Paper presented at the 40th Universities Transport Study Group Conference, Portsmouth, United Kingdom.
28. Musselwhite, C. & Haddad, H. (2010). Mobility, accessibility and quality of later life. *Quality in Ageing and Older Adults*, 11(1), 25-37.
29. Pesonen, J., Komppula, R., & Riihinen, A. (2015). Typology of senior travellers as users of tourism information technology. *Information Technology & Tourism*, 15(3), 233-252.
30. Porter, C. E. & Donthu, N. (2006). Using the technology acceptance model to explain how attitudes determine Internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, 59(9), 999-1007.
31. Quan-Hasse, A., Martin, K., & Schreurs, K. (2016). Interviews with digital seniors: ICT use in the context of everyday life. *Information, Communication & Society*, 19(5), 691-707.
32. Raina, P. S., Wolfson, C., Kirkland, S. A., Griffith, L. E., Oremus, M., Patterson, C., . . . Brazil, K. (2009). The Canadian Longitudinal Study on Aging (CLSA). *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 28(03), 221-223.
33. Rapoport, M. J., Cameron, D. H., Sanford, S., & Naglie, G. (2017). A systematic review of intervention approaches for driving cessation in older adults. *International Journal of Geriatric Psychiatry*, 32(5), 484-491.
34. Rowe, G., S., V., Haster, L., & Lenartowicz, A. (2006). Attentional disregulation: A benefit for implicit memory. *Psychology of Aging*, 21(4), 826-830.
35. Schwartz, L. K. & Simmons, J. P. (2001). Contact quality and attitudes toward the elderly. *Educational Gerontology*, 27(2), 127-137.
36. Sorond, F. A., Cruz-Almeida, Y., Clark, D. J., Viswanathan, A., Scherzer, C. R., De Jager, P., . . . Lipsitz, L. A. (2015). Aging, the central nervous system, and mobility in older adults: Neural mechanisms of mobility impairment. *The Journals of Gerontology: Series A*, 170(12), 1526-1532.
37. Windsor, T. D., Anstey, K. J., Butterworth, P., Luszcz, M. A., & Andrews, G. R. (2007). The role of perceived control in explaining depressive symptoms associated with driving cessation in a longitudinal study. *The Gerontologist*, 47(2), 215-223.

38. Wu, Y. H., Damnée, S., Kerhervé, H., Ware, C., & Rigaud, A. S. (2015). Bridging the digital divide in older adults: A study from an initiative to inform older adults about new technologies. *Journal of Clinical Interventions in Aging*, 9(10), 193-200.

Grey Literature (n=37)

1. AGE (AGE Platform Europe). (2002). *Door-to-Door Transport Systems: Older People's Point of View*. Brussels, Belgium: AGE.
2. Alzheimer Society of Canada. (2013). A New Way of Looking at the Impact of Dementia in Canada. Retrieved June 2016, from <http://www.alzheimer.ca/en/peel/Get-involved/Raise-your-voice/A-new-way-of-looking-at-dementia>.
3. Alzheimer Society of Canada. (2017). Latest Information and Statistics. Retrieved August 2017, from <http://www.alzheimer.ca/en/Get-involved/Advocacy/Latest-info-stats>.
4. Anderson, M. & Perrin, A. (2017). *Tech Adoption Climbs Among Older Adults*. Washington (DC): Pew Research Center.
5. Candrive. (n.d.). Frequently Asked Questions. Retrieved June 2017, from <http://www.candrive.ca/faqs.html>.
6. Council of Deputy Ministers (Council of Deputy Ministers Responsible for Transportation and Highway Safety). (2010). *Intercity Bus Services Task Force Final Report*. Ottawa (ON): Council of Deputy Ministers.
7. Crystal Cruises. (2017). Northwest Passage Explorer. Rooms & Fares. Retrieved June 2017, from http://www.crystalcruises.com/voyage/details/northwestpassage-explorer-7320#rooms_fares.
8. Deloitte. (2010). *Hospitality 2015. Game Changers or Spectators?* London, United Kingdom: Deloitte.
9. Department for Transport. (2014). *How People Travel — Air*. London, United Kingdom: Department for Transport.
10. European Commission. (2013). *Economic Impact and Travel Patterns of Accessible Tourism in Europe — Final Report*. Brussels, Belgium: European Commission.
11. Frye, A. (2015a). *Comparing Canadian and European Approaches to Transportation Accessibility: Final Report Submitted to the Canada Transportation Act Review*. London, United Kingdom: Ann Frye Limited.
12. Frye, A. (2015b). *Capitalising on the Grey-Haired Globetrotters*. Paris, France: OECD.
13. GC (Government of Canada). (2015a). Life in a First Nations Remote and/or Isolated Community. Retrieved May 2017, from <https://www.canada.ca/en/health-canada/services/nursing-careers/living-remote-or-isolatedcommunity/life-first-nations-remote-or-isolated-community.html>.
14. Gilhooly, M., Hamilton, K., O'Neill, M., Gow, J., Webster, N., Pike, F., & Bainbridge, C. (2002). *Transport and Ageing: Extending Quality of Life for Older People Via Public and Private Transport*. Glasgow, Scotland: Economic & Social Research Council.

15. Gov. of BC (Government of British Columbia). (n.d.). Senior Drivers. Retrieved August 2017, from <http://www2.gov.bc.ca/gov/content/transportation/driving-and-cycling/driver-medical/driver-medical-fitness/senior-drivers>.
16. Gov. of BC (Government of British Columbia). (2017). Highway 16 Transportation Action Plan. Retrieved March 2017, from <http://www2.gov.bc.ca/gov/content/transportation/transportationreportsandreference/reportsstudies/planningstrategieconomic/highway16actionplan>.
17. Gov. of ON. (2017). Renew a G Driver's Licence: 80 Years and Over. Retrieved June 2017, from <https://www.ontario.ca/page/renew-g-drivers-licence-80-years-and-over>.
18. Green, M. (2013). Visual Forensics of Older Drivers. Retrieved July 2016, from <http://www.visualexpert.com/Resources/olderdrivers.html>.
19. Greyhound. (2016a). About Greyhound. Retrieved August 2016, from <https://www.greyhound.ca/en/about/default.aspx>.
20. Hudon, T. & Milan, A. (2016). *Senior Women*. Ottawa (ON): Statistics Canada.
21. ICC (Inuit Circumpolar Council). (2008). *The Sea Ice Is Our Highway: An Inuit Perspective on Transportation in the Arctic*. Ottawa (ON): ICC.
22. ICC (Inuit Circumpolar Council). (2014). *The Sea Ice Never Stops: Circumpolar Inuit Reflections on Sea Ice Use and Shipping in Inuit Nunaat*. Ottawa (ON): ICC.
23. Mandala Research LLC. (2015). *Research Among Adults with Disabilities*. Chicago(IL): Open Doors Organization.
24. Mayhew, D., Hing, M. M., & Vanlaar, W. (2016). *Progression Through Graduated Driver Licensing Programs*. Ottawa (ON): Traffic Injury Research Foundation.
25. NIDCD (National Institute on Deafness and Other Communication Disorders). (2016). Age-Related Hearing Loss. Retrieved August 2016, from <https://www.nidcd.nih.gov/health/age-related-hearing-loss>.
26. NZMBIE (New Zealand Ministry of Business, Innovation and Employment). (2009). *Outbound Travel by New Zealand Residents*. Wellington, New Zealand: NZMBIE.
27. O'Donnell, V., Wendt, M., & National Association of Friendship Centres. (2017). *Aboriginal Seniors in Population Centres in Canada*. Ottawa (ON): Statistics Canada.
28. PHAC (Public Health Agency of Canada). (2011). *Age-Friendly Rural and Remote Communities: A Guide*. Ottawa (ON): PHAC.
29. Roden, P. (2013). *Aging in Place and Environmental Press*. Retrieved September 2017, from <http://aginginplace.com/aging-in-place-and-environmentalpress/>.
30. Shields, M. (2004). *Use of Wheelchairs and Other Mobility Support Devices*. Ottawa (ON): Statistics Canada.
31. TC (Transport Canada). (2006). *Sustainable Transportation in Small and Rural Communities*. Ottawa (ON): TC.
32. TC (Transport Canada). (2016a). *Transportation in Canada 2015*. Ottawa (ON): TC.

