

Decolonizing Research Paradigms in the Context of Settler Colonialism: An Unsettling, Mutual, and Collaborative Effort

International Journal of Qualitative Methods
Volume 18: 1–16
© The Author(s) 2019
Article reuse guidelines:
sagepub.com/journals-permissions
DOI: 10.1177/1609406918821574
journals.sagepub.com/home/ijq


Mirjam B. E. Held¹

Abstract

All research is guided by a set of philosophical underpinnings. Indigenous methodologies are in line with an Indigenous paradigm, while critical and liberatory methodologies fit with the transformative paradigm. Yet Indigenous and transformative methodologies share an emancipatory and critical stance and thus are increasingly used in tandem by both Western and Indigenous scholars in an attempt to decolonize methodologies, research, and the academy as a whole. However, these multiparadigmatic spaces only superficially support decolonization which, in the Canadian context of settler colonialism, is a radical and unsettling prospect that is about land, resources, and sovereignty. Applying this definition of decolonization to the decolonization of research paradigms, this article suggests that such paradigms must be developed, from scratch, conjointly between Indigenous and Western researchers.

Keywords

cross-cultural research, decolonizing methodologies, decolonizing paradigm, Indigenous paradigms, knowledge system, methodological bricolage, paradigm proliferation, radical decolonization, way of knowing, worldview

Introduction

All scholarly research, whether explicitly stated or not, is informed by a research paradigm which in turn informs the methodology and the method(s) (Mertens, 2015). As there are multiple readings of our world, there are multiple paradigms. A research paradigm, also referred to as a philosophical stance (Crotty, 1998, p. 7) or a conceptual framework (Kovach, 2009, p. 39), is a philosophy, a worldview, that is, a set of metaphysical beliefs, assumptions, concepts, and values that informs the researcher's view of reality, what counts as knowledge and ways of knowing and guides research priorities, choices, and actions (Chilisa, 2012; Creswell, 2013; Mertens, 2015; Willis, 2007; Wilson, 2008). Paradigms are human constructions (Denzin, 2010; Guba & Lincoln, 1994). Their metaphysical assumptions, that is, basic beliefs, can only be believed, not proven (Guba & Lincoln, 1994). Currently, the worldview of a research paradigm is most commonly defined by the philosophical assumptions regarding ontology (the nature of reality), epistemology (what is knowledge and the nature of it), axiology (values), and methodology (purpose and process of research; e.g., Chilisa, 2012; Guba & Lincoln, 2005; Mertens, 2015; Wilson, 2008). The ontological, epistemological,

axiological, and methodological assumptions of a paradigm are logically and uniquely related and thus distinguish each paradigm (Guba & Lincoln, 1994).

There are many different paradigms under which social science and qualitative research is being conducted (Mertens, 2015). The most common ones are the postpositivist, constructivist (also known as interpretivist), transformative, and pragmatic paradigms. While they all stem from the Western, that is, Eurocentric, tradition, there is a growing, yet still limited awareness in the academy of the diversity of Eastern, African, and Indigenous research paradigms (e.g., Battiste, 2000; Chilisa, 2012; Denzin et al., 2008; Dutton, 2005; Kim, Yang, & Hwang, 2006; Liu, 2011; Loppie, 2007; Mertens et al., 2013; Rigney, 1999). Customarily, however, academia has almost exclusively been focusing on Western paradigms and approaches to research. Indigenous research paradigms might

¹Dalhousie University, Halifax, Nova Scotia, Canada

Corresponding Author:

Mirjam B. E. Held, Dalhousie University, 1355 Oxford Street, PO Box 15000, Halifax, Nova Scotia, Canada B3H 4R2.
Email: m.held@dal.ca



be considered as research objects but have not been accepted and respected as coequals within Western universities (Cajete, 2000). This manifestation of ontological oppression is a result of Western science being exported around the globe from Europe alongside imperialistic and colonial attitudes (Dutton, 2005; Liu, 2011).

In the late 20th century, Indigenous scholars across the globe started to critique Eurocentric dominance in research and academia and resisted it by articulating and thus reclaiming their peoples' research methodologies and paradigms (e.g., Battiste, 2000; Dei, 2000; Dei, Hall, & Goldin Rosenberg, 2000; Graveline, 1998; Irwin, 1994; Rigney, 1999; Smith, 2012). Today, the critique is louder than ever and has been extended beyond the ivory tower. In Canada, the recent release of the final report of the Truth and Reconciliation Commission (TRC) provides further impetus for a new approach to the collaboration between Indigenous and settler researchers and research subjects. Mandated by the Indian Residential Schools Settlement Agreement, the TRC was a 5-year forward-looking quest to document the truth of Indian residential schools survivors, their families and communities in order to inform all Canadians about what happened in Indian residential schools and guide them in a process of reconciliation and renewed relationships that are based on mutual understanding and respect (Indian Residential Schools Settlement Agreement, 2006, Schedule N). To advance this reconciliation process, the final report of the TRC included 94 calls to action, covering a vast array of areas of life from child welfare and health to justice and the media (TRC of Canada, 2015, p. 319–337). About a quarter of the calls to action are concerned with Indigenous ways of knowing as they relate to education and teaching, law and justice, and language and spirituality (TRC of Canada, 2015). The TRC of Canada (2015) further calls upon all levels of government in Canada to fully adopt and implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP). In 2007, after almost 25 years of deliberation by United Nations (UN) member states and Indigenous groups, UNDRIP was adopted by the UN to enshrine the rights that “constitute the minimum standards for the survival, dignity and well-being of the Indigenous peoples of the world” (Art. 43), including their rights to enjoy and practice their culture and customs, their religions and languages and to develop and strengthen their economies and their social and political institutions (UNDRIP, 2007). When UNDRIP was adopted by the UN in 2007, Canada, along with Australia, New Zealand, and the United States, voted against it. However, since 2010, Canada has been supporting the declaration with qualifications, and in 2016, finally signed it (Government of Canada, 2016). Of course, Canada's commitment to fully adopt and implement UNDRIP is only the beginning of a long journey to bring Canadian laws in line with the standards recognized and protected under UNDRIP (Fontaine, 2016; Wilt, 2017). Yet the adoption of UNDRIP and the commitment of the Liberal Government of Prime Minister Justin Trudeau to implement recommendations of the TRC and to engage in a renewed nation-to-nation relationship with Indigenous peoples

in Canada (Trudeau, 2015) are strong and promising starting points to ensure that Aboriginal and Treaty rights are honored and to engage in a collaborative and reciprocal process of reconciliation and decolonization.

To decolonize research paradigms and methodologies is to include Indigenous ways of knowing in academia, that is, to teach them, to use them in research, to value them as equal to Western approaches to knowing and to creating knowledge. There is a growing body of literature concerned with the justification and practicality of doing research at the interface of Western and Indigenous knowledge systems, both from Indigenous and non-Indigenous scholars who experiment with combining Indigenous and Western methodologies in their alternative interpretive research or in qualitative methods teaching (e.g., Battiste, 2000; Denzin et al., 2008; Gerlach, 2018; Getty, 2010; Hart et al., 2016; Knudson, 2015; Kovach, 2010; Mertens et al., 2013). Only very few, however, hint at the paradigmatic compatibility issues of the blending of two methodologies, each associated with a different paradigm (Chilisa, 2012; Chilisa, Major, & Khudu-Petersen, 2017; Cram & Mertens, 2015, 2016; Kovach, 2009, 2010; Mertens & Cram, 2016). The main cause for this is likely the fact that discussions about Indigenous methodologies and their relationship to research paradigms are relatively new and conducted under different labels (Chilisa & Tshelo, 2014).

There seem to be two streams of thinking when it comes to bringing together Western and Indigenous research approaches with the goal of decolonizing research. One group of authors argues that it is worth bringing the transformative paradigm and Indigenous paradigms into conversation with each other as they share certain assumptions and aspirations, although they are still far from being a comfortable fit (e.g., Mertens & Cram, 2016). The other perception is that Indigenous paradigms are so distinct from Western approaches that they cannot be subsumed under any paradigm in the current typology but need their own category within that typology in order to create a space for further engaging Indigenous and Western approaches to research (e.g., Chilisa, 2012; Dillard, 2006; Romm, 2015; Wilson, 2008). Many Indigenous scholars have expressed discomfort about having to shoehorn their approaches into Western categories (e.g., Kovach, 2010; Tuck & Yang, 2012; Wilson, 2008). Furthermore, Indigenous pathways to research are, due to their rootedness in the respective Indigenous worldview, not readily available to non-Indigenous researchers.

This article discusses the need for a third route where a new multiparadigmatic space is coproduced by Western and Indigenous scholars with the aspiration of true and full decolonization, understood as a mutual endeavor with an unpredictable outcome. I will first offer some background about myself and my research at the interface of Western and Indigenous knowledge systems. Further, I will provide a brief overview of the major research paradigms for social inquiry, both in Western social science and in Indigenous scholarship. As a way to bring Western and Indigenous pathways to research into equitable dialogue, I then call for—and discuss the necessity of—a new

ethical space to advance decolonization, ostensibly of research, methodologies, and academia, but generally of society and nations.

Positionality and Background

I am a white settler living on the unceded homelands of the Mi'kmaq. My interest in the Arctic and background in marine mammal science and marine resource management have led me to study fisheries management in Nunavut, currently as part of a PhD degree in the Interdisciplinary PhD Program at Dalhousie University. I am interested in this paradigm discourse as my research is situated at the interface of Western and Indigenous ways of knowing. My doctoral project investigates the relationships between Inuit and Western knowledge and management systems in Nunavut fisheries governance.

The research is part of a larger project called Fish-WIKS, which stands for Fisheries—Western and Indigenous knowledge systems. Fish-WIKS is a 5-year pan-Canadian partnership between Indigenous and Western research institutions and scholars which aims at understanding different knowledge systems,¹ how they influence the decision-making process in fisheries governance in Canada and how they, in tandem with alternative governance models, can enhance the current regime of decision-making within fisheries management in Canada. To that end, the project examines case studies from each of Canada's coastal regions (Atlantic, Arctic, Pacific, and inland). My contribution within this framework will be concerned with the Inuit worldview and fisheries management in the Territory of Nunavut.

