Résumé

L'approche à double perspective : un cadre pour comprendre les approches autochtones et non autochtones à la recherche en santé autochtone

Debbie H. Martin

Cet article présente l'approche à double perspective (*two-eyed seeing*) en tant que cadre théorique englobant les apports des modes de connaissances (visions du monde) autochtones et occidentaux. Il présente les caractéristiques et les principes clés de ces différentes perspectives et suggère des façons dont elles pourraient être utilisées conjointement pour répondre à nos questions les plus pressantes sur la santé des Autochtones et leurs collectivités. Contenant une critique du positivisme, qui a dans le passé miné ou rejeté les modes de connaissances autochtones jugés non scientifiques, l'article traite des origines des approches occidentales et autochtones en matière de compréhension de la santé; de l'importance d'accorder la même attention aux diverses visions du monde occidentales et autochtones de manière à ce que l'une d'elles ne domine pas ou ne sape pas les apports de l'autre; et de la manière dont un examen équilibré des apports des diverses visions du monde, effectué dans un cadre fondé sur une double perspective, peut reformuler les questions que nous posons dans le domaine de la recherche en santé autochtone.

Mots clés : Autochtones, santé, recherche en santé, visions du monde, double perspective

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Two-Eyed Seeing: A Framework for Understanding Indigenous and Non-Indigenous Approaches to Indigenous Health Research

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This article presents two-eyed seeing as a theoretical framework that embraces the contributions of both Indigenous and Western "ways of knowing" (worldviews). It presents key characteristics and principles of these different perspectives and suggests ways in which they might be used together to answer our most pressing questions about the health of Indigenous people and communities. Presenting a critique of positivism, which has historically undermined and/or dismissed Indigenous ways of knowing as "unscientific," it discusses the origins of both Western and Indigenous approaches to understanding health; the importance of giving equal consideration to diverse Indigenous and non-Indigenous worldviews such that one worldview does not dominate or undermine the contributions of others; and how balanced consideration of contributions from diverse worldviews, embraced within a two-eyed seeing framework, can reshape the nature of the questions we ask in the realm of Indigenous health research.

Keywords: Indigenous peoples, Aboriginal peoples, health, health research, theory, worldviews, two-eyed seeing

Introduction

> Two-Eyed Seeing adamantly, respectfully, and passionately asks that we bring together our different ways of knowing to motivate people, Aboriginal and non-Aboriginal alike, to use all our understandings so that we can leave the world a better place and not compromise the opportunities for our youth (in the sense of Seven Generations) through our own inaction. (Bartlett, Marshall, Marshall, & Iwama, in press, p. 11)

There are many ways of seeing and understanding the world. How health is understood within our academic and health-care institutions is predominantly shaped by conventional scientific approaches, but there are other, equally valuable, ways to understand health. Discussions about the importance of alternative ways of knowing, such as those encompassed

by Indigenous[1] perspectives, are often absent from research generally (Smith, 1999) and health research specifically. Through an uncritical reliance upon only conventional scientific, or Western, understandings of health (Denzin & Lincoln, 2008), we disregard other avenues that may hold key insights into the health and well-being of populations. This article presents and builds upon a framework called two-eyed seeing proposed by Mi'kmaw Elders Albert and Murdena Marshall as a means to bridge Western science and Indigenous knowledge (Bartlett et al., in press). This article argues that two-eyed seeing offers a way in which diverse perspectives might work together to answer our most pressing questions about the health of Indigenous people and communities.

Epidemiological data suggest that in many Indigenous communities the burden of chronic disease is worsening and that health disparities between Indigenous and non-Indigenous populations are widening (Gracey & King, 2009; Loppie-Reading & Wien, 2009). The significant health inequities between Indigenous and non-Indigenous populations can largely be explained by inequitable access to many of the social determinants of health (King, Smith, & Gracey, 2009; Loppie-Reading & Wien, 2009; Richmond & Ross, 2009). In Canada, for example, a country consistently ranked in the top 10% of the world's most developed nations according to the United Nations Development Index, one need look no further than Indigenous communities to find living conditions more reminiscent of developing countries than other parts of Canada — communities that are characterized by unemployment, poor sanitation, overcrowded housing, and often desperate poverty (Adelson, 2005). Given these social and living conditions, it is not surprising that members of Indigenous communities experience poor health compared to non-Indigenous Canadians (Adelson, 2005; King et al., 2009; Waldram, Herring, & Young, 2006). Researchers who study Indigenous health are in agreement that the causes and consequences of ill health within Indigenous communities are multi-faceted, complex, and predominantly social in origin; health issues are so intertwined with social, political, eco-

[1] No set definition of the term "Indigenous peoples" exists, although certain characteristics are deemed to be common among collectives who identify themselves as Indigenous peoples, including the claim that they are the original inhabitants of a particular territory (United Nations, 2004, 2006). This term, rather than "Aboriginal people," is specifically chosen for this article, because although "Aboriginal peoples" is more commonly used to describe the Indigenous inhabitants of Canada (Royal Commission on Aboriginal Peoples), it is politically charged and includes specific collectives (i.e., those who are identified by the Government of Canada as either First Nation, Inuit, or Métis). This article chooses to avoid these political distinctions, as there are Indigenous peoples in Canada who identify as Indigenous to a particular location or territory, despite a lack of recognition by the Government of Canada.

nomic, and environmental issues that one cannot hope to address them without a thorough understanding of the context within which health is situated (King et al., 2009).