33. TC (Transport Canada). (2016b). *Transportation 2030 — A Strategic Plan for the Future of Transportation in Canada*. Retrieved March 2017, from <https://www.tc.gc.ca/eng/future-transportation-canada.html>.
34. TC (Transport Canada). (2016g). *Minister-Led Roundtable: The North*. Ottawa (ON): TC.
35. TC (Transport Canada). (2016h). *Minister-Led Indigenous Roundtable on the Future of Transportation*. Ottawa (ON): TC.
36. Turcotte, M. & Schellenberg, G. (2006). *A Portrait of Seniors in Canada*. Ottawa (ON): Statistics Canada.
37. Turcotte, M. (2012). *Profile of Seniors' Transportation Habits*. Ottawa (ON): Statistics Canada.

Data Sources (n=24)

1. Bank of Canada. (n.d.). Inflation Calculator. Retrieved September 2017, from <http://www.bankofcanada.ca/rates/related/inflation-calculator/>.
2. RBC (Royal Bank of Canada). (2015). Three Top Retirement Realities for Canadian Boomers: 2015 RBC Retirement Myths & Realities Poll. Retrieved July 2016, from <http://www.rbc.com/newsroom/news/2015/20150806-retirement-myths.html>.
3. StatCan (Statistics Canada). (n.d.). *Remote Communities Database*. Retrieved April 2017, from <https://www2.nrcan-rncan.gc.ca/eneene/sources/rcdbce/index.cfm?fuseaction=admin.home1>.
4. StatCan (Statistics Canada). (2009). *Canadian Community Health Survey — Healthy Aging*. Ottawa (ON): StatCan.
5. StatCan (Statistics Canada). (2013). *Aboriginal Peoples in Canada: First Nations People, Métis and Inuit*. Ottawa (ON): StatCan.
6. StatCan (Statistics Canada). (2014). *Study: Emerging Trends in Living Arrangements and Conjugal Unions for Current and Future Seniors, 1981 to 2011*. Ottawa (ON): StatCan.
7. StatCan (Statistics Canada). (2015a). Rural Area (RA). Retrieved May 2017, from <http://www12.statcan.ca/census-recensement/2011/ref/dict/geo042-eng.cfm>.
8. StatCan (Statistics Canada). (2015b). *Study: Grandparents Living with their Grandchildren, 2011*. Ottawa (ON): StatCan.
9. StatCan (Statistics Canada). (2015c). Canada's Population Estimates: Age and Sex, July 1, 2015. Retrieved May 2016, from <http://www.statcan.gc.ca/daily-quotidien/150929/dq150929b-eng.htm>.
10. StatCan (Statistics Canada). (2015d). *CANSIM Table 111-0035. Seniors' Characteristics, by Age Group and Source of Income*. Ottawa (ON): StatCan.
11. StatCan (Statistics Canada). (2015e). National Seniors Day... by the Numbers. Retrieved May 2016, from http://www.statcan.gc.ca/eng/dai/smr08/2014/smr08_191_2014#a1.

12. StatCan (Statistics Canada). (2016a). *Age (131) and Sex (3) for the Population of Canada and Forward Sortation Areas, 2011 Census*. Ottawa (ON): StatCan.
13. StatCan (Statistics Canada). (2016b). *CANSIM Table 427-0009. Travel by Canadians to the United States, Top 15 States Visited Annual*. Ottawa (ON): StatCan.
14. StatCan (Statistics Canada). (2016c). *CANSIM Table 427-0007. Travel by Canadians to Foreign Countries, Top 15 Countries Visited Annual*. Ottawa (ON): StatCan.
15. StatCan (Statistics Canada). (2016d). *CANSIM Table 051-0001. Estimates of Population, by Age Group and Sex for July 1, Canada, Provinces and Territories, Annual*. Ottawa (ON): StatCan.
16. StatCan (Statistics Canada). (2016e). *CANSIM Table 282-0002. Labour Force Survey Estimates (LFS), by Sex and Detailed Age Group*. Ottawa (ON): StatCan.
17. StatCan (Statistics Canada). (2017a). *CANSIM Table 426-0025. Travel Survey of Residents of Canada, Domestic Trips, Expenditures and Nights, in Canada, by Traveller Characteristics and Trip Duration*. Ottawa (ON): StatCan.
18. StatCan (Statistics Canada). (2017b). *Population by Broad Age Groups and Sex, 2016 Counts for Both Sexes, Canada, Provinces and Territories, 2016 Census — 100% Data*. Ottawa (ON): StatCan.
19. StatCan (Statistics Canada). (2017c). *Population Trends by Age and Sex*. Ottawa (ON): StatCan.
20. StatCan (Statistics Canada). (2017d). *CANSIM Table 206-0041. Low Income Statistics by Age, Sex and Economic Family Type, Canada, Provinces and Selected Census Metropolitan Areas (CMAs)*. Ottawa (ON): StatCan.
21. StatCan (Statistics Canada). (2017e). *CANSIM Table 206-0052. Income of Individuals by Age Group, Sex and Income Source, Canada, Provinces and Selected Census Metropolitan Areas*. Ottawa (ON): StatCan.
22. TC (Transport Canada). (2012). *Transportation in Canada 2011. Statistical Addendum*. Ottawa (ON): TC.
23. TC (Transport Canada). (2014). *Transportation in Canada 2013. Statistical Addendum*. Ottawa (ON): TC.
24. TC (Transport Canada). (2016f). *Transportation in Canada 2015. Statistical Addendum*. Ottawa (ON): TC.

Media Reports (n=3)

1. Brown, C. (2016). Massive Cruise Ship Brings New Era of Arctic Tourism to Cambridge Bay. Retrieved June 2017, from <http://www.cbc.ca/news/canada/north/massive-cruise-ship-brings-new-era-of-arctic-tourism-tocambridge-bay-1.3739491>.
2. Hopper, T. (2016). 'Do You Live Here All Year?' Nunavut Community Invaded by Largest Cruise Ship in Arctic History. Retrieved June 2017, from <http://nationalpost.com/news/do->

[you-live-here-all-year-nunavut-communityinvaded-by-largest-cruise-ship-in-arctic-history/wcm/1294950b-60c9-490c-8b28-27b91d6ca949.](http://www.cbc.ca/news/technology/seniors-smartphone-usage-low-among-canadians-1.2504945)

3. The Canadian Press. (2014). Seniors' Smartphone Usage Low Among Canadians. Retrieved February 2017, from <http://www.cbc.ca/news/technology/seniors-smartphone-usage-low-among-canadians-1.2504945>.

Chapter 4 References

The following citations were taken from Chapter 4 of the CCA's final report titled *Older Canadians on the Move* and sorted according to pre-determined categories of types of evidence that are used within the CCA. There were 122 sources referred to in chapter 4, including 15 academic, 97 grey literature, 10 news articles, and 0 data sources.