Primarily based on the Western scientific knowledge, the current hierarchical fisheries governance regime in Canada has been found to be ineffective (Mora et al., 2009; Pauly et al., 2002), likely unable to adapt in due time to rapid changes induced by climate change (Brander, 2007; Prowse, Furgal, Wrona, & Reist, 2009) and at odds with the goal of implementing a holistic, place-based ecosystem approach to fisheries management as stated in the Oceans Act (1996; O'Boyle & Jamieson, 2006). Moreover, it disregards stakeholder demands for involvement in decision-making and the growing legal recognition of Aboriginal and treaty rights to resources and to managing them (cf. landmark court cases such as *Calder et al. v. Attorney-General of British Columbia*, 1973; *R. v. Sparrow*, 1990; *Delgamuukw v. British Columbia*, 1997; and *R. v. Marshall*, 1999). In contrast to Western science, Indigenous ways of knowing are based on a worldview and values that are place-based, relational, and composed of knowledge, beliefs, and practice (Reo, 2011). Indigenous knowledge cannot be separated into factual knowledge, ecological knowledge, spirituality, or other components; it is holistic (Houde, 2007; Reo, 2011). Thus, it includes guidance for appropriate conduct and for environmental governance based on the local cosmology (Battiste & Henderson, 2000; Houde, 2007; Whyte, 2013).

In doing research at the interface of ways of knowing, decision-making and fisheries management in a political framework fraught with settler colonial tensions, the Fish-

WIKS team needs to be vigilant that their research does not become another expression of colonial prejudice that reinforces uneven and biased power relations (Latulippe, 2015). Pitfalls include focusing the analysis on differences between Western and Indigenous ways of knowing (Simpson, 2007), the evasion of addressing epistemic racism (Nadasdy, 1999), or using Indigenous knowledge solely to corroborate and complement Western scientific knowledge (Houde, 2007; Nadasdy, 1999; Shackeroff & Campbell, 2007). Working with both an Indigenous knowledge system and Western science also has methodological implications, for with different ways of knowing come different philosophical assumptions and worldviews. Can I as a white settler scholar use an Inuit methodology? Can I use an Indigenous methodology under a Western research paradigm, preserving the integrity of each? Or what is the role of non-Indigenous scholars in Indigenous-centred research, as Chilisa, Major, and Khudu-Petersen (2017) ask. Before I discuss these questions, I will briefly specify the major paradigms currently available for qualitative social science research.

Philosophical Orientations of Social Inquiry

Research paradigms are not given but constructed (Denzin, 2010; Guba & Lincoln, 1994). They help us make sense of the world as it relates to scientific inquiry by guiding the research process from conception to the dissemination of results. Well into the second half of the 20th century, social science research was predominately carried out under a positivist or postpositivist philosophical orientation (Mertens, 2015). Yet in recent decades, there has been a proliferation of paradigms, both in Western (cf. Creswell, 2013; Guba, 1990; Guba & Lincoln, 1994, 2005; Lather, 2006; Lincoln & Guba, 2000; Lincoln, Lynham, & Guba, 2011; Mertens, 1998, 2005, 2010, 2015) and Indigenous scholarship (cf. Battiste, 2000; Brown & Strega, 2005; Buntu, 2013; Chilisa, 2012; Chilisa et al., 2017; Dei et al., 2000; Mertens & Cram, 2016; Mertens et al., 2013; Styres, 2017). The general trend has been away from the dominant and mainstream toward the margins, that is, the marginalized.

Western Research Paradigms

The advancement of Western science and the evolution of theories of knowledge went hand in hand. Positivism (or empiricism), borrowed from the natural sciences, was adapted to the postpositivist research paradigm. Later, the constructivist (or interpretivist) paradigm emerged to describe and understand human experience, while the transformative paradigm unites a number of different research frameworks that are brought together by the paradigm's explicit engagement with issues of power and justice (Guba & Lincoln, 1994, 2005; Mertens, 2015). The pragmatic paradigm facilitates the mixing of quantitative and qualitative research methods. Traditionally, these paradigms have been viewed as successor regimes, with emerging paradigms replacing established ones in "paradigm shifts," times of crisis in which the "normal" is replaced by

formerly “revolutionary science” (Kuhn, 1962). More recent accounts of the history of science argue against linearity in the development of paradigms and for proliferation (e.g., Dillard, 2006; Harding, 1991; Lincoln et al., 2011) in an attempt “to capture the play of both the dominant and emergent knowledges vying for legitimacy [. . .]” (Lather, 2006, p. 36). The philosophical underpinnings of the most common research paradigms employed in social inquiry today are summarized in Table 1. I organized the paradigms in a chronologically linear way, yet as discrete entities in order to highlight their incompatibilities.

The positivist and postpositivist paradigms with their realist ontology and an axiology that positions research as value free are ill-suited for research at the interface of Western and Indigenous ways of knowing. Constructivist research is about understanding subjective meanings of others’ lived experiences (Creswell, 2013). While there is “respect for and fidelity to the life world” which hints at an ethical commitment according to Schwandt (2000, p. 193), constructivism does not take a critical stance, for even though it is value influenced, it cannot be value driven due to its relativist assumptions (Gergen, 2001; Nelson & Prilleltensky, 2010).

Research as a means for social emancipation is informed by the transformative paradigm whose four basic beliefs are (i) a historical ontology constructed on the basis of issues of power, that is, a reality shaped and refined over time by social, political, cultural, economic, ethnic, gender, and disability values, this reality is either seen as “real” and apprehendable (e.g., Guba & Lincoln, 1994, 2005) or as a set of multiple, intersubjective realities (e.g., Chilisa, 2012; Lather, 2006; Mertens, 2015); (ii) an intersubjectivist, experiential and transactional epistemology in which knowledge is socially and historically situated, understanding is dialectical, and findings are value mediated; (iii) an axiology that positions research as a means for social emancipation (i.e., research is not only value-laden but informed by values, particularly power structures); and (iv) a dialogic/dialectical methodology informed by a transformative theory such as Marxism, critical theory, feminist theories, Freirian theory, queer theory, disability theories, and decolonizing discourses (Chilisa, 2012; Guba & Lincoln, 1994, 2005; Lather, 2006; Mertens, 2015; Nelson & Prilleltensky, 2010). These assumptions are fluid due to the diverse and emerging character of the paradigm (Mertens, 2015). While the transformative paradigm is still a Western approach, it is value driven due to its interest in power relations and thus has the potential to be more inclusive of other, including non-Western, epistemologies, and ontologies (Cram & Mertens, 2015, 2016).

The pragmatic paradigm has been proposed by several scholars in the field of mixed methods to account for the seemingly impossible merging of quantitative and qualitative methods and thus different methodologies and paradigms, namely, the postpositivist and constructivist paradigms (Creswell, 2011; Teddlie & Tashakkori, 2003). Emphasizing the importance of common sense, pragmatism is less metaphysical and more practical than other research paradigms; it provides an alternative that almost exclusively acts upon the research question

(Shannon-Baker, 2016; Teddlie & Tashakkori, 2003). The pragmatic paradigm is thus characterized by (i) an emphasis of the intersubjectivity of social life, (ii) a perspective that allows the researcher to study whatever is of interest or value, (iii) an ethical goal of research that limits itself to gain knowledge in the pursuit of desired ends, and (iv) the freedom to choose whatever method or combination of methods (often the complementing of quantitative and qualitative methods) that are most appropriate for answering the research question (Mertens, 2015; Morgan, 2007; Teddlie & Tashakkori, 2003). More recently, however, there have been attempts to move away from reducing the pragmatic paradigm to practicality by connecting mixed-methods research with pragmatism as a philosophy (cf. Morgan, 2014). If in line with the metaphysical beliefs of the transformative paradigm, mixed-methods research can also be undertaken under this philosophical framework (Mertens, 2015; Shannon-Baker, 2016).

Indigenous Research Frameworks

Indigenous ways of knowing and frameworks for knowledge production have been developed, used, and refined for millennia (e.g., Cajete, 2000; Chilisa, 2012; Okalik, 2013; Shroff, 2000; Wilson, 2008). Yet under colonial rules, research became one of the dirtiest words for Indigenous peoples (Smith, 2012) as they quickly counted among the most researched human groups (Rigney, 1999; Smith, 2005, 2012). Natural scientists explored and examined Indigenous territory to exploit its natural resources for profit, while social scientists studied Indigenous peoples to find solutions for “Indigenous problems” and inform government policy (Martin, 2003; Wilson, 2008). Such research was carried out by non-Indigenous scholars who used a colonial worldview as their frame of reference (Coomer, 1984, as cited in Wilson, 2008, p. 50; Smith, 2005). The research was often exploitative, not done for the Indigenous communities, let alone by them or on their terms. In some cases, the research among Indigenous peoples was not only aimed at assimilating them into the dominant society but invasive and unethical, such as the skin grafting experiments undertaken on Inuit from Iglulik in the early 1970s without their individual and continuous consent (Dossetor, 2005; Wachowich, Awa, Katsak, & Katsak, 1999).

During and following a phase of particularly intense research on Indigenous peoples in the wake of the spreading of the human rights movement in the 1970s, Indigenous communities and scholars began to openly criticize the continued colonizing approaches, practices, and role of Western research (Denzin & Lincoln, 2008a; Smith, 2005; Wilson, 2008). They challenged the customary research paradigms by articulating their own perspectives on Indigenous research, including research guidelines and protocols. As Indigenous paradigms were expressed, they were also made known to a wider audience, including non-Indigenous scholars. The goal was to develop research paradigms that were culturally safe and respectful (Martin, 2003; Rigney, 1999), privileged Indigenous knowledge, experiences, and voices and thus took an

Table 1. Philosophical Assumptions of the Major Paradigms That May Inform Social Inquiry.