The prevention and treatment of a variety of chronic and non-chronic illnesses can be directly attributed to scientific advances in the fields of public health, medicine, nursing, and other health disciplines (Wilkinson & Marmot, 2003). Undeniably, research conducted within these disciplines and the application of research findings in health programs, policies, and services have positively influenced the overall health and longevity of populations, including Indigenous communities (Loppie, 2007). Despite these advances, however, there continues to be a noticeable gap between the health of Indigenous populations and that of their non-Indigenous counterparts (Gracey & King, 2009). Taking into account even the most diligent efforts by health disciplines, research findings do not appear to be translating into better health for Indigenous communities.

With growing recognition of the complex nature of the causes and consequences of ill health in Indigenous communities, it is not enough to simply define and describe the health issues being experienced. To address the significant health disparities between Indigenous and non-Indigenous peoples, Indigenous health researchers and communities are calling for health research that is participatory, community-based, and action-oriented; they are also calling for research processes and methodologies that reflect the needs, issues, and concerns of community members themselves (Bull, 2010; Kovach, 2009; Minkler, 2005). For far too long, Indigenous peoples have been subjected to research in its various forms without receiving its benefits (Marker, 2003; Smith, 1999). There is a groundswell of support for research that is driven by the needs of the community and that can recommend solutions to some of the health crises being experienced.

Just as important as the engagement and involvement of Indigenous peoples in research, though less clearly understood, is the need for research involvement to go beyond participation, to include thinking carefully about how knowledge gets created (Kovach, 2009; Smith, 1999). The means through which Indigenous health issues are identified, defined, and addressed must uphold Indigenous worldviews. Otherwise, simply put, even well-intentioned research within Indigenous communities may at best be less than useful and at worst perpetuate harm by adding to the scepticism and trepidation that many Indigenous peoples feel towards research (Kovach, 2009; Smith, 1999). The term "worldviews" is used here to elucidate the ways in which diverse groups of people create knowledge about the world around them and principles for engaging with it. In upholding Indigenous worldviews, the motive is not

to diminish or dismiss the important work of Western health research but, rather, to critically examine the lens through which health research is interpreted and understood and to offer, in place of this dominant view, an alternative lens through which health research can embed Indigenous perspectives and realities. The lens proposed here is one that has been developed and proposed by Mi'kmaw Elders Albert and Murdena Marshall, called two-eyed seeing. Two-eyed seeing holds that there are diverse understandings of the world and that by acknowledging and respecting a diversity of perspectives (without perpetuating the dominance of one over another) we can build an understanding of health that lends itself to dealing with some of the most pressing health issues facing Indigenous peoples and communities (Bartlett et al., in press; Iwama, Marshall, Marshall, & Bartlett, 2009).

This article will explore the origins of Western thought and the Indigenous origins of many of the ideas often assumed to have emerged from Western science. It will re-imagine a health framework that does not position one "way of knowing" above another. Finally, it will offer two-eyed seeing as a theoretical framework that honours and accepts diverse ways of knowing.

Origins of Western Scientific Understandings of Health

Health research as we know it today has been almost exclusively understood from the perspective of Western science. With few exceptions, major advances in health research have occurred as a result of Western scientific methods of inquiry, with little attention paid to alternative, much less Indigenous, ways of knowing (Denzin & Lincoln, 2008). The many Indigenous origins of Western scientific thought and the health advances that have resulted have received scant attention (Iaccarino, 2003). With its roots firmly established in positivism, the scientific tradition has become a pervasive (although contested) means of inquiry in the Western world, which has failed to acknowledge the existence of perspectives that might question or contradict some of its fundamental assumptions (Denzin & Lincoln, 2008; Varadharajan, 2000). The dominance of positivism in the Western world can be seen in Canada's education system, which has been noted to teach a colonial version of history that largely overlooks the key roles played by Indigenous peoples in the settlement of what is now known as Canada (Truth and Reconciliation Commission of Canada [TRC], 2012). Consequently, Canada's education system has established a "truth" about its past that fundamentally ignores Indigenous perspectives (Marker, 2004). It has been claimed that this absence of Indigenous history in curricula across Canada contributes to

the ignorance and lack of respect for Indigenous experiences, knowledge(s), and perspectives (Bartlett, 2011; TRC, 2012).