Academic Literature (n=15)

1. Davies, D. K., Stock, S. E., Holloway, S., & Wehmeyer, M. L. (2010). Evaluating a GPS-based transportation device to support independent bus travel by people with intellectual disability. *Intellectual and Developmental Disabilities, 48*(6), 454-463.
2. Dickerson, A. E., Molnar, L. J., Eby, D. W., Adler, G., Bedard, M., Berg-Weger, M., . . . Trujillo, L. (2007). Transportation and aging: A research agenda for advancing safe mobility. *The Gerontologist, 47*(5), 578-590.
3. Dimitrakopoulos, G. & Demestichas, P. (2010). Intelligent transportation systems. *IEEE Vehicular Technology Magazine, 5*(1), 77-84.
4. Faruk, M., Ormerod, M., Newton, R., MacLennan, H., & Abbas, M. Y. (2008). Tactile Paving a Necessary Intervention, but Does It Suit Everyone? In P. D. Bust (Ed.), *Contemporary Ergonomics 2008*. Chippenham, United Kingdom: Taylor & Francis.
5. Finucane, M. L. (2008). Emotion, affect, and risk communication with older adults: Challenges and opportunities. *Journal of Risk Research, 11*(8), 983-997.
6. Fujiyama, T., Childs, C., Boampong, D., & Tyler, N. (2007). *How Do Elderly Pedestrians Perceive Hazards in the Street? An Initial Investigation Towards Development of a Pedestrian Simulation That Incorporates Reaction of Various Pedestrians to Environments*. Paper presented at the 11th International Conference on Mobility and Transport for the Elderly and Disabled Persons (TRANSED), Montréal (QC).
7. Karekla, X., Fujiyama, T., & Tyler, N. (2011). Evaluating accessibility enhancements to public transport including indirect as well as direct benefits. *Research in Transportation Business & Management, 2*, 92-100.
8. Kazemina, A., Del Chiappa, G., & Jafari, J. (2015). Seniors' travel constraints and their coping strategies. *Journal of Travel Research, 54*(1), 80-93.
9. Marr, E. (2015). Assessing transportation disadvantage in rural Ontario, Canada: A case study of Huron County. *Journal of Rural and Community Development, 10*(2), 100-120.
10. Newman, N. (2014). Opinion piece: Apple iBeacon technology briefing. *Journal of Direct, Data and Digital Marketing Practice, 15*, 222-225.

11. Ozdenizci, B., Coskun, V., & Ok, K. (2015). NFC internal: An indoor navigation system. *Sensors*, 15(4), 7571-7595.
12. Pluijter, N., de Wit, L. P. W., Bruijn, S. M., & Plaisier, M. A. (2015). Tactile pavement for guiding walking direction: An assessment of heading direction and gait stability. *Gait & Posture*, 42, 534-538.
13. Sakamoto, M. (2014). Technical innovation in railway service: The JR east app. *JR East Technical Review*, 28(Spring), 5-8.
14. Viant, A. (1993). Enticing the elderly to travel. *Tourism Management*, 14(1), 52-60.
15. Wacker, R. R. & Roberto, K. A. (2014). *Community Resources for Older Adults: Programs and Services in an Era of Change* (4th ed.). Thousand Oaks (CA): SAGE Publications, Inc.

Grey Literature (n=97)

1. AbleData. (2016). *Wayfinding AT for People Who Are Blind, Deaf, or Have a Cognitive Disability*. Falls Church (VA): AbleData.
2. AbleLink. (n.d.). WayFinder 3 Brochure. Retrieved April 2017, from http://www.ablelinktech.com/assets/datasheets/WayFinder%203_20160920.pdf.
3. Abraham, H., Lee, C., Brady, S., Fitzgerald, C., Mehler, B., Reimer, B., & Coughlin, J. F. (2016). *Autonomous Vehicles, Trust, and Driving Alternatives: A Survey of Consumer Preferences*. Cambridge (MA): AgeLab, Massachusetts Institute of Technology.
4. Access Now. (n.d.). Access Now: Pin Pointing Accessibility Around the World. Retrieved August 2017, from <http://accessnow.me/>.
5. Accessibility.Cloud. (n.d.). Accessibility.Cloud: Exchange Accessibility Data, Standardized. Retrieved August 2017, from <https://www.accessibility.cloud/>
6. ACRP (Airport Cooperative Research Program). (2008). *Innovations for Airport Terminal Facilities*. Vol. 10. Washington (DC): Transportation Research Board of the National Academies.
7. AENEAS (Attaining Energy-Efficient Mobility in an Ageing Society). (n.d.-a). About the Project. Retrieved April 2017, from <http://www.aeneas-project.eu/?page=about>.
8. AENEAS (Attaining Energy-Efficient Mobility in an Ageing Society). (n.d.-b). Public Transport Training for Passengers and Drivers. Retrieved April 2017, from <http://www.aeneas-project.eu/?page=salzburgmeasure2>.
9. AENEAS (Attaining Energy-Efficient Mobility in an Ageing Society). (n.d.-c). Good Practice Exchange Ring. Retrieved April 2017, from <http://www.aeneas-project.eu/gper/example.php?id=123>.
10. AFNYC (Age-Friendly New York City). (2013). *59 Initiatives*. New York (NY): AFNYC.
11. AGE-WELL. (2017). AGE-WELL Partners with Uber Around Transportation for Older Adults. Retrieved August 2017, from <http://agewell-nce.ca/archives/3834>.

12. AGE (AGE Platform Europe). (2002). *Door-to-Door Transport Systems: Older People's Point of View*. Brussels, Belgium: AGE.
13. Alaska Airlines. (2017a). Accessible Services. Retrieved August 2017, from <https://www.alaskaair.com/content/travel-info/accessible-services/specialservices-other.aspx>.
14. Alaska Airlines. (2017b). Customer Service Commitment. Retrieved August 2017, from <https://www.alaskaair.com/content/about-us/customercommitment/customer-commitment-listen-to-you.aspx>.
15. Alaska Airlines. (2017c). Alaska Listens. Retrieved August 2017, from <https://survey.alaskalistens.com/#/survey1>.
16. AMS (Amsterdam Airport Schiphol). (2017a). Traveling with Mobility Aids. Retrieved February 2017, from <https://www.schiphol.nl/en/page/travelingwithmobilityaids/>.
17. AMS (Amsterdam Airport Schiphol). (2017b). From Schiphol. Retrieved February 2017, from <https://www.schiphol.nl/en/travelfromschiphol/>.
18. APTA (American Public Transportation Association). (2017). Policy Development and Research Program at APTA. Retrieved May 2017, from <http://www.apta.com/resources/statistics/Pages/Surveys.aspx>.
19. Ashby, R. C. (2015). *Comparative Analysis of Canadian and U.S. Approaches to Accessible Transportation Standards: Summary Report Submitted to the Canada Transportation Act Review*. Washington (DC): U.S. Department of Transportation.
20. BA (British Airways). (n.d.). Medical Conditions and Pregnancy. Retrieved June 2017, from <https://www.britishairways.com/en-gb/information/travel-assistance/medical-conditions-and-pregnancy>.
21. BC Ferries. (2016). *Queen of Oak Bay Back in Service with Upgraded Pet Areas*. Victoria (BC): BC Ferries.
22. CATSA (Canadian Air Transport Security Authority). (n.d.-a). Seniors. Retrieved June 2017, from <http://www.catsa.gc.ca/seniors>.
23. CATSA (Canadian Air Transport Security Authority). (n.d.-b). About Us. Retrieved June 2017, from <http://www.catsa.gc.ca/about-us>.
24. CBS (Capitol Business Solutions). (2015). *Overview of the Canadian Approach to Accessible Transportation*. Arlington (VA): CBS.
25. CCD (Council of Canadians with Disabilities). (2014). *Building an Inclusive and Accessible Canadian Transportation System. CCD Submission to Canada Transportation Act Review*. Winnipeg (MB): CCD.
26. CCD (Council of Canadians with Disabilities). (2016). Speaking Notes for Transportation Roundtable. Retrieved January 2017, from <http://www.ccdonline.ca/en/transportation/minister/Transportation-Roundtable-17Nov2016>.
27. City of Ottawa. (2015). *Accessibility Design Standards*. Ottawa (ON): City of Ottawa.