	Positivist (Empiricist)	PostPositivist (Critical Realist)	Constructivist (Interpretivist)	Transformative (Formerly Critical Theory)	Pragmatic	Indigenous
Ontology	Realist; one knowable reality	Critical realist; one reality, but only probabilistically knowable	Relativist; multiple, socially constructed realities	Historical/social realism; multiple, socially and historically shaped realities	Realist; unique individual interpretations of the one reality	Relativist, relational; multiple, socially constructed realities, mutual reality based on multitude of relationships
Epistemology	Objectivist, empirical; research findings are true	Objectivist, empirical; findings are probably true	Subjectivist, experiential; findings are created; idiographic, that is, contextual	Intersubjective, experiential; value-mediated findings; knowledge is socially and historically situated; dialectical understanding	Dependent on particular study	Intersubjective; experiential, knowledge is relational
Axiology	Values excluded; influence denied	Values excluded; influence denied	Values included; formative	Values included; formative, research a means for social emancipation; solidarity with the oppressed	Dependent on context/particular study	Values included; formative, research guided by relational accountability that promotes respectful representation and reciprocity
Methodology	Experimental/manipulative; correlational; quantitative, verification of hypotheses; decontextualized	Modified experimental/manipulative; falsification of hypotheses; decontextualized	Hermeneutical/dialectical; qualitative, contextualized	Dialogic/dialectical: qualitative or mixed methods; informed by theories (e.g., feminist theories, postcolonial discourse), political; contextual, participatory	Approaches matched to questions and purposes of research; predominantly mixed methods	Participatory, liberatory, transformative; positioned in Indigenous knowledge systems

Source: Adapted from Chilisa (2012), Guba and Lincoln (2005), Mertens (2015), and Wilson (2008), with Botswana scholar Bagele Chilisa being the only one to include the Indigenous research paradigm in her list of paradigms.

emancipatory and liberatory stance (Rigney, 1999). The “history of exploitation, suspicion, misunderstanding, and prejudice” (Rigney, 1999, p. 117) was to be disrupted by “engaging in a counterhegemonic struggle over research” (Smith, 2005, p. 87). Indigenous research is most commonly defined as research by Indigenous scholars on, for, and with Indigenous communities (Bishop, 2005; Wilson, 2008). As such, it is rooted in the respective Indigenous worldview and promotes self-determination of the community.

The earliest Indigenous research paradigms, articulated in the 1990s, were the Kaupapa Māori approach to research among the Māori in New Zealand (cf. Bishop, 2005; Irwin, 1994; Mane, 2009; Smith, 2000, 2005, 2012, Smith, G., 1997, as cited in Mane, 2009; Walker, Eketone, & Gibbs, 2006) and the so-called Indigenist research paradigm proposed for Australian Indigenous peoples (Martin, 2003; Rigney, 1999). Later, research paradigms by and for North American Indigenous peoples were presented such as Garroutte’s (2003) radical Indigenism approach to American Indian scholarship, paradigms based on the Medicine Wheel (e.g., Dumbrill & Green, 2008; Graveline, 2000) and Cree philosophies (e.g., Hart, 2010; Kovach, 2009; Wilson & Wilson, 2013), and the petal flower framework by Anishinaabe scholar Kathleen Absolon (2011). In recent decades, Indigenous research paradigms based on African, Latin American, and Pacific metaphysics have also been articulated (e.g., Buntu, 2013; Meyer, 1998; several contributions in Mertens et al., 2013).

By developing and expressing Indigenous research paradigms and methodologies, Indigenous scholars from around the world are reclaiming research, and with it knowledge, language, and culture, for their peoples. Regaining control over research by reframing it under their worldviews is an act of resistance to racist and colonial oppression (Martin, 2002, as cited in Rigney, 1999; Steinhauer, 2002). This decolonization of research is part of a liberation struggle that promotes “spaces of recovery, healing, and development” (Zavala, 2013) and pursues recognition, self-determination, and power (Rigney, 1999; Smith, 2012).

Decolonizing Western research is the common reason for articulating and using Indigenous research approaches. This resistance is rooted in a history of colonization, racism, and oppression that is a shared suffering among Indigenous peoples (Chilisa, 2012; Smith, 2012; Wilson, 2008). A commonality among various Indigenous paradigms regarding content is that their ontologies, epistemologies, axiologies, and methodologies are rooted in the land, in the local (Davis, 1999, as cited in Davis, 2006; Dei et al., 2000; Henderson, 2000; Little Bear, 2000; Strang, 1997; Whitt, 2009). Likewise, all Indigenous methodologies and epistemologies are forms of critical pedagogy in that “they embody a critical politics of representation that is embedded in the rituals of indigenous communities” (Denzin & Lincoln, 2008a, p. 3). Despite their localized roots, Indigenous research paradigms have been found to be surprisingly similar across the world in terms of their common understanding of interconnectedness and interdependence (Graveline, 1998; Kovach, 2009; Steinhauer, 2002). Other

recurring tenets are long-term perspectives, adaptation to change, and commitment to the commons (Kawagley & Barnhardt, 1999). This metaphysical consistency among Indigenous world views has been speculated to be in fact a consequence of Indigenous thought and identity being shaped by the close relationship of Indigenous peoples with the environment (Henderson, 2000; McKenzie & Morrissette, 2003).

Based on the substantial congruence among the worldviews of different Indigenous peoples, some Indigenous scholars have, informed by several Indigenous perspectives, proposed more generic and thus more universally applicable Indigenous research paradigms (e.g., Chilisa, 2012; Wilson, 2008). Others, however, have questioned such pan-Indigenous approaches. Based on her own research journey, Kovach (2009) deemed them too general and thus not practical. I agree with Kovach that, for on-the-ground research, a generic Indigenous worldview is of little service as one has to work with the local beliefs and assumptions that constitute the respective research paradigm. However, I follow Chilisa (2012) in focusing on “the shared aspects of ontology, epistemology, axiology, and research methodologies of the colonized Other” in order to position a more universal version of an Indigenous research paradigm vis-à-vis the Western paradigms (p. 20).

The metaphysical assumptions of such a general Indigenous research paradigm are commonly expressed as these four basic beliefs (summarized in Table 1): (i) a relativist (there are multiple, socially and historically shaped realities) and relational ontology (mutual reality based on multitude of relationships); (ii) an intersubjective and relational epistemology in which knowledge is relational, that is, based on a multitude of relationships (in Indigenous philosophy, there is no clear distinction between ontology and epistemology due to their relationality); (iii) an axiology that promotes respectful representation and reciprocity through relational accountability; and (iv) a participatory, liberatory methodology that is relational and transformative (Chilisa, 2012; Wilson, 2008).

The expression of a research paradigm as a set of four basic beliefs is in itself a Western approach but has been adopted and adapted by a number of Indigenous researchers (e.g., Hart, 2010; Wilson, 2008). This could well be a temporary phenomenon, for Indigenous research paradigms are only emerging and scholars are still trying to find the most appropriate form for them. But as Wilson (2008) remarked, “it is the uniqueness of these four elements that in part hold an Indigenous research paradigm apart from other research paradigms” (p. 71). Clearly, relationality is the central element of Indigenous worldviews and thus Indigenous research paradigms. This also means that knowledge is collective rather than individualistic and includes the spiritual world, the entire cosmos (Wilson, 2008).

Decolonizing Methodologies, Decolonizing Paradigms

Over the last three decades, Western research paradigms have multiplied while being reshaped and refocused to become more

inclusive, more diverse and more political (Battiste, 2000; Bishop, 2005; Brown & Strega, 2005; Denzin & Giardina, 2007; Dillard, 2006; Guba & Lincoln, 1994; Lather, 2006; Mutua & Swadener, 2004; Smith, 2012). It has been—and still is—an era of emancipation; “. . . emancipation from hearing only the voices of Western Europe, emancipation from generations of silence, and emancipation from seeing the world in one color” (Lincoln et al., 2011, p. 125). This process resulted in the transformative and Indigenous paradigms sharing several philosophical assumptions such as an ontology based on multiple socially constructed realities, an intersubjective and experiential epistemology, and an emancipatory axiology as both paradigms take a critical and liberatory stance (see Table 1). Nevertheless, there are still major differences, if not irreconcilabilities, between Western and Indigenous approaches to research. One of the most striking differences is the absence of relationality in all of the major Western paradigms compared to Indigenous paradigms that are universally characterized by axioms that are all relational (Chilisa, 2012; Louis, 2007; Wilson, 2008). While both a Western and an Indigenous methodology may be transformative and participatory, the two are nevertheless based on very different paradigms.

Traditionally, Western scholars have used Western methodologies based on Western paradigms, while Indigenous research paradigms, based on Indigenous axioms, have generally been put forward by Indigenous scholars for Indigenous scholars. Yet the process of decolonizing methodologies has brought Western and Indigenous methodologies closer together. Smith (2012) advocates that decolonizing traditional Western research methodologies means indigenizing them by inserting Indigenous principles into research methodology so that research practices can play a role in the assertion of Indigenous peoples’ rights and sovereignty. According to Chilisa (2012), such an approach is resistance to Western research and “a process of centering the concerns and worldviews of the colonized Other so that they understand themselves through their own assumptions and perspectives” (p. 13). In other words, decolonizing Western methodologies means locating power within the Indigenous community (Denzin & Lincoln, 2008a).

To decolonize methodologies can mean that Indigenous scholars are indigenizing research by adopting and adapting Western methods and methodologies (so that they are culturally sensitive and safe) under an Indigenous research paradigm (e.g., Kovach, 2010; Loppie, 2007; Pelletier Sinclair, 2003) or that non-Indigenous scholars try to incorporate Indigenous methodologies, epistemologies, or axiologies into their Western research approaches (e.g., Gerlach, 2018; Jackson-Barrett, Price, Stomski, & Walker, 2015; Mertens, 2012). In the latter case, strategies of partnership and collaboration with the Indigenous community help ensure that the research undertaken is culturally appropriate (Cram, 1997; Simonds & Christopher, 2013; Smith, 2012). But can an Indigenous methodology be used under a Western research paradigm? Can a Western methodology be employed under an Indigenous paradigm? Not when methodology is understood as Guba and Lincoln

(2005) view it, namely as a crucial part of a research paradigm that is informed by it and in return determines it, being linked in a reciprocal interdependence. An Indigenous methodology is informed by an Indigenous paradigm which is fundamentally different from the transformative paradigm, even though they share commonalities such as an intersubjectivist and experiential position regarding their epistemology and emancipatory/liberatory aspirations (Chilisa, 2012; Mertens, 2015; Wilson, 2008). Paradigms are overarching philosophical systems that represent belief systems or world views; thus, according to Denzin and Lincoln (2008b), one’s research can only be guided by one paradigm, and one cannot move between them *ad libitum* (p. xx). I might seem to share this view that focuses on the incommensurability of different research paradigms. In my brief overview, I have treated them as metaphysical stances that inform the entire research process. Listing their philosophical assumptions regarding ontology, epistemology, axiology, and methodology in a table where individual boxes are separated by solid lines (see Table 1) further highlights the paradigms’ incommensurability (Morgan, 2007). But who gets to define the boxes, that is, the assumptions and the paradigms themselves? Why do Guba and Lincoln (1994, 2005) end up listing five paradigms, while Mertens (2015) also lists five, yet a different set? Why did I choose to include in my list the pragmatic paradigm which is not typically included in listing research paradigms (cf. Chilisa, 2012; Guba & Lincoln, 2005; Wilson, 2008)?