28. CNIB (Canadian National Institute for the Blind). (2015). CNIB Awards MIPsoft with 2015 Winston Gordon Award for Excellence in Accessible Technology. Retrieved April 2017, from <http://www.cnib.ca/en/Pages/CNIB-awards-MIPsoft-with-2015-Winston-Gordon-Award--for-excellencein-accessible-technology.aspx>.
29. Council of Deputy Ministers (Council of Deputy Ministers Responsible for Transportation and Highway Safety). (2010). *Intercity Bus Services Task Force Final Report*. Ottawa (ON): Council of Deputy Ministers.
30. CSFS (Carrier Sekani Family Services). (2006). *Highway of Tears Symposium Recommendation Report*. Prince George (BC): Carrier Sekani Family Services.
31. CTA (Canadian Transportation Agency). (1998). *Code of Practice: Passenger Rail Car Accessibility and Terms and Conditions of Carriage by Rail of Persons with Disabilities*. Ottawa (ON): CTA.
32. CTA (Canadian Transportation Agency). (2015b). *Carriage of Mobility Aids On Board Planes, Trains and Ferries*. Ottawa (ON): CTA.
33. CUTA (Canadian Urban Transit Association). (n.d.). Policy Issues and Research. Retrieved May 2017, from <http://cutaactu.ca/en/advocacy/policy-issuesand-research>.
34. Dailey, J. (2017). Uber for Elders. Retrieved March 2017, from <https://senior.com/uber-for-elders/>.
35. DOT (U.S. Department of Transportation). (2016a). *Resolution of the U.S. Department of Transportation Access Committee*. Washington (DC): DOT.
36. EU (European Union). (2006). *Regulation (EC) No 1107/2006 of the European Parliament and of the Council of 5 July 2006 Concerning the Rights of Disabled Persons and Persons with Reduced Mobility When Travelling by Air*. Brussels, Belgium: EU.
37. Frank, L. D. & Ngo, V. D. (2016). *Study of Travel, Health and Activity Patterns Before and After the Redesign of the Comox-Helmcken Greenway Corridor*. Vancouver (BC): Health and Community Design Lab, University of British Columbia.
38. Frye, A. (2015a). *Comparing Canadian and European Approaches to Transportation Accessibility: Final Report Submitted to the Canada Transportation Act Review*. London, United Kingdom: Ann Frye Limited.
39. GC (Government of Canada). (2012). *Air Transportation Regulations*. Ottawa (ON): GC.
40. Goodall, W., Dovey Fishman, T., Bornstein, J., & Bonthron, B. (2017). The rise of mobility as a service, *Deloitte Review*, 20.
41. Gov. of BC (Government of British Columbia). (2017). Highway 16 Transportation Action Plan. Retrieved March 2017, from <http://www2.gov.bc.ca/gov/content/transportation/transportationreportsandreference/reportsstudies/planningstrategieconomic/highway16actionplan>.
42. HLAA (Hearing Loss Association of America). (2017). Hearing Loop Technology. Retrieved February 2017, from <http://www.hearingloss.org/content/loop-technology>.

43. ICC (Inuit Circumpolar Council). (2014). *The Sea Ice Never Stops: Circumpolar Inuit Reflections on Sea Ice Use and Shipping in Inuit Nunaat*. Ottawa (ON): ICC.
44. IDeA (Center for Inclusive Design and Environmental Access). (2014). Multisensory Interactive Models. Retrieved February 2017, from <http://udeworld.com/multisensory-interactive-models.html>.
45. Ions, B. (2014). *Years Ahead: A Report on Older Person Friendly Seating*. Newcastle, United Kingdom: Newcastle University.
46. iTunes (iTunes App Store). (2017a). Wheelmap. Retrieved August 2017, from <https://itunes.apple.com/us/app/wheelmap/id399239476?mt=8>.
47. iTunes (iTunes App Store). (2017b). BlindSquare on the App Store. Retrieved April 2017, from <https://itunes.apple.com/app/blindsquare/id500557255>.
48. iTunes (iTunes App Store). (2017c). AccessNow. Retrieved August 2017, from <https://itunes.apple.com/ca/app/accessnow/id1162504545?mt=8>.
49. iTunes (iTunes App Store). (2017d). ASX Map v2. Retrieved August 2017, from <https://itunes.apple.com/ca/app/axs-map-v2/id554015666?mt=8>.
50. KLM (KLM Royal Dutch Airlines). (2017). Travel by Bus or Train on a KLM Ticket. Retrieved March 2017, from https://www.klm.com/travel/gb_en/plan_and_book/ticket_information/travel_by_train_on_a_klm_ticket/index.htm.
51. Les Compagnons du Voyage. (2017). Our Prices. Retrieved April 2017, from <http://www.compagnons.com/infos-pratique/tarifs.html>.
52. LTD (Lane District Transit). (n.d.). Bus Buddy Program. Retrieved April 2017, from <https://www.ltd.org/bus-buddy-program/>.
53. MaaS Global. (n.d.). MaaS as a Concept. Retrieved August 2017, from <http://maas.global/maas-as-a-concept/>.
54. Medaire. (n.d.). Medical Advisory Services: MedLink. Retrieved June 2017, from <http://www.medaire.com/airlines/solutions>.
55. Mein, P., Kirchhoff, A., & Fagan, P. (2014). *Impacts of Aging Travelers on Airports*. Washington (DC): Transportation Research Board of the National Academies.
56. Metrolinx. (2014). *Metrolinx Accessibility Status Report: 2014*. Toronto (ON): Metrolinx.
57. Metrolinx. (2015). *Metrolinx Accessibility Status Report: 2015*. Toronto (ON): Metrolinx.
58. Metrolinx. (n.d.). Metrolinx Overview. Retrieved April 2017, from http://www.metrolinx.com/en/aboutus/metrolinxoverview/metrolinx_overview.aspx.
59. MIT (Massachusetts Institute of Technology). (n.d.). *Traffic & Capacity*. Cambridge (MA): MIT.
60. MTR (Hong Kong Mass Transit Railway). (2016). Privileges and Complimentary Services. Retrieved February 2017, from http://www.mtr.com.hk/en/customer/services/complom_connections.html.

61. Nicolson, C. (2008). *Risk Mitigation Associated with Airport Escalator and Moving Sidewalk Operations*. Calgary (AB): International Association of Airport Executives Canada.
62. NYC DOT (New York City District of Transit). (2017). City Bench. Retrieved February 2017, from <http://www.nyc.gov/html/dot/html/pedestrians/citybench.shtml>.
63. ODO (Open Doors Organization). (n.d.). Training. Retrieved February 2017, from <http://opendoorsnfp.org/workshopsconferences/training-2/>.
64. OECD (Organisation for Economic Co-operation and Development). (2001). *Ageing and Transport. Mobility Needs and Safety Issues*. Paris, France: OECD.
65. ONE-ITS (Online Network-Enabled Intelligent Transportation Systems). (n.d.). ONT-ITS In Brief. Retrieved May 2017, from <http://128.100.217.245/web/one-its/one-its-in-brief>.
66. Ontario Ministry of Transportation. (2016). *Automated Vehicles Coming to Ontario Roads*. Toronto (ON): Ontario Ministry of Transportation.
67. Oxford Economics. (2014). *Shaping the Future of Travel: Macro Trends Driving Industry Growth Over the Next Decade*. Oxford, United Kingdom: Oxford Economics.
68. Rail Europe. (2017). Express Flight Luggage to Switzerland. Retrieved August 2017, from <https://www.raileurope.ca/activities/fly-rail-baggage-toswitzerland/index.html>.
69. Road Scholar. (n.d.-a). Who Is a Road Scholar? Retrieved June 2017, from <https://www.road scholar.org/road scholar-experience/people/>.
70. Road Scholar. (n.d.-b). Our Experiential Learning Opportunities Change Lives. Retrieved June 2017, from <https://www.road scholar.org/about/>.
71. Rome2rio. (2017). About Rome2rio. Retrieved April 2017, from <https://www.rome2rio.com/about/>.
72. SDT (Senior Discovery Tours). (n.d.-a). Why Senior Discovery Tours. Retrieved May 2017, from <https://seniordiscoverytours.ca/about-us/why-seniordiscovery-tours/>.
73. SDT (Seniors Discovery Tours). (n.d.-b). Senior Discovery Tours Aims to Improve the Everyday Lives of People with Disabilities. Retrieved May 2017, from <https://seniordiscoverytours.ca/about-us/accessibility-for-ontarians/>.
74. Staxi. (n.d.-a). Staxi Airport Chair. Retrieved August 2017, from http://www.staxi.com/media/file/product/airport_chair_datasheet.pdf.
75. Staxi. (n.d.-b). Staxi Boarding Chair. Retrieved August 2017, from http://www.staxi.com/media/file/product/boarding_chair_data_sheet.pdf
76. STC (Saskatchewan Transportation Company). (2016). *Saskatchewan Transportation Company Annual Report 2015–2016*. Regina (SK): STC.
77. STC (Saskatchewan Transportation Company). (2017). Saskatchewan Transportation Company Annual Report. Retrieved August 2017, from https://www.stc bus.com/Corporate/ci_annualreport2016.aspx.

78. STS (Swiss Travel System). (n.d.). Travelling to Switzerland. Retrieved April 2017, from <http://www.swisstravelsystem.com/en/getting-around/getting-around-baggage/into-switzerland.html>.
79. Sylvestre, G., Christopher, G., & Snyder, M. (2006). *The Mobility Needs and Transportation Issues of the Aging Population in Rural Manitoba*. Winnipeg (MB): Manitoba Seniors and Healthy Aging Secretariat.
80. TC (Transport Canada). (2006). *Sustainable Transportation in Small and Rural Communities*. Ottawa (ON): TC.
81. TC (Transport Canada). (2016g). *Minister-Led Roundtable: The North*. Ottawa (ON): TC.
82. TC (Transport Canada). (2016h). *Minister-Led Indigenous Roundtable on the Future of Transportation*. Ottawa (ON): TC.
83. TCRP (Transit Cooperative Research Program). (2017). About TCRP. Retrieved May 2017, from <http://www.tcrponline.org/SitePages/aboutTCRP.aspx>.
84. TfL (Transport for London). (n.d.-a). Open Data Users. Retrieved September 2017, from <https://tfl.gov.uk/info-for/open-data-users/>.
85. TfL (Transport for London). (n.d.-b). Plan a Journey. Retrieved April 2017, from <https://tfl.gov.uk/plan-a-journey/>.
86. TransLink. (2017b). Transit 101. Retrieved February 2017, from <http://www.translink.ca/en/RiderGuide/Transit101.aspx>.
87. TRB (Transportation Research Board). (2016). *Between Public and Private Mobility: Examining the Rise of Technology-Enabled Transportation Services*. Special Report 319 Washington (DC): Transportation Research Board of the National Academies.
88. TRB (Transportation Research Board). (2017a). Airport Cooperative Research Program. Retrieved May 2017, from <http://www.trb.org/ACRP/ACRPOverview.aspx>.
89. TRB (Transportation Research Board). (2017d). Transit Cooperative Research Program Overview. Retrieved May 2017, from <http://www.trb.org/TCRP/TCRPOverview.aspx>.
90. TSA (Transportation Security Administration). (n.d.). Passenger Support. Retrieved February 2017, from <https://www.tsa.gov/travel/passengersupport>.
91. UNDP (United Nations Development Program). (2010). *A Review of International Best Practice in Accessible Public Transportation for Persons with Disabilities*. Kuala Lumpur, Malaysia: UNDP.
92. WFS (Worldwide Flight Services). (n.d.). Baggage Delivery Services. Retrieved April 2017, from http://www.hkairportconcierge.com/baggage_delivery_service.php.
93. WHO (World Health Organization). (2007). *Global Age-friendly Cities: A Guide*. Geneva, Switzerland: WHO.
94. Worsfold, J. & Chandler, E. (2010). *Wayfinding Project*. London, United Kingdom: Royal National Institute of Blind People.

95. YVR (Vancouver International Airport). (2011). YVR Green Coat FAQ. Retrieved February 2017, from http://www.yvr.ca/-/media/yvr/documents/information-and-assistance/2011_04_yvr-green-coat-faq.pdf?la=en.
96. YVR (Vancouver International Airport). (2017). Porter Services. Retrieved February 2017, from <http://www.yvr.ca/en/passengers/navigateyvr/porterservices>.
97. YYC (Calgary International Airport). (n.d.). White Hat Volunteers. Retrieved September 2017, from <https://www.yyc.com/en-us/calgaryairportauthority/volunteeringatyycc/whitehatvolunteers.aspx>.

Data Sources (n=0)

Media Reports (n=10)

1. Adams, T. (2016). Greyhound Begins Operations at New Location May 29. Retrieved August 2017, from <http://www.cbc.ca/news/canada/edmonton/greyhound-begins-operations-at-new-location-may-29-1.3601920>.
2. Bains, C. (2017, March 26). Saskatchewan Rural Bus Service a Must for Vulnerable People: BC First Nation, *The Brandon Sun*.
3. CBC (Canadian Broadcasting Corporation). (2011). Technology Helps Hearing Impaired Stay in "Loop." Retrieved April 2017, from <http://www.cbc.ca/news/canada/ottawa/technology-helps-hearing-impaired-stay-inloop-1.995924>.
4. CBC (Canadian Broadcasting Corporation). (2017a). 'A Long Time Coming': Highway of Tears Gets 2 New Bus Routes. Retrieved June 2017, from <http://www.cbc.ca/news/canada/british-columbia/a-long-time-cominghighway-of-tears-gets-2-new-bus-routes-1.4166749>.
5. CBC (Canadian Broadcasting Corporation). (2017b). Bus Route Hearings Underway as STC Signs Come Down. Retrieved October 2017, from <http://www.cbc.ca/news/canada/saskatchewan/stc-signs-hearingsjune-6-1.4147961>.
6. Erlichman, J. (2016). Uber Launches New Service Targeting Elderly Torontonians. Retrieved May 2017, from <http://www.bnn.ca/uber-launches-new-servicetargeting-elderly-torontonians-1.554964>.
7. Kendrick, S. (2017, February 7). Opinion: Greyhound Seeking Solution for Stranded Riders, *The Edmonton Journal*.
8. Mah, B. (2016, March 16). No Transit to Edmonton's New Greyhound Depot, but You Can Hop a Train Once There, *The Edmonton Journal*.
9. Sorensen, C. (2013). It's Not Your Imagination, Airlines Really are Shrinking the Size of Seats. Retrieved August 2017, from <http://www.macleans.ca/economy/business/its-not-your-imagination-airlines-really-are-shrinkingthe-size-of-seats/>.
10. Warick, J. (2017). 'It's Going to Be Quite a Nightmare': Passengers Outraged by STC Closure. Retrieved August 2017, from <http://www.cbc.ca/news/canada/saskatoon/saskatchewan-bus-company-stc-end-service-shutdown-1.4036612>.

Chapter 5 References

The following citations were taken from the CCA's final report titled *Older Canadians on the Move* and sorted according to pre-determined categories of types of evidence that are used within the CCA. There were 81 sources referred to in chapter 5, including 13 academic, 66 grey literature, 1 data sources, and 1 news/media article.

Academic Literature (n=13)

1. AGE (AGE Platform Europe). (2002). *Door-to-Door Transport Systems: Older People's Point of View*. Brussels, Belgium: AGE.
2. Cattan, M., Hogg, E., & Hardill, I. (2011). Improving quality of life in ageing populations: What can volunteering do? *Maturitas*, 70, 328-332.
3. Cvitkovich, Y. & Wister, A. (2001). The importance of transportation and prioritization of environmental needs to sustain well-being among older adults. *Environment and Behavior*, 33(6), 809-829.
4. Gulliksen, J., Goransson, B., Boivie, I., Blomkvist, S., Persson, J., & Cajander, A. (2003). Key principles for user-centred systems design. *Behaviour & Information Technology*, 22(6), 397-409.
5. Huang, A. R., Larente, N., & Morais, J. A. (2011). Moving towards the agefriendly hospital. A paradigm shift for the hospital-based care of the elderly. *Canadian Geriatrics Journal*, 14(4), 100-103.
6. Iwarsson, S. & Stahl, A. (2003). Accessibility, usability and universal design — Positioning and definition of concepts describing person–environment relationships. *Disability and Rehabilitation*, 25(2), 57-66.
7. Kim, S. & Ulfarsson, G. (2013). Transportation in an aging society: Linkage between transportation and quality of life. *Transportation Research Record: Journal of the Transportation Research Board*, 2357, 109-115.
8. Kinzie, M. B., Cohn, W. F., Julian, M. F., & Knaus, W. A. (2002). A user-centred model for web site design: Needs assessment, user interface design, and rapid prototyping. *Journal of the American Medical Informatics Association*, 9(4), 320-330.
9. Levy, S. R. (2016). Toward reducing ageism: PEACE (Positive Education About Aging and Contact Experiences) model. *The Gerontologist*, gnw116.
10. Lofthouse, V. A. & Lilley, D. (2006). *What they really, really want: User centered research methods for design*. Paper presented at International Design Conference — Design 2006, Dubrovnik, Croatia.
11. Newton, R., Ormerod, M., Burton, E., Mitchell, L., & Ward-Thompson, C. (2010). Increasing independence for older people through good street design. *Journal of Integrated Care*, 18(3), 24-29.
12. Von Eye, A. & Wiedermann, W. (2015). Person-Centered Analysis. In R. A. Scott & S. M. Kosslyn (Eds.), *Emerging Trends in the Social and Behavioural Sciences: An*

Interdisciplinary, Searchable, and Linkable Resource. New York (NY): John Wiley & Sons, Inc.