Because paradigms are fluid scholarly constructs that are not homogeneously applicable to the entire research community. In his seminal work, *The Structure of Scientific Revolutions*, Kuhn (1962) defined paradigms “to be universally recognized scientific achievements that for a time provide model problems and solutions to a community of practitioners” (p. x). Thus, a paradigm is nothing static nor is it applicable to any and all researchers. According to Kuhn’s original definition, a paradigm can either change over time or fall out of fashion. Further, it provides guidance about which questions to ask and how to answer them only to a smaller subset of researchers, namely a scholarly community that works from the same theoretical and empirical background (Kuhn, 1996, as cited in Morgan, 2007). Or as Morgan (2007) put it, paradigms can be seen “as shared beliefs among members of a specialty area” (p. 53). While this view was first put forward for Kuhn’s linear paradigm shift model in which a new paradigm replaces and older one, it is equally applicable to the proliferation perspective.

Thought and theories that were to be developed into non-positivist research paradigms for qualitative social inquiry emerged in the 1960s and 1970s (Denzin & Lincoln, 1994, 2000, 2005). While the development of the postpositivist, constructivist and what is now often called the transformative paradigm was characterized by a number of defining crises (Denzin & Lincoln, 1994, 2000, 2005), the emergence of mixed methods, specifically the combining of quantitative and qualitative methods, led to confrontations that are now known as “paradigm wars” (Denzin, 2010; Teddlie & Tashakkori, 2003). Researchers have employed mixed methods since the early

days of qualitative inquiry in the 1900s, but explicit multi-method research designs did not emerge until the 1960s (Teddlie & Tashakkori, 2003). In the 1980s, mixed methods that combined quantitative and qualitative methods seemingly had no place in methodological scholarship as their respective paradigms, that is, postpositivism and constructivism, were deemed incompatible (Denzin, 2010). Then, some scholars of this specialty area took their shared conviction, namely that they should have the freedom to choose whatever method or combination of methods is most appropriate for answering the research question, and created the pragmatic paradigm (for a more detailed account of the history of mixed methods, see Denzin, 2010; Teddlie & Tashakkori, 2003).

This pragmatic move allowed them to combine methods and thus methodologies that were previously (and still, by some scholars) believed to be irreconcilable. From a paradigm incompatibility perspective, merging Western and Indigenous methodologies is equally impossible. Can the pragmatic paradigm thus provide a framework under which transformative and Indigenous methodologies can be used in combination? Not directly. The pragmatic paradigm was constructed to provide the flexibility to make quantitative/qualitative mixed-methods research legitimate from a philosophical/theoretical point of view. Early pragmatism (in the late 19th and early 20th centuries) was a philosophical movement that emphasized research as a social endeavor (Maxcy, 2003). Today, issues of power are still important to researchers who practice mixed-methods research in the context of feminist approaches (e.g., Hesse-Biber, 2010; Hesse-Biber & Griffin, 2015) or to generally challenge dominant views of reality (e.g., Hesse-Biber, 2010; Mertens, Bledsoe, Sullivan, & Wilson, 2010). Yet often, current practices of mixed-methods research under the pragmatic paradigm lack a true axiological stance, either overlooking or ignoring questions of ethics or value (Biddle & Schafft, 2015, p. 323; Teddlie & Tashakkori, 2009, p. 90). Research, however, is always already political (Denzin & Lincoln, 2008b, p. xi) and thus any paradigm that guides transformative/Indigenous research—which is inherently emancipatory/liberatory—needs to include values and let them play a formative role. Still, the creation of the pragmatic paradigm can provide a model for rejecting the “either-or” of two seemingly incommensurable paradigms.

The transformative paradigm is based on a Western worldview, while Indigenous paradigms are rooted in a holistic, localized worldview. Nevertheless, they share many of their philosophical underpinnings. Another common tenet are decolonizing aspirations. These, however, are more than just another social justice issue. Decolonization is, by default, an unsettling enterprise and therefore “cannot easily be grafted onto pre-existing discourses/frameworks” as stated by Tuck and Yang (2012, p. 3). In the Canadian context of settler colonialism, decolonization is about land, resources, sovereignty, and self-determination (Tuck & Yang, 2012); as such, it involves the creation of a new social order. Thus, it is a mutual undertaking involving the colonizer and the colonized (Beeman-Cadwallader, Quigley, & Yazzie-Mintz, 2011). I

suggest applying this radical interpretation of decolonization to the decolonization of research in order to advance the discussion on multiparadigmatic research spaces. Radically decolonizing research means that any decolonizing research paradigm must be developed conjointly between Western and Indigenous researchers, creating a new research framework altogether. It also means that decolonizing paradigms is not a means to an end (e.g., to provide alternative pathways to research or to make the research endeavor more inclusive and diverse), but just a small piece in the puzzle that is the decolonization project, which is ultimately a radical social reform. Decolonizing research under these premises will be an unsettling collaboration with fraught solidarity (Tuck & Yang, 2012) and an unknown outcome.

Discussion

Decolonization is a long-term process involving the bureaucratic, cultural, linguistic, and psychological divesting of colonial power (Smith, 2012) by undoing “the privileging of dominant Euro-centred cultural values and beliefs in education, scholarship, knowledge production, the legitimization of intellectual capital, and the networks and systems of power” (Styres, 2017, p. 19). It is about reinventing the coexistence of the currently dominant society, more recent settlers and the Indigenous peoples by redefining where power is located. This shift will include allowing the colonized to view and understand themselves through their own worldviews (Chilisa, 2012, p. 13). There is a progression to this process. Based on the experiences in his native Hawaii, Laenui (2000) identified five stages of the decolonization process: rediscovery and recovery, mourning, dreaming, commitment, and action. These phases share overlaps, and can happen at the same time and in various combinations (Laenui, 2000). Laenui’s phases were formulated for Indigenous or other colonized peoples; however, the decolonization of the dominant society will similarly proceed in stages. With dominance comes privilege; in order to undo white privilege, we need to thoroughly understand it (Land, 2015, p. 31). Thus, for the colonizer, too, the action phase will have to be preceded by a clear comprehension of the past and the status quo, before the hegemonic concept of European/Western thought can be challenged and a more equitable and collaborative future envisioned and attempted.

The notion that “there are no spaces that are not colonized” (Anderson, 2004, p. 239) reinforces the need for decolonization to be an all-encompassing and collaborative effort. It does not mean, however, that the perpetrators and the victims play the same role; the burden is with the dominant society who has to take responsibility for its actions (see Getty, 2010, p. 7; Tuck & Yang, 2012, p. 35). Societal structures are either colonizing or liberatory. The shift from the former to the latter will be an unsettling and challenging process that, at best, will lead to mutual understanding, healing, and, ultimately, a postcolonial coexistence and collaboration. I interpret this postcolonial future as an era when the current ongoing oppression and marginalization of Indigenous peoples (collectively and

individually) as a result of colonialism has been redressed and the former colonizer and the formerly colonized have found a balance that honors the Treaty rights, Aboriginal rights, and the individual and collective rights of Indigenous peoples as enshrined in the UNDRIP. The Canadian government is committed to acting upon the calls to action put forward by the TRC (Trudeau, 2015) and has indeed recently become a full signatory of the UNDRIP (Government of Canada, 2016). But when it comes to implementing deeds that advance reconciliation and decolonization on the ground, there has so far been much more talk than walk. While a change in rhetoric around Canada's colonial past and neocolonial present is a start, only the implementation of the demands for—and rights to—indigenization, self-determination, and equality will lead to real change.

This postcolonial prospect as envisioned by decolonization is not to be confused with the term postcolonialism that is currently in use in academia. Influenced by postmodernism and poststructuralism (Anderson, 2004), postcolonialism or postcolonial theory is “a critical theory that provides a way of deconstructing colonialism and its historical effects on the colonized,” as summarized by Getty (2010, p. 7). Helping to reveal the unequal power relations of past and present colonialism, postcolonial theory has been used by non-Indigenous scholars to analyze and critique the impacts of colonialism (Browne, Smye, & Varcoe, 2005). However, the approach is rather descriptive and does not reflect Indigenous ways of knowing (Getty, 2010); thus, Indigenous scholars have criticized its failure to support decolonization and Indigenous self-determination (e.g., Grande, 2000; Kovach, 2010; Smith, 2012). Decolonizing approaches, on the other hand, are not satisfied with describing and critiquing unequal power relations stemming from colonialism, they strive to undo them.

In terms of decolonizing methodologies, Indigenous scholars made the first step by reviving, articulating, and using Indigenous methodologies and research paradigms for their research (e.g., Bishop, 2005; Graveline, 2000; Hart, 2010; Kovach, 2009; Rigney, 1999; Wilson, 2008). Based on local and relational worldviews, these paradigms, however, are only accessible to the respective Indigenous communities. Non-Indigenous scholars who support the self-determination of Indigenous peoples—also referred to as allied others—then tried to incorporate Indigenous ways of knowing and knowledge production into their research but still worked from a Western paradigm (e.g., Jackson-Barrett et al., 2015; Mertens, 2012). Many scholars engaged in research that tries to bridge Western and Indigenous approaches have expressed frustration over the fact that the ethical space of such research is ill-defined. Particularly, graduate student researchers (both Indigenous students and allies) who wish to embark on decolonizing research have to stem a lack of guidance and understanding, be it from advisory committees, ethics boards, university legal services, or granting agencies which are still often biased toward Western research approaches (cf. Kovach, 2009; Kuokkanen, 2007; Simonds & Christopher, 2013; Snow, 2018; Styres, Zinga, Bennett, & Bomberry, 2010).