13. Wilson, J. (2012). Volunteerism research: A review essay. *Nonprofit and Voluntary Sector Quarterly*, 41(2), 176-212.

Grey Literature (n=66)

1. AACWinnipeg (Winnipeg Access Advisory Committee). (2016). Access Awards 2012. Retrieved July 2017, from <http://www.aacwinnipeg.mb.ca/awardarchives/awards2012.html>.
2. AEBC (Alliance for Equality of Blind Canadians). (n.d.). The Inter-Organizational Access Committee. Retrieved April 2017, from <http://www.blindcanadians.ca/publications/cbm/14/inter-organizational-access-committee-ioac>.
3. AGE (AGE Platform Europe). (2002). *Door-to-Door Transport Systems: Older People's Point of View*. Brussels, Belgium: AGE.
4. AGE (AGE Platform Europe). (2010). *Towards Smart, Sustainable and Inclusive Places for All Ages*. Brussels, Belgium: AGE.
5. AGE (AGE Platform Europe). (2012). *Towards an Age-Friendly EU by 2020*. Brussels, Belgium: AGE.
6. AHMAC (Australian Health Ministers' Advisory Council). (2004). *Age-Friendly Principles and Practices*. Canberra, Australia: AHMAC.
7. Ashby, R. C. (2015). Comparative Analysis of Canadian and U.S. Approaches to Accessible Transportation Standards: Summary Report Submitted to the Canada Transportation Act Review. Washington (DC): U.S. Department of Transportation.
8. Baker, D. (2006). *Moving Backwards: Canada's State of Transportation Accessibility in an International Context*. Winnipeg (MB): Council of Canadians with Disabilities.
9. BlueSky. (2015). The Future of IoT in Airports — Lessons from London City Airport. Retrieved June 2017, from <http://www.totalbluesky.com/2015/03/10/future-iot-airports-lessons-london-city-airport/>.
10. Burrus, D. (2017). The Internet of Things Is Creating Smart Airports. Retrieved May 2017, from <https://www.burrus.com/2017/02/internet-of-things-smart-airports/>.
11. CAB (Centre for Ageing Better). (n.d.-a). Our Approach to Innovation and Adoption. Retrieved June 2017, from <https://www.ageingbetter.org.uk/aboutageingbetter/whatwedo/innovationadoption/>.
12. CAB (Centre for Ageing Better). (n.d.-b). What We Do. Retrieved June 2017, from <https://www.ageingbetter.org.uk/aboutageingbetter/whatwedo/>.
13. CAB (Centre for Ageing Better). (n.d.-c). Our Approach to Evidence. Retrieved June 2017, from <https://www.ageingbetter.org.uk/aboutageingbetter/whatwedo/evidence/>.
14. CAB (Centre for Ageing Better). (n.d.-d). Our Approach to Involving People with Lived Experience in Our Work. Retrieved June 2017, from

<https://www.ageingbetter.org.uk/aboutageingbetter/whatwedo/approachinvolvingpeopleliveandexperiencework/>.

15. CAC (Canadian Airports Council). (2016). Canada's Airports Welcome Federal Infrastructure Funds for Small Airports. Retrieved March 2017, from <http://www.cacairports.ca/press-releases/canada%E2%80%99s-airportswelcome-federal-infrastructure-funds-small-airports>.
16. Carstairs, S. & Keon, W. J. (2009). *Canada's Aging Population: Seizing the Opportunity*. Ottawa (ON): Senate of Canada.
17. CCD (Council of Canadians with Disabilities). (2016). Speaking Notes for Transportation Roundtable. Retrieved January 2017, from <http://www.ccdonline.ca/en/transportation/minister/Transportation-Roundtable-17Nov2016>.
18. CCDS (Canadian Centre on Disability Studies). (2014). *Introduction to VisitAble Housing*. Winnipeg (MB): CCDS.
19. City of Winnipeg. (2017). *Universal Design — Planning, Property and Development*. Retrieved April 2017, from http://winnipeg.ca/ppd/Universal_Design.stm.
20. CMHR (Canadian Museum for Human Rights). (2013). *CMHR to Feature the Most Inclusive Design in Canadian History; Accessibility Sets Global Example, Surpasses Smithsonian Guidelines*. Retrieved April 2017, from <https://humanrights.ca/about-museum/news/cmhr-feature-most-inclusivedesign-canadian-history-accessibility-sets-global>.
21. CMHR (Canadian Museum for Human Rights). (2016). *Museum Wins International Award for Inclusion*. Retrieved April 2017, from <https://humanrights.ca/about-museum/news/museum-wins-internationalaward-inclusion>.
22. CTA (Canadian Transportation Agency). (2014b). *Strategic Plan 2014–2017: Transforming the Way We Work*. Ottawa (ON): CTA.
23. CTA (Canadian Transportation Agency). (2015a). *Monitoring the Industry for Accessibility*. Retrieved August 2016, from <https://www.otc-cta.gc.ca/eng/compliance-and-enforcement>.
24. CTA (Canadian Transportation Agency). (2016a). *Training Videos on How to Assist Persons with Disabilities*. Retrieved May 2017, from <https://www.otc-cta.gc.ca/eng/training-videos>.
25. CTA (Canadian Transportation Agency). (2017b). *Personnel Training for the Assistance of Persons with Disabilities Regulations*. Ottawa (ON): CTA.
26. DOT (U.S. Department of Transportation). (2016a). *Resolution of the U.S. Department of Transportation Access Committee*. Washington (DC): DOT.
27. DOT (U.S. Department of Transportation). (2016b). *ACCESS Advisory Committee*. Retrieved February 2017, from <https://www.transportation.gov/access-advisory-committee>.
28. EU (European Union). (2015). *European Structural and Investment Funds 2014-2020: Official Texts and Commentaries*. Brussels, Belgium: EU.

29. Frye, A. (2015a). Comparing Canadian and European Approaches to Transportation Accessibility: Final Report Submitted to the Canada Transportation Act Review. London, United Kingdom: Ann Frye Limited.
30. GC (Government of Canada). (2015b). Pathways: Connecting Canada's Transportation System to the World. Volume 1. Ottawa (ON): GC.
31. GC (Government of Canada). (2017a). Smart Cities Challenge — Get Ready! Retrieved September 2017, from <http://www.infrastructure.gc.ca/plan/cities-villes-eng.html>.
32. GC (Government of Canada). (2017b). Canada Infrastructure Bank. Retrieved September 2017, from <http://www.infrastructure.gc.ca/CIB-BIC/indexeng.html>.
33. GC (Government of Canada). (2017c). Federal Budget 2017: Building a Strong Middle Class. Ottawa (ON): GC.
34. GC (Government of Canada). (2017d). Investing in Canada Plan. Retrieved September 2017, from <http://www.infrastructure.gc.ca/plan/aboutinvest-apropos-eng.html#about>.
35. Gov. of ON (Government of Ontario). (2005). Accessibility for Ontarians with Disabilities Act. Toronto (ON): Gov. of ON.
36. ICAO (International Civil Aviation Organization). (2013). Manual on Access to Air Transport by Persons with Disabilities. Montréal (QC): ICAO.
37. ICAO (International Civil Aviation Organization). (n.d.). About ICAO. Retrieved January 2017, from <http://www.icao.int/about-icao/Pages/default.aspx>
38. IDRC (Inclusive Design Research Centre (OCAD University)). (n.d.). About the IDRC. Retrieved April 2017, from <http://idrc.ocadu.ca/about-the-idrc>.
39. Lasby, D. (2004). The Volunteer Spirit in Canada: Motivations and Barriers. Toronto (ON): Canadian Centre for Philanthropy.
40. Mein, P., Kirchoff, A., & Fagan, P. (2014). Impacts of Aging Travelers on Airports. Washington (DC): Transportation Research Board of the National Academies.
41. Metrolinx. (2015). Metrolinx Accessibility Status Report: 2015. Toronto (ON): Metrolinx.
42. Morris, F. (2016). Five Ways IoT Will Change How You Experience Air Travel. Retrieved May 2017, from <https://www.ibm.com/blogs/internet-ofthings/smart-air-travel/>.
43. ODO (Open Doors Organization). (n.d.). Training. Retrieved February 2017, from <http://opendoorsnfp.org/workshopsconferences/training-2/>.
44. ONE-ITS (Online Network-Enabled Intelligent Transportation Systems). (n.d.). ONT-ITS In Brief. Retrieved May 2017, from <http://128.100.217.245/web/one-its/one-its-in-brief>.
45. TCRP (Transit Cooperative Research Program). (2017). About TCRP. Retrieved May 2017, from <http://www.tcrponline.org/SitePages/aboutTCRP.aspx>.
46. TfL (Transport for London). (n.d.-a). Open Data Users. Retrieved September 2017, from <https://tfl.gov.uk/info-for/open-data-users/>.

47. TRB (Transportation Research Board). (2017a). Airport Cooperative Research Program. Retrieved May 2017, from <http://www.trb.org/ACRP/ACRPOverview.aspx>.
48. TRB (Transportation Research Board). (2017b). All ACRP Projects. Retrieved May 2017, from <http://www.trb.org/ACRP/ACRPPProjects.aspx>.
49. TRB (Transportation Research Board). (2017c). Transportation Research Board: Innovation and Research Since 1920. Washington (DC): The National Academies of Sciences, Engineering, and Medicine.
50. TRB (Transportation Research Board). (2017d). Transit Cooperative Research Program Overview. Retrieved May 2017, from <http://www.trb.org/TCRP/TCRPOverview.aspx>.
51. TSA (Transportation Security Administration). (n.d.). Passenger Support. Retrieved February 2017, from <https://www.tsa.gov/travel/passengersupport>.
52. University of Manitoba. (2016). Transport Institute Profile. Retrieved May 2017, from http://umanitoba.ca/faculties/management/ti/ti_profile.html.
53. Usability.gov. (n.d.-a). User-Centered Design Basics. Retrieved June 2017, from <https://www.usability.gov/what-and-why/user-centered-design.html>.
54. Usability.gov. (n.d.-b). Benefits of User-Centered Design. Retrieved August 2017, from <https://www.usability.gov/what-and-why/benefits-of-ucd.html>.
55. Van Horne Institute. (2017). Our Mission, Vision and Goal. Retrieved May 2017, from <http://www.vanhorne.info/>.
56. VTI (Swedish National Road and Transportation Research Institute). (n.d.-a). The Library. Retrieved May 2017, from <https://www.vti.se/en/library/>.
57. VTI (Swedish National Road and Transportation Research Institute). (n.d.-b). VTI's Research and Services. Retrieved May 2017, from <https://www.vti.se/en/>.
58. W3C (Web Accessibility Initiative). (2004). Notes on User Centered Design Process (UCD). Retrieved September 2017, from <https://www.w3.org/WAI/redirect/ucd>.
59. Wang, T. (2013, May 13). Big Data Needs Thick Data, Ethnography Matters. WHO (World Health Organization). (2007). Global Age-friendly Cities: A Guide. Geneva, Switzerland: WHO.
60. WHO (World Health Organization). (2014). Why Should Cities Become More Age-Friendly? Retrieved February 2017, from <https://extranet.who.int/agefriendlyworld/why-become-more-af/>.
61. WHO (World Health Organization). (2015). World Report on Ageing and Health. Geneva, Switzerland: WHO.
62. WHO (World Health Organization). (2016). Global Strategy and Action Plan on Ageing and Health, 2016–2020. Geneva, Switzerland: WHO.
63. WHO (World Health Organization). (2017a). Age-friendly Environments. Retrieved February 2017, from <http://www.who.int/ageing/age%ADfriendly%ADenvironments/en/>.

64. WHO (World Health Organization). (2017b). WHO Global Network for Agefriendly Cities and Communities. Retrieved February 2017, from http://www.who.int/ageing/projects/age_friendly_cities_network/en/.
65. WRIA (Winnipeg Richardson International Airport). (2010). Universal Design in New Air Terminal Building. Retrieved April 2017, from <http://www.waa.ca/blog/post/674/universal-design-in-new-air-terminal-building>.
66. WRIA (Winnipeg Richardson International Airport). (2015). Winnipeg Richardson International Airport Celebrated with Premier's Award for Design Excellence. Retrieved April 2017, from <http://www.waa.ca/media/news/article/727/winnipeg-richardson-international-airport-celebrated-with-premier-s-award-for-design-excellence>.

Data Sources (n=1)

1. TC (Transport Canada). (2014). *Transportation in Canada 2013. Statistical Addendum*. Ottawa (ON): TC.

Media Reports (n=1)

1. Blouin, D. (2014). The Internet of Things Could Empower People with Disabilities. Retrieved May 2017, from <http://www.cmswire.com/cms/internet-of-things/the-internet-of-things-could-empower-people-withdisabilities-026211.php>.

Chapter 6 References

The following citations were taken from. There were no (0) sources referred to in chapter 6 of the CCA's final report titled *Older Canadians on the Move*.

Appendix G: Code Book

In this appendix, I show the definitions used for my codes used in transcripts and documents identified as relevant to my study. I then show the coding structure I settled on while preparing to write-up my dissertation.

Definitions

Here, I show the definitions used for structural coding and descriptive coding.

1 – Organizational discourse – References to the “ensemble of ideas, concepts, and categories” found in the identifiable sets of practices through which meaning is given to social and physical phenomenon within the Council of Canadian Academies

2 – Process/actors/writing – references to the process of producing the Transport Canada, including who did what, what activities were involved for each individual or group of individuals, and specific writing-related tasks.

3 – Recontextualizing science – References to the way in which scientific knowledge is accessed, interpreted, and re-presented in a manner that fits the perceived needs of policy-makers working in Transport Canada

Table 2: Descriptive codes, including definitions used for each

#	Code	Definition
01	Expertise for project/panel	References to the expertise needed for the Transport Project’s panel.
02	Panel composition	References to the “composition” or make-up of the expert panel that worked on the Transport Project.
03	Panel recruitment	References to the staff’s process of recruiting – identifying, engaging, and signing-up – panel members.
04	Interpretation	References to the act of interpreting information used in the Transport Project.
05	Panel meetings (1, 2, 3, 4, 5)	References to panel meetings in general, including specific meetings (first, second, third, fourth, or fifth).
06	Disciplinary terms and language	References to terms and language used in specific disciplines encompassed by the background of individual committee or “panel” members.

07	References to other CCA projects	References to other projects/assessments done by the CCA, including staff members' involvement and lessons learned.
08	Panel's background	References to the disciplinary or sectoral "home" of panel members involved in the Transport Project.
09	Panel's role	References to the work done by the panel and individual panel members, including the staff's expectations and the panel's recollection of the tasks and activities they were involved in.
10	Staff role (RA, PC, PD, SBPS, COMMS, Comms-Link)	References to the different roles assumed by members of the CCA staff by identified title within the CCA's assessment team, including Research Associate (RA), Project Coordinator (PC), Project Director (PD), Communications-Link (Comms-Link), Communications (Comms), and Senior Bilingual Publication Specialist (SBPS).
11	Division of labour	References to how tasks and activities were assigned to the various individuals involved in the Transport Project, including how it was decided and who was responsible for what.
12	Staff-panel interactions	References to interactions between the CCA staff assessment team and the expert panel (for the Transport Project and beyond, indicated by structural code 1 or 2), including positive and negative interactions.
13	Writing process	References to the process of writing any part of a draft of a CCA report, including those relating to the Transport Project.
14	Drafts of the report	References to earlier drafts of the Transport Report.
15	Staff perceptions of the Chair & Panel	References made by staff team members of what makes a good chair, panel member, and panel.
16	Panel perceptions of staff	References made by panel members of how well the CCA staff team worked during the Transport Project.
17	Evidence in CCA report	References to the use of evidence/information in a CCA report, including the information used in the Transport report.
18	Evidence defined	References to a participant's definition of "evidence".