Both allies and Indigenous scholars are in search of a research ethics that is feminist, caring, communitarian, holistic, respectful, mutual (i.e., power balanced), sacred, and ecologically sound (Lincoln & Denzin, 2008, p. 569). In this quest, an increasing number of authors has developed thought around a new multiparadigmatic space that combines elements of the transformative and of an Indigenous paradigm. Indigenous scholars from around the world have put forward indigenized paradigms that are based on Indigenous perspectives and philosophical assumptions: examples are the Kaupapa Māori research approach (e.g., Bishop, 2005; Mane, 2009; Smith, 2000), Rigney's (1999) Indigenist research paradigm for Australian Indigenous peoples, research frameworks developed by North American Indigenous peoples (e.g., Graveline, 2000; Hart, 2010; Kovach, 2009; Wilson, 2008) and by African scholars such as Chilisa's (2012; Chilisa et al., 2017) postcolonial Indigenous research paradigm and Afrikology as a transdisciplinary approach (Buntu, 2013; Nabudere, 2011, 2012). Another transdisciplinary pathway is two-eyed seeing, coined by Mi'kmaq Elder Albert Marshall and first developed as a colearning journey that weaves together Indigenous and Western knowledges in science education (Bartlett, Marshall, & Marshall, 2012).² These Indigenous paradigms can be used by Indigenous and non-Indigenous researchers alike, for, as Chilisa et al. (2017) posit, paradigmatic positions need not be treated in exclusivist terms, that is, that the use of one precludes thinking in terms of the other. Recognizing the need for diversity among the current “big four” (Dillard, 2006) Western research paradigms (postpositivist, constructivist, transformative, and pragmatic), Indigenous and Western scholars have called for the inclusion of a fifth paradigm, one based on non-Western perspectives, be they African, Eastern, African American, or Cree (e.g., Buntu, 2013; Chilisa, 2012; Chilisa et al., 2017; Dillard, 2006; Romm, 2015; Russon, 2008; Wilson, 2008).

Another approach to bringing transformative and Indigenous paradigms into dialogue is by extending the metaphysical umbrella of the transformative paradigm to include Indigenous research, as first proposed by Mertens and Wilson (2012). Donna Mertens and Māori scholar Fiona Cram have since further developed this framework for application in mixed- and multimethod research (Cram & Mertens, 2015) and in evaluation (Cram & Mertens, 2016). In both papers, they meticulously lay out the axiological, ontological, epistemological, and methodological assumptions of the transformative paradigm and compare them with the respective underpinnings of various Indigenous paradigms. While there are many commonalities among the two sets of philosophical assumptions (such as the importance of relationships and reciprocity, the multifaceted nature of reality, the relationality of knowledge, and giving voice to the oppressed), Cram and Mertens (2015, 2016) make no secret of the fact that the alliance between the transformative and an Indigenous paradigm is “not an entirely comfortable fit” and that it “may or may not be acceptable to Indigenous researchers,” especially in light of their decolonization aspirations (Mertens & Cram, 2016, p. 186).

Both approaches seem to share the same pattern of compromise, namely to stick with either an Indigenous or the Western transformative paradigm and to make just as many adaptations as necessary to let researchers from the other pathway participate. Because of these positions, both approaches—the addition of a fifth paradigm and the inclusion of Indigenous research under the transformative paradigm—are only superficially decolonizing Western research. Discussing their post-colonial, African-based relational paradigm, Chilisa et al. (2017) admit that their framework is a continuum that ranges from predominantly Indigenous methodologies to integrative approaches (an example given is the Western/Indigenous research on cancer healing systems among the Maya of Guatemala conducted by Berger-González, Stauffacher, Zinsstag, Edwards, & Krütli, 2015) to least indigenized methodologies and thus can be applied with limited attention to the decolonization of research, let alone the bigger decolonization project. The ever expanding umbrella of the transformative paradigm, on the other hand, has been criticized by Indigenous researchers as yet another subsumption of Indigenous research approaches under Western paradigms (e.g., Dillard, 2006; Tuck & Yang, 2012). I agree with Mertens and Cram (2016) that it is the history of colonization that makes the alliance between the transformative and Indigenous agendas an uneasy solidarity at best. Naming is claiming (Smith, 2012), and thus the label given to a paradigm also needs to be considered. Regardless of how it has evolved or how it will further develop, the transformative paradigm emerged as a Western research pathway. This makes it unsuitable territory for radical decolonization.

As decolonization is a mutual process, the next step in decolonizing research paradigms needs to be the co-creation of a multiparadigmatic space form which both Indigenous and non-Indigenous researchers can undertake research at the intersection of Indigenous and non-Indigenous ways of knowing that is not only emancipatory and culturally adequate but supports the radical changes needed to advance true decolonization. Denzin, Lincoln, and Smith (2008) hinted at this future paradigmatic space in their handbook of critical and Indigenous research methodologies in which they proposed a new methodology, along with a borderland epistemology and a set of interpretive practices. Their critical indigenous pedagogy, a blending of Indigenous and critical methodologies, is decolonizing, critical, and emancipatory, it values research as political and moral, and strives for social justice (Denzin & Lincoln, 2008a, p. 2). Seeking dialogue and conversation between Indigenous and non-Indigenous discourses, Denzin and Lincoln (2008a) elaborate on why the bringing together of Indigenous and critical methodologies is imperative and emphasize that research and methodologies aimed at justice and equity have to relinquish inquiry that is guided only by a single paradigm (p. 2). With regard to Indigenous and non-Indigenous worldviews, Hart (2010) concludes that worldviews, that is, paradigms, are not either Indigenous or non-Indigenous, but fluid, “with strong overlaps and great chasms” (p. 11). While the overlaps are easy to reconcile, the chasms hint at the incommensurable aspects of two different paradigms.

I see my contribution as a way of engaging the “ethical space,” which, according to Ermine (2007), “is formed when two societies, with disparate worldviews, are poised to engage each other” (p. 193). This engagement is paramount for the advancement of the decolonization process; it cannot stop at the methodological level but has to include ethics, research paradigms, and worldviews as well as our social, educational, political, and judicial institutions. This is especially true for the academy, a place that continues to privilege Western knowledges over any other epistemologies. Decolonizing methodologies emerged from Indigenous scholarship; thus, they are seldom taught at Western universities (Braun, Browne, Ka’o-pua, Kim, & Mokuau, 2014). Yet decolonizing research cannot only be concerned with methodologies, it has to permeate all of academia, for “decolonizing research strategies are less about the struggle for method and more about the spaces that make decolonizing research possible” as Zavala (2013, p. 55) concludes. Coproducing what it means to decolonize research in a multiparadigmatic approach is one possible solution of providing this space.

As the place from which the vast majority of research endeavors originate, academic institutions have a central role to play in the decolonization process. For in the colonial project, academia is a powerful tool to institutionalize, legitimize, and disseminate the ideologies of the dominant group. On the other hand, academia has the potential to challenge the hegemonic structures of the dominant society (Spivak, 1991, as cited in McDowell & Hernández, 2010), specifically “the dominance of Eurocentric discourses [that] has historically precluded an examination and acceptance of Indigenous knowledge” (Browne et al., 2005, p. 23). According to McDowell and Hernández (2010),

[a] decolonizing agenda in the academy does not routinely dismiss Western science [. . .], but contributes to just practices and cultural democracy through (a) critiquing and challenging colonial agendas, (b) acknowledging the legitimacy of indigenous and previously subjugated knowledge and performance, and (c) centering liberation-based healing practices. (p. 94)

Ultimately, abolishing Western epistemological dominance is a global challenge of “decolonising the mind” (Ngũgĩ wa Thiong’o, 1986). A first and important step on the way to empowering and emancipating Indigenous peoples vis-à-vis the dominant society; to true (research) collaboration; to a better understanding of each other; each other’s approaches, concepts, and worldviews is to move beyond settler myths such as the helping Western Other (Barker, 2010, p. 320; Denzin & Lincoln, 2008a, p. 5). Or as Lilla Watson, an Indigenous Australian artist, activist, and academic, put it: “If you have come to help me, you are wasting your time. But if you have come because your liberation is bound up with mine then let us work together” (Watson, as cited in Brady, 1987, p. 5). Further, it is paramount that Indigenous worldviews, languages, knowledge, and laws are validated by settler institutions and the dominant philosophy (Henderson, 2000, p. 252), for instance, by teaching

and practicing them at universities. This demand is in line with Paulo Freire's pedagogy of the oppressed which proposes that people can only be educated "within the existing participatory relationship with natural, cultural, and historical reality" (Henderson, 2000, p. 252). Therefore, the dominant society needs to change their thoughts and attitudes which daily recreate imperialism and colonialism. Eliminating oppression is not an easy undertaking; it takes fundamental changes to who we are and what we do as settlers, both individually and as a society. We need to first question and then radically change our worldview if we want to stop the cycle of perpetuating colonial power (Barker, 2010). It will be a painful and challenging struggle but also a restoring and liberating one. We do not know yet what the decolonization project will look like in its entirety, but one thing is for certain: We can no longer choose to delay it, as Denzin and Lincoln (2005, p. 22) already observed more than a decade ago.

Conclusion

Research does not take place in a vacuum but is guided consciously or unconsciously by a set of philosophical assumptions about how the world is; how knowledge is produced, acquired, valued, and shared; the moral aspects of the research; and how the latter is to be executed (Mertens, 2015). These research paradigms are constantly evolving. In the process, the transformative paradigm and Indigenous paradigms have come to share an increasing number of philosophical underpinnings. Yet their merging can only be an effective agent in the decolonization project if it is done in partnership, for decolonization is a mutual endeavor that involves the formerly colonized and the former colonizer.

An equitable collaboration will further help validate decolonizing research so that such inquiry can be undertaken with more confidence and more often, eventually becoming the norm. In the past, and ongoing, academia has legitimized and perpetuated the dominance of the Eurocentric worldview. Thus, decolonization will not only have to saturate all aspects of the academy but furthermore spur it on to become an agent of change by critiquing and challenging colonial agendas and acknowledging the legitimacy of Indigenous and other previously marginalized knowledges (McDowell & Hernández, 2010). The West has to come to terms with the fact that there is more than just one worldview (understood here in the broader sense of a conception of the world, not as a synonym for research paradigm) and that no one worldview is better than the other. They all have something to contribute, and we should embrace this diversity rather than shut it out.