19	Data collection	References to how information is gathered by assessment team staff, including general practices and those used by the Transport Project staff team.
20	Feedback – Verbal and written	References to the feedback and general input provided to the staff by the Transport Project’s panel members.
21	Expertise defined	References to a participant’s definition of “expertise”.
22	Revisions	References to suggested changes, edits, and revisions that the CCA assessment team staff received from the panel, editors, and other staff team members.
23	Interpreting panel feedback	References to the staff’s process of accepting and incorporating panel feedback into drafts of the Transport Report, including oral and written feedback.
24	Audience	References to the perceived audience of the Transport Report, including the sponsor and other intended readers.
25	Report content	References to the content of <i>Older Canadians on the Move</i> .
26	Peer-review process	References to the peer-review process involved in reviewing and revising the Transport Report.
27	Report narrative	References to the overarching narrative of the Transport Report, including how it was developed over-time.
28	Council Assessment Lifecycle Methodology (CALM)	References to the Council’s Assessment Lifecycle Methodology as it relates to the work of the CCA and the tasks and activities for the Transport Project.
29	Types of writing	References to writing documents other than the drafts or final version of the Transportation Report, including compositional guidelines, milestone meeting materials, panel meeting notes, panel meeting minutes, News Release, Executive Summary, etc.).
30	Value of trust	References to the importance of trust as it relates to the staff’s ability to obtain the panel’s input throughout the Transport Project.
31	Consistency of staff team	References to the changes among the CCA staff assessment team throughout the lifecycle of the Transport Project.

32	Previous panel experience	References to a panel member's previous experience on a non-CCA expert panel/committee.
33	Prior knowledge of the CCA	References to a panel member's existing awareness of the CCA and its work <i>before</i> joining the Transport Project.
34	Authorship	References to who wrote the report, including who is cited as the author.
35	Panel learning process	References to a panel member's process of learning the CCA's assessment/project methodology, including the information that CCA staff shared with them and the manner in which information related to the methodology was shared.
36	Science policy	References to the science-policy interface, including the CCA's broader contributions to Canadian science policy and the "boundary work" of intermediary organizations.
37	Diversity of panel	References to the importance of the panel's accumulative diversity in disciplinary and industry perspectives.
38	Sponsor	References to Transport Canada and the role it played in the CCA's project, including interactions before, during, and after the report was written.
39	Internal committees	References to internal committees that members of the CCA staff are involved in (e.g., CALM committee, Style Guide committee, Impact committee, PD committee, RA committee, etc.).
40	Scientific Advisory Committee (SAC)	References to the role and function of the Scientific Advisory Committee as it relates to both the CCA and the Transport Project.
41	Panel input strategies	References to staff strategies for getting panel members to provide their input (both in terms of writing and information)
42	Post-panel process (work, tasks, etc.)	References to tasks and activities related to a CCA assessment/project <i>after</i> the panel has signed-off on a report
43	Non-panel meetings	References to meetings involved in an assessment that are not formal panel meetings (e.g., team meetings, teleconference, etc.)

44	Style Guide	References to the CCA's "Style Guide" – a reference book developed and used by CCA staff in writing a report
45	Board	References to the CCA's Board of Directors, including their involvement in a project
46	Non-experts	References to someone as being a "non-expert" in a discipline or industry.
47	Science defined	References to participant's definition of "science" as it relates to the CCA and/or the Transport Project.
48	Editing	References to the process of editing a draft or version of the Transport Report.
49	Staff team dynamic	References to the manner in which the staff teams interact during an assessment, including during the Transport Project and broader organizational references.
50	Chair	References to the Transport Project's chair, including perceptions of the quality (good and/or bad) of the Chair.
51	Impact (of report)	References to the intended impact or "uptake" of a CCA report, including general comments and the Transport Report.
52	Staff team meetings	References to internal CCA staff assessment team weekly meetings, including what staff members did during those meetings and the role the meetings played in developing report content or panel meeting materials.
53	Staff background on project topic	References to a staff member's existing knowledge related to a specific CCA assessment topic.
54	Consensus defined	References to a participant's definition of "consensus" as it relates to the agreement of the panel on a report's content.
55	CCA reports	References to the CCA's reports, including indications of the "look and feel" or branding, purpose of the report, use of a report,

Coding Structure

Organizational discourse	Transport Project Processes	Transport Project Roles and Work
<ul style="list-style-type: none"> • Tools <ul style="list-style-type: none"> ○ CALM ○ CCA reports <ul style="list-style-type: none"> ▪ Authorship ▪ Uptake of CCA reports ○ Style Guide • Terms <ul style="list-style-type: none"> ○ Consensus defined ○ Evidence defined ○ Expert defined ○ Expertise defined ○ Science defined • Internal committee • Reference to other CCA project • Science policy <ul style="list-style-type: none"> • Recontextualizing science • Framing • CCA Roles and Work (non-transport references) <ul style="list-style-type: none"> • Audience • Data collection • Disciplinary terms and language • Division of labour • Editing • Feedback (written) • Panel composition • Panel input strategies • Panel meeting • Panel roles • Per-review process • Post-panel process • Report narrative • Staff perceptions of panel or chair • Staff roles 	<ul style="list-style-type: none"> • Consistency of staff team • Learning <ul style="list-style-type: none"> ○ Panel learning process ○ Staff learning process • Panel composition (transport) • Panel input strategies (transport) • Panel recruitment • Panel's previous knowledge of theca • Peer-review process • Post-panel process • Scope of project • Sponsor debrief • Staff team dynamics <ul style="list-style-type: none"> ○ Assessment team ○ Communications team • Staff team meetings • Transport panel meetings • Transport panel sign-off 	<ul style="list-style-type: none"> • Audience (transport) • Data collection (transport) • Disciplinary terms and language (transport) • Division of labour (transport) • Editing (transport) • Feedback (transport) <ul style="list-style-type: none"> ○ Verbal or oral ○ Written • Impact of report • Panel perceptions of staff • Panel roles (transport) <ul style="list-style-type: none"> ○ Chair ○ Panel's expertise ○ Previous panel experience • Report narrative(transport) • Sponsor – Transport Canada • Staff perceptions of panel (transport) • Staff perceptions of chair (transport) • Staff roles (transport) <ul style="list-style-type: none"> ○ CCA Board ○ Communications ○ Comms-Link ○ Project Coordinator ○ Project Director ○ Research Associate ○ Scientific Advisory Committee ○ Senior Bilingual Publication Specialist

<ul style="list-style-type: none"> ○ Communications ○ Comms-Link ○ Project Coordinator ○ Project Director ○ Research Associate ○ Science Advisory Committee ● Staff-panel interactions ● Types of writing <ul style="list-style-type: none"> ○ Executive summary ● Value of trust ● Writing process 		<ul style="list-style-type: none"> ● Staff-panel interactions (transport) ● Transport report content ● Types of writing (transport) <ul style="list-style-type: none"> ○ Compositional guidelines ○ Distribution plan ○ Drafts of transport report ○ Executive Summary ○ News Release ○ Panel briefing materials ○ Panel meeting minutes ○ Panel meeting notes ○ Release Analysis ○ Report in Focus ○ Web-text ● Value of trust ● Writing process (transport)
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Degree: PhD in Applied Linguistics and Discourse Studies

Graduating year: 2019

Permission is hereby granted to: Matthew Falconer

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1. Excerpts from *Older Canadians on the Move*
2. Figures from *Older Canadians on the Move*:
 - “Charlotte and Francois” (CCA, 2017, p. 30)
 - “Yumi” (CCA, 2017, p. 34)
 - Figure 3.2 (CCA, 2017, p. 29)
 - Figure 3.3 (CCA, 2017, p. 33)
 - Box 4.1 (CCA, 2017, p. 59), and
 - Tables 3.1 and 3.2 (CCA, 2017, p. 38)
3. Figure of Council Assessment process found on CCA website
 - <https://scienceadvice.ca/process/>

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