Acknowledgments

The author gratefully acknowledges the mentoring and support of Dr. Megan Aston in the School of Nursing at Dalhousie University. The author also would like to thank two reviewers for their valuable feedback and constructive comments.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This work was funded by the Social Sciences and Humanities Research Council of Canada (SSHRC) Partnership Grant #895-2011-1007 and the Natural Sciences and Engineering Research Council of Canada (NSERC) CREATE Transatlantic Ocean System Science and Technology (TOSST) grant.

Notes

1. The research project Fisheries—Western and Indigenous Knowledge Systems (Fish-WIKS) uses the term "knowledge system" to denote the sum of the principles, ethics, and values that determine how knowledge is generated, acquired, valued, shared, and used; however, the relevant literature has so far failed to explain or define this concept (Saugeen Ojibway Nation, Varghese, & Crawford, 2016). I prefer the term "worldview" which, according to Oxford Dictionaries, is "a particular philosophy of life or conception of the world" (Worldview, n.d.). A worldview goes beyond knowledge and epistemology in that it encompasses the entirety of a particular set of philosophical beliefs. Thus, it is well suited for this discussion about research paradigms which are essentially research worldviews.
2. The multiparadigmatic space that is two-eyed seeing might be better understood in the context of transdisciplinary research approaches than within the framework of Kuhn's paradigms, as suggested by Bartlett, Marshall, and Marshall (2012). While two-eyed seeing originally focused on the discourse about the natural world and how to achieve practical changes in environmental education in terms of equally respecting and employing Western and Mi'kmaw perspectives, the approach has since been taken up across Canada predominantly in community-based health research (e.g., Hall et al., 2015; Marsh, Cote-Meek, Toulouse, Najavits, & Young, 2015).

References

- Absolon, K. M. E. (2011). *Kaandossiwin: How we come to know*. Halifax, Canada: Fernwood.
- Anderson, J. M. (2004). Lessons from postcolonial-feminist perspective: Suffering and a path to healing. *Nursing Inquiry*, *11*, 238–246. doi:10.1111/j.1440-1800.2004.00231.x
- Barker, A. (2010). From adversaries to allies: Forging respectful alliances between Indigenous and Settler peoples. In L. Davis (Ed.), *Alliances: Re/envisioning Indigenous-non-Indigenous relationships* (pp. 316–333). Toronto, Canada: University of Toronto Press.
- Bartlett, C., Marshall, M., & Marshall, A. (2012). Two-eyed seeing and other lessons learned within a co-learning journey of bringing together indigenous and mainstream knowledges and ways of knowing. *Journal of Environmental Studies and Sciences*, *2*, 331–340. doi:10.1007/s13412-012-0086-8
- Battiste, M. (2000). *Reclaiming indigenous voice and vision*. Vancouver, Canada: University of British Columbia Press.

- Battiste, M., & Henderson, J. S. Y. (2000). *Protecting Indigenous knowledge and heritage: A global challenge*. Saskatoon, Canada: Purich.
- Beeman-Cadwallader, N., Quigley, C., & Yazzie-Mintz, T. (2011). Enacting decolonized methodologies: The *doing* of research in educational communities. *Qualitative Inquiry*, 18, 3–15. doi:10.1177/1077800411426414
- Berger-González, M., Stauffacher, M., Zinsstag, J., Edwards, P., & Krütli, P. (2015). Transdisciplinary research on cancer-healing systems between biomedicine and the Maya of Guatemala: A tool for reciprocal reflexivity in a multi-epistemological setting. *Qualitative Health Research*, 26, 77–91. doi:10.1177/1049732315617478
- Biddle, C., & Schafft, K. A. (2015). Axiology and anomaly in the practice of mixed methods work: Pragmatism, valuation, and the transformative paradigm. *Journal of Mixed Methods Research*, 9, 320–334. doi:10.1177/1558689814533157
- Bishop, R. (2005). Freeing ourselves from neocolonial domination in research: A Kaupapa Māori approach to creating knowledge. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 109–138). Thousand Oaks, CA: Sage.
- Brady, V. (1987). Something that was shameful: Two Aboriginal identities in a whole culture. *The Age Monthly Review*, 7, 3–5.
- Brander, K. M. (2007). Global fish production and climate change. *Proceedings of the National Academy of Sciences*, 104, 19709–19714. doi:10.1073/pnas.0702059104
- Braun, K. L., Browne, C. V., Ka'opua, L. S., Kim, B. J., & Mokuau, N. (2014). Research on Indigenous elders: From positivistic to decolonizing methodologies. *The Gerontologist*, 54, 117–126. doi:10.1093/geront/gnt067
- Brown, L. A., & Strega, S. (2005). *Research as resistance: Critical, indigenous and anti-oppressive approaches*. Toronto, Canada: Canadian Scholars' Press.
- Browne, A. J., Smye, V. L., & Varcoe, C. (2005). The relevance of postcolonial theoretical perspectives to research in Aboriginal health. *Canadian Journal of Nursing Research*, 37, 16–37. Retrieved from <http://cjr.archive.mcgill.ca/article/view/1969>
- Buntu, B. A. O. (2013). Claiming self: The role of Afrikology in social transformation. *Scriptura*, 112, 1–12. Retrieved from <http://scriptura.journals.ac.za>
- Cajete, G. (2000). *Native science: Natural laws of interdependence*. Santa Fe, NM: Clear Light.
- Calder et al. v. Attorney-General of British Columbia. SCR 313 (1973).
- Chilisa, B. (2012). *Indigenous research methodologies*. Los Angeles, CA: Sage.
- Chilisa, B., Major, T. E., & Khudu-Petersen, K. (2017). Community engagement with a postcolonial, African-based relational paradigm. *Qualitative Research*, 17, 326–339. doi:10.1177/1468794117696176
- Chilisa, B., & Tsheko, G. N. (2014). Mixed methods in indigenous research: Building relationships for sustainable intervention outcomes. *Journal of Mixed Methods Research*, 8, 222–233. doi:10.1177/1558689814527878
- Cram, F. (1997). Developing partnerships in research: Pākehā researchers and Māori research. *Sites*, 35, 44–63. Retrieved from <http://www.katoa.net.nz/publications/download-publications>
- Cram, F., & Mertens, D. M. (2015). Transformative and Indigenous frameworks for mixed- and multi-method research. In S. Hesse-Biber & R. B. Johnson (Eds.), *The Oxford handbook of multi-method and mixed methods research inquiry* (pp. 91–109). Oxford, England: Oxford University Press.
- Cram, F., & Mertens, D. M. (2016). Negotiating solidarity between indigenous and transformative paradigms in evaluation. *Evaluation Matters—He Take Tō Te Aromatawai*, 2, 161–189. doi:10.18296/em.0015
- Creswell, J. W. (2011). Controversies in mixed methods research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 269–283). Los Angeles, CA: Sage.
- Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Los Angeles, CA: Sage.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. London, England: Sage.
- Davis, M. (2006). Bridging the gap or crossing a bridge? Indigenous knowledge and the language of law and policy. In W. V. Reid, F. Berkes, T. Wilbanks, & D. Capistrano (Eds.), *Bridging scales and knowledge systems: Concepts and applications in ecosystem assessment* (pp. 145–163). Washington, DC: Island Press.
- Dei, G. J. S. (2000). Rethinking the role of Indigenous knowledges in the academy. *International Journal of Inclusive Education*, 4, 111–132. doi:10.1080/136031100284849
- Dei, G. J. S., Hall, B., & Goldin Rosenberg, D. (Eds.) (2000). *Indigenous knowledges in global contexts: Multiple readings of our world*. Toronto, Canada: University of Toronto Press.
- Delgamuukw v. British Columbia. 3 SCR 1010 (1997).
- Denzin, N. K. (2010). Moments, mixed methods, and paradigm dialogs. *Qualitative Inquiry*, 16, 419–427. doi:10.1177/1077800410364608
- Denzin, N. K., & Giardina, M. D. (Eds.) (2007). *Ethical futures in qualitative research: Decolonizing the politics of knowledge*. Walnut Creek, CA: Left Coast Press.
- Denzin, N. K., & Lincoln, Y. S. (1994). Introduction: Entering the field of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 1–17). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2000). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 1–28). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2005). Introduction: The discipline and practice of qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 1–32). Thousand Oaks, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2008a). Introduction: Critical methodologies and Indigenous inquiry. In N. K. Denzin, Y. S. Lincoln & L. T. Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. 1–20). Los Angeles, CA: Sage.
- Denzin, N. K., & Lincoln, Y. S. (2008b). Preface. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. ix–xv). Los Angeles, CA: Sage.
- Denzin, N. K., Lincoln, Y. S., & Smith, L. T. (Eds.) (2008). *Handbook of critical and Indigenous methodologies*. Los Angeles, CA: Sage.

- Dillard, C. B. (2006). When the music changes, so should the dance: Cultural and spiritual considerations in paradigm 'proliferation.' *International Journal of Qualitative Studies in Education*, *19*, 59–76. doi:10.1080/09518390500450185
- Dossetor, J. B. (2005). *Beyond the Hippocratic oath: A memoir on the rise of modern medical ethics*. Edmonton, Canada: University of Alberta Press.
- Dumbrill, G. C., & Green, J. (2008). Indigenous knowledge in the social work academy. *Social Work Education*, *27*, 489–503. doi: 10.1080/02615470701379891
- Dutton, M. (2005). The trick of words: Asian studies, translation, and the problems of knowledge. In G. Steinmetz (Ed.), *The politics of method in the human sciences: Positivism and its epistemological others* (pp. 89–125). Durham, NC: Duke University Press.
- Ermine, W. (2007). The ethical space of engagement. *Indigenous Law Journal*, *6*, 193–203. Retrieved from <https://jps.library.utoronto.ca/index.php/ilj/article/view/27669/20400>
- Fontaine, T. (2016, May 10). Canada officially adopts UN declaration on rights of Indigenous peoples. *CBC News*. Retrieved from <http://www.cbc.ca/news/indigenous/canada-adopting-implementing-un-rights-declaration-1.3575272>
- Garrouette, E. M. (2003). *Real Indians: Identity and the survival of native America*. Berkeley: University of California Press.
- Gergen, K. J. (2001). Psychological science in a postmodern context. *American Psychologist*, *56*, 803–813. doi:10.1037/0003-066X.56.10.803
- Gerlach, A. (2018). Thinking and researching relationally: Enacting decolonizing methodologies with an Indigenous early childhood program in Canada. *International Journal of Qualitative Methods*, *17*, 1–8. doi:10.1177/1609406918776075
- Getty, G. A. (2010). The journey between Western and Indigenous research paradigms. *Journal of Transcultural Nursing*, *21*, 5–14. doi:10.1177/1043659609349062
- Government of Canada. (May 10, 2016). *Canada becomes a full supporter of the United Nations Declaration on the Rights of Indigenous Peoples* [News release]. Retrieved from <https://www.canada.ca/en/indigenous-northern-affairs/news/2016/05/canada-becomes-a-full-supporter-of-the-united-nations-declaration-on-the-rights-of-indigenous-peoples.html>
- Grande, S. (2000). American Indian identity and intellectualism: The quest for a new red pedagogy. *International Journal of Qualitative Studies in Education*, *13*, 343–359. doi:10.1080/095183900413296
- Graveline, F. J. (1998). *Circle works: Transforming Eurocentric consciousness*. Halifax, Canada: Fernwood.
- Graveline, F. J. (2000). Circle as methodology: Enacting an Aboriginal paradigm. *International Journal of Qualitative Studies in Education*, *13*, 361–370. doi:10.1080/095183900413304
- Guba, E. G. (Ed.). (1990). *The paradigm dialog*. Newbury Park, CA: Sage.
- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105–117). Thousand Oaks, CA: Sage.
- Guba, E. G., & Lincoln, Y. S. (2005). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 191–215). Thousand Oaks, CA: Sage.
- Hall, L., Dell, C. A., Fornssler, B., Hopkins, C., Mushquash, C., & Rowan, M. (2015). Research as cultural renewal: Applying two-eyed seeing in a research project about cultural interventions in first nations addictions treatment. *The International Indigenous Policy Journal*, *6*. Retrieved from <http://ir.lib.uwo.ca/iipj/vol6/iss2/4>
- Harding, S. G. (1991). *Whose science? Whose knowledge? Thinking from women's lives*. Ithaca, NY: Cornell University Press.
- Hart, M. A. (2010). Indigenous worldviews, knowledge, and research: The development of an Indigenous research paradigm. *Journal of Indigenous Voices in Social Work*, *1*, 1–16. Retrieved from http://www.hawaii.edu/sswork/jisd/jivsw_i1.html
- Hart, M. A., Straka, S., & Rowe, G. (2016). Working across contexts: Practical considerations of doing Indigenist/anti-colonial research. *Qualitative Inquiry*, *23*, 332–342. doi:10.1177/1077800416659084
- Henderson, J. S. Y. (2000). Ayukpachi: Empowering aboriginal thought. In M. A. Battiste (Ed.), *Reclaiming Indigenous voice and vision* (pp. 248–278). Vancouver, Canada: UBC Press.
- Hesse-Biber, S. (2010). Feminist approaches to mixed methods research: Linking theory and praxis. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social and behavioral research* (2nd ed., pp. 169–192). Thousand Oaks, CA: Sage.
- Hesse-Biber, S., & Griffin, A. J. (2015). Feminist approaches to multi-method and mixed methods research: Theory and praxis. In S. Hesse-Biber & R. B. Johnson (Eds.), *The Oxford handbook of multimethod and mixed methods research inquiry* (pp. 72–90). New York, NY: Oxford University Press.
- Houde, N. (2007). The six faces of traditional ecological knowledge: Challenges and opportunities for Canadian co-management arrangements. *Ecology and Society*, *12*. Retrieved from <http://www.ecologyandsociety.org/vol12/iss2/art34/>
- Indian Residential Schools Settlement Agreement. (2006). Including all schedules to the agreement. Retrieved from <http://www.residentialschoolsettlement.ca/settlement.html>
- Irwin, K. (1994). Maori research methods and processes: An exploration. *Sites*, *28*, 25–43.
- Jackson-Barrett, E., Price, A., Stomski, N., & Walker, B. F. (2015). Grounded in country: Perspectives on working within, alongside and for Aboriginal communities. *Issues in Educational Research*, *25*, 36–49. Retrieved from <http://www.iier.org.au/iier25/jackson-barrett.html>
- Kawagley, A. O., & Barnhardt, R. (1999). Education indigenous to place: Western science meets native reality. In G. A. Smith & D. R. Williams (Eds.), *Ecological education in action: On weaving education, culture, and the environment* (pp. 117–140). Albany: State University of New York Press.
- Kim, U., Yang, K. S., & Hwang, K. K. (Eds.) (2006). *Indigenous and cultural psychology: Understanding people in context*. New York, NY: Springer. doi:10.1007/0-387-28662-4
- Knudson, S. (2015). Integrating the self and the spirit: Strategies for aligning qualitative research teaching with Indigenous methods, methodologies, and epistemology. *Forum: Qualitative Social Research/Forum: Qualitative Sozialforschung*, *16*, Art. 4.

- Retrieved from <http://www.qualitative-research.net/index.php/fqs/article/view/2362/3846>
- Kovach, M. (2009). *Indigenous methodologies: Characteristics, conversations, and contexts*. Toronto, Canada: University of Toronto Press.
- Kovach, M. (2010). Conversational methods in Indigenous research. *First Peoples Child and Family Review*, 5, 40–48. Retrieved from <http://journals.sfu.ca/fpcfr/index.php/FPCFR/article/view/172/141>
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.
- Kuokkanen, R. J. (2007). *Reshaping the university: Responsibility, indigenous epistemes, and the logic of the gift*. Vancouver, Canada: UBC Press.
- Laenui, P. (2000). Processes of decolonization. In M. A. Battiste (Ed.), *Reclaiming Indigenous voice and vision* (pp. 150–160). Vancouver, Canada: UBC Press.
- Land, C. (2015). *Decolonizing solidarity: Dilemmas and directions for supporters of Indigenous struggles*. London, England: Zed Books.
- Lather, P. (2006). Paradigm proliferation as a good thing to think with: Teaching research in education as a wild profusion. *International Journal of Qualitative Studies in Education*, 19, 35–57. doi:10.1080/09518390500450144
- Latulippe, N. (2015). Bridging parallel rows: Epistemic difference and relational accountability in cross-cultural research. *The International Indigenous Policy Journal*, 6. doi:10.18584/iipj.2015.6.2.7
- Lincoln, Y. S., & Denzin, N. K. (2008). Epilogue: The lions speak. In N. K. Denzin, Y. S. Lincoln, & L. Tuhiwai Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. 563–571). Los Angeles, CA: Sage.
- Lincoln, Y. S., & Guba, E. G. (2000). Paradigmatic controversies, contradictions, and emerging confluences. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 163–188). Thousand Oaks, CA: Sage.
- Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 97–128). Los Angeles, CA: Sage.
- Little Bear, L. (2000). Jagged worldviews colliding. In M. A. Battiste (Ed.), *Reclaiming Indigenous voice and vision* (pp. 78–85). Vancouver, Canada: UBC Press.
- Liu, J. H. (2011). Asian epistemologies and contemporary social psychological research. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (4th ed., pp. 213–226). Los Angeles, CA: Sage.
- Loppie, C. (2007). Learning from the grandmothers: Incorporating Indigenous principles into qualitative research. *Qualitative Health Research*, 17, 276–284. doi:10.1177/1049732306297905
- Louis, R. P. (2007). Can you hear us now? Voices from the margin: Using Indigenous methodologies in geographic research. *Geographical Research*, 45, 130–139. doi:10.1111/j.1745-5871.2007.00443.x
- Mane, J. (2009). Kaupapa Māori: A community approach. *MAI Review*, 3, Article 1. Retrieved from <http://www.review.mai.ac.nz/index.php/MR/article/viewFile/243/282>
- Marsh, T. N., Cote-Meek, S., Toulouse, P., Najavits, L. M., & Young, N. L. (2015). The application of two-eyed seeing decolonizing methodology in qualitative and quantitative research for the treatment of intergenerational trauma and substance use disorders. *International Journal of Qualitative Methods*, 14. doi:10.1177/1609406915618046
- Martin, K. L. (2003). Ways of knowing, ways of being and ways of doing: A theoretical framework and methods for Indigenous research and Indigenist research. *Journal of Australian Studies*, 76, 203–214. Retrieved from <http://eprints.qut.edu.au/7182/1/7182.pdf>
- Maxcy, S. J. (2003). Pragmatic threads in mixed methods research in the social sciences: The search for multiple modes of inquiry and the end of the philosophy of formalism. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 51–89). Thousand Oaks, CA: Sage.
- McDowell, T., & Hernández, P. (2010). Decolonizing academia: Intersectionality, participation, and accountability in family therapy and counseling. *Journal of Feminist Family Therapy*, 22, 93–111. doi:10.1080/08952831003787834
- McKenzie, B., & Morrisette, V. (2003). Social work practice with Canadians of aboriginal background: Guidelines for respectful social work. In A. Al-Krenawi & J. R. Graham (Eds.), *Multicultural social work in Canada: Working with diverse ethno-racial communities* (pp. 251–282). Don Mills, Canada: Oxford University Press.
- Mertens, D. M. (1998). *Research methods in education and psychology: Integrating diversity with quantitative and qualitative approaches*. Thousand Oaks, CA: Sage.
- Mertens, D. M. (2005). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (2nd ed.). Thousand Oaks, CA: Sage.
- Mertens, D. M. (2010). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (3rd ed.). Los Angeles, CA: Sage.
- Mertens, D. M. (2012). Transformative mixed methods: Addressing inequities. *American Behavioral Scientist*, 56, 802–813. doi:10.1177/0002764211433797
- Mertens, D. M. (2015). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods* (4th ed.). Thousand Oaks, CA: Sage.
- Mertens, D. M., Bledsoe, K. L., Sullivan, M., & Wilson, A. (2010). Utilization of mixed methods for transformative purposes. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social and behavioral research* (2nd ed., pp. 193–214). Thousand Oaks, CA: Sage.
- Mertens, D. M., & Cram, F. (2016). Integration tensions and possibilities: Indigenous research and social transformation. *International Review of Qualitative Research*, 9, 185–191. doi:10.1525/irqr.2016.9.2.185
- Mertens, D. M., Cram, F., & Chilisa, B. (Eds.). (2013). *Indigenous pathways into social research: Voices of a new generation*. Walnut Creek, CA: Left Coast Press.
- Mertens, D. M., & Wilson, A. T. (2012). *Program evaluation theory and practice: A comprehensive guide*. New York, NY: Guilford Press.
- Meyer, M. A. (1998). Native Hawaiian epistemology: Sites of empowerment and resistance. *Equity & Excellence*, 31, 22–28. doi:10.1080/1066568980310104

- Mora, C., Myers, R. A., Coll, M., Libralato, S., Pitcher, T. J., Sumaila, R. U., . . . Worm, B. (2009). Management effectiveness of the world's marine fisheries. *PLoS Biology*, *7*, e1000131. doi:10.1371/journal.pbio.1000131
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, *1*, 48–76. doi: 10.1177/2345678906292462
- Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, *20*, 1045–1053. doi:10.1177/1077800413513733
- Mutua, K., & Swadener, B. B. (2004). *Decolonizing research in cross-cultural contexts: Critical personal narratives*. Albany: State University of New York Press.
- Nabudere, D. W. (2011). *Afrikology, philosophy and wholeness: An epistemology*. Pretoria, South Africa: Africa Institute of South Africa.
- Nabudere, D. W. (2012). *Afrikology and transdisciplinarity: A restorative epistemology*. Pretoria, South Africa: Africa Institute of South Africa.
- Nadasdy, P. (1999). The politics of TEK: Power and the “integration” of knowledge. *Arctic Anthropology*, *36*, 1–18. Retrieved from <http://www.jstor.org/stable/40316502>
- Nelson, G., & Prilleltensky, I. (2010). *Community psychology: In pursuit of liberation and well-being* (2nd ed.). Basingstoke, England: Palgrave Macmillan.
- Ngũgĩ wa Thiong’o. (1986). *Decolonising the mind: The politics of language in African literature*. London, England: James Currey.
- O’Boyle, R., & Jamieson, G. (2006). Observations on the implementation of ecosystem-based management: Experiences on Canada’s east and west coast. *Fisheries Research*, *79*, 1–12. doi:10.1016/j.fishres.2005.11.027
- Oceans Act, S.C. c. 31 (1996).
- Okalik, L. (2013). Inuuunga: The intricacy of Indigenous and western epistemologies in the Arctic. In D. M. Mertens, F. Cram, & B. Chilisa (Eds.), *Indigenous pathways into social research: Voices of a new generation* (pp. 239–248). Walnut Creek, CA: Left Coast Press.
- Pauly, D., Christensen, V., Guénette, S., Pitcher, T. P., Sumaila, U. R., Walters, C., . . . Zeller, D. (2002). Towards sustainability in world fisheries. *Nature*, *418*, 689–695. doi:10.1038/nature01017
- Pelletier Sinclair, R. (2003). Indigenous research in social work: The challenge of operationalizing worldview. *Native Social Work Journal*, *5*, 117–139. Retrieved from <https://zone.biblio.laurentian.ca/handle/10219/407>
- Prowse, T. D., Furgal, C., Wrona, F. J., & Reist, J. D. (2009). Implications of climate change for northern Canada: Freshwater, marine, and terrestrial ecosystems. *Ambio*, *38*, 282–289. Retrieved from <http://www.jstor.org/stable/25515856>
- Reo, N. J. (2011). The importance of belief systems in traditional ecological knowledge initiatives. *The International Indigenous Policy Journal*, *2*. Retrieved from <http://ir.lib.uwo.ca/iipj/vol2/iss4/8>
- Rigney, L. I. (1999). Internationalisation of an Indigenous anticolonial cultural critique of research methodologies: A guide to Indigenous research methodology and its principles. *Wicazo Sa Review*, *14*, 109–121. doi:10.2307/1409555
- Romm, N. R. A. (2015). Reviewing the transformative paradigm: A critical systemic and relational (Indigenous) lens. *Systemic Practice and Action Research*, *28*, 411–427. doi:10.1007/s11213-015-9344-5
- Russon, C. (2008). An eastern paradigm of evaluation. *Journal of Multidisciplinary Evaluation*, *5*, 71–77. Retrieved from http://journals.sfu.ca/jmde/index.php/jmde_1/article/download/183/203/
- R. v. Marshall. 3 SCR 456 (1999).
- R. v. Sparrow. 1 SCR 1075 (1990).
- Saugeen Ojibway Nation, Varghese, J., & Crawford, S. (2016). *Part 2: An operational framework for Indigenous, local, and science knowledge system engagement in Canadian EAs* (plain language version). Saugeen Ojibway Nation knowledge system submission for Canada’s review of federal environmental assessment processes associated with the Canadian Environmental Assessment Act, 2012.
- Schwandt, T. A. (2000). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics, and social constructionism. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 189–213). Thousand Oaks, CA: Sage.
- Shackeroff, J., & Campbell, L. (2007). Traditional ecological knowledge in conservation research: Problems and prospects for their constructive engagement. *Conservation and Society*, *5*, 343–360. Retrieved from <http://www.conservationandsociety.org/text.asp?2007/5/3/343/49241>
- Shannon-Baker, P. (2016). Making paradigms meaningful in mixed methods research. *Journal of Mixed Methods Research*, *10*, 319–334. doi:10.1177/1558689815575861
- Shroff, F. M. (2000). Ayurveda: Mother of Indigenous health knowledge. In G. J. S. Dei, B. L. Hall, & D. Goldin Rosenberg (Eds.), *Indigenous knowledges in global contexts: Multiple readings of our world* (pp. 215–233). Toronto, Canada: University of Toronto Press.
- Simonds, V. W., & Christopher, S. (2013). Adapting western research methods to Indigenous ways of knowing. *American Journal of Public Health*, *103*, 2185–2192. doi:10.2105/AJPH.2012.301157
- Simpson, A. (2007). On ethnographic refusal: Indigeneity, “voice” and colonial citizenship. *Junctures*, *9*, 67–80. Retrieved from <http://junctures.org/index.php/junctures/article/view/66/60>
- Smith, L. T. (2000). Kaupapa Maori research. In M. A. Battiste (Ed.), *Reclaiming Indigenous voice and vision* (pp. 225–247). Vancouver, Canada: UBC Press.
- Smith, L. T. (2005). On tricky ground: Researching the native in the age of uncertainty. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (3rd ed., pp. 85–107). Thousand Oaks, CA: Sage.
- Smith, L. T. (2012). *Decolonizing methodologies: Research and indigenous peoples* (2nd ed.). London, England: Zed Books.
- Snow, K. (2018). What does being a settler ally in research mean? A graduate student’s experience learning from and working within Indigenous research paradigms. *International Journal of Qualitative Methods*, *17*, 1–11. doi:10.1177/1609406918770485
- Steinhauer, E. (2002). Thoughts on an Indigenous research methodology. *Canadian Journal of Native Education*, *26*, 69–81. Retrieved

- from <https://search.proquest.com/docview/230309895/fulltextPDF/57B2AE3DDBD4702PQ/1?accountid=10406>
- Strang, V. (1997). *Uncommon ground: Cultural landscapes and environmental values*. Oxford, England: Berg.
- Styres, S. D. (2017). *Pathways for remembering and recognizing Indigenous thought in education: Philosophies of Iethi'nihténha Ohwentsia'kékha (land)*. Toronto, Canada: University of Toronto Press.
- Styres, S. D., Zinga, D., Bennett, S., & Bomberry, M. (2010). Walking in two worlds: Engaging the space between Indigenous community and academia. *Canadian Journal of Education*, 33, 617–648. doi: 10.2307/canajeducrevucan.33.3.617
- Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioral sciences. In A. Tashakkori & C. Teddlie (Eds.), *Handbook of mixed methods in social and behavioral research* (pp. 3–50). Thousand Oaks, CA: Sage.
- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage.
- Trudeau, J. (2015). *Minister of Indigenous and northern affairs mandate letter*. Retrieved from <http://pm.gc.ca/eng/minister-indigenous-and-northern-affairs-mandate-letter>
- Truth and Reconciliation Commission of Canada. (2015). *Honouring the truth, reconciling for the future: Summary of the final report of the truth and reconciliation commission of Canada*. Retrieved from http://www.trc.ca/websites/trcinstitution/File/2015/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf
- Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, 1, 1–40. Retrieved from https://www.researchgate.net/publication/277992187_Decolonization_Is_Not_a_Metaphor
- United Nations Declaration on the Rights of Indigenous Peoples. (2007, September 13). A/RES/61/295. Retrieved from <https://undocs.org/A/RES/61/295>
- Wachowich, N., Awa, A. A., Katsak, R. K., & Katsak, S. P. (1999). *Saqiyuq: Stories from the lives of three Inuit women*. Montreal, Canada & Kingston, Canada: McGill-Queen's University Press.
- Walker, S., Eketone, A., & Gibbs, A. (2006). An exploration of Kaupapa Maori research, its principles, processes and applications. *International Journal of Social Research Methodology*, 9, 331–344. doi:10.1080/13645570600916049
- Whitt, L. (2009). *Science, colonialism, and Indigenous peoples: The cultural politics of law and knowledge*. Cambridge, MA: Cambridge University Press.
- Whyte, K. P. (2013). On the role of traditional ecological knowledge as a collaborative concept: A philosophical study. *Ecological Processes*, 2, 7. doi:10.1186/2192-1709-2-7
- Willis, J. W. (2007). *Foundations of qualitative research: Interpretive and critical approaches*. Thousand Oaks, CA: Sage.
- Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Halifax, Canada: Fernwood.
- Wilson, S., & Wilson, A. (2013). Neyo way in ik issi: A family practice of Indigenist research informed by land. In D. M. Mertens, F. Cram, & B. Chilisa (Eds.), *Indigenous pathways into social research: Voices of a new generation* (pp. 333–352). Walnut Creek, CA: Left Coast Press.
- Wilt, J. (2017, December 12). Implementing UNDRIP is a big deal for Canada: Here's what you need to know. *The Narwhal*. Retrieved from <https://thenarwhal.ca/implementing-undrip-big-deal-canada-here-s-what-you-need-know/>
- Worldview. (n.d.). In *Oxford living dictionaries: English*. Retrieved from <https://en.oxforddictionaries.com/definition/us/worldview>
- Zavala, M. (2013). What do we mean by decolonizing research strategies? Lessons from decolonizing, Indigenous research projects in New Zealand and Latin America. *Decolonization: Indigeneity, Education and Society*, 2, 55–71. Retrieved from <http://decolonization.org/index.php/des/article/view/19113>