With its claims to "truth," scientific method, or what has been called "positivist science" or "positivism," assumes that there is only one reality "out there," which can be discovered through scientific procedure (Iaccarino, 2003). The ultimate goal of science conducted in a positivist paradigm is to make claims about reality by offering proof of its existence through scientific inquiry. According to this logic, value can be placed only on knowledge that meets the acceptable standards of objectivity as defined by positivist, scientific research. No other forms or ways of knowing about the world hold legitimacy. Anything that falls outside of scientific reasoning is disregarded as inconclusive and ideological (Marker, 2003; Mills, 1997; Petch, 2000). Thus, studies that cannot be replicated, that use tools or methods that have not been standardized or verified, or that reach conclusions that veer away from the questions asked are dismissed as unscientific and lacking in credibility. Yet even though positivism and post-positivism remain a dominant and pervasive means of inquiry, it continues to be contested, even among researchers who conduct scientific research in its most basic, conventional form (Pohl, 2011), suggesting that its established dominance should not be taken as an indication that it is the only correct way of thinking about science or scientific methodologies. Within health research specifically, certain "types" and styles of research are viewed as having more credibility than others (e.g., the randomized controlled trial continues to be the gold standard of Western health research, whereas storytelling may be interpreted as anecdotal and lacking in evidence) (Denzin & Lincoln, 2008; Marker, 2003).

It is interesting to note that some of the greatest health-research contributions of our time (e.g., the importance of hand-washing in disease prevention) have not emerged as a result of these strict research standards (Wilkinson, 1996) but have come from methods that might bear more resemblance to Indigenous ways of knowing than to positivist research. Indeed, if we look closely at the origins of Western science we learn that there has never been one, pure definition of science or one "best" way to make scientific discoveries or health research advances, since science has stemmed from a variety of decidedly non-Western locations (Turnbull, 1997; van Eijck, 2007). As van Eijck (2007) points out, "the very foundation of European science is itself the result of a mélange of many peoples from the empire of Alexander the Great, including from then-current countries like Persia, Anatolia, Syria, Phoenicia, Judea, Gaza, Egypt, Bactria, Mesopotamia and even Punjab" (p. 609). Thus, "Western science" is not purely Western or even European; rather, it is a social and cultural construct with global, and often Indigenous, origins.

The word "science" comes from the Greek *scientia,* and its roots can be traced back to 15th-century Britain, where there was a growing demand for empirical evidence to replace the authority of the Church and the Crown as an alternative knowledge system (Aikenhead & Ogawa, 2007). Originally, "science" was referred to as "natural philosophy," and in 1661 the Royal Society of Natural Philosophers emerged to represent the interests of those who wished to advance empirically based knowledge. Although natural philosophy recognized that knowledge about the world could be gained through experience and circumstance, its intent was to divorce itself from the spiritual or divine elements of knowing that were considered the purview of the Church. The Society's success and influence grew throughout the Industrial Revolution and "the name *science* was chosen to replace *natural philosophy* in 1831, with the birth of the British Association for the Advancement of Science (BAAS)" (Aikenhead & Ogawa, 2007, p. 554). The founding of BAAS situated "the word *science* squarely in a political arena of elite social privilege," giving rise to science as a "professionalized philosophy" that is associated only with Eurocentric, or Western, knowledge (Aikenhead & Ogawa, 2007, p. 554). With the professionalization of this knowledge through BAAS (concurrent with the growing importance of social class in Britain), the global origins of science were forgotten and science became redefined as only that which was taught in university. Only those who were university-trained, with ties to institutions and funding bodies, could contribute to this version of science, and the experience and circumstance that had originally played an important role in natural philosophy were replaced with strict standards of objectivity (Aikenhead & Ogawa, 2007). Science became narrowly associated with that which could be verified within the academy; the Indigenous origins of scientific inquiry were all but forgotten.

It is not only the Indigenous origins of science that are ignored, but also, frequently, the Indigenous origins of particular scientific "discoveries." Within the positivist paradigm, Indigenous knowledge is used to inform and uphold many of the claims made within positivist science, but without the consent of the Indigenous holders of that knowledge (Posey, 2004). Fragments of Indigenous knowledge have been appropriated for scientific use, which can be observed in everything from forestry-management practices to the identification and use of certain pharmaceuticals, such as digoxin (Little Bear, 2000; Posey, 2004). This contributes to the colonization of Indigenous ways of knowing, because knowledge is abstracted from its *source* as well as from its *originators,* in order to meet the strict confines of the positivist approach. Thus the social and cultural context in which knowledge is situated is lost or ignored. The very success of positivism lies in its ability to take knowledge(s) from many

diverse sources and claim them as discoveries within positivism (Michell, Vizina, Augustus, & Sawyer, 2008). For example, important scientific advances in the fields of medicine, pharmacy, forestry, engineering, and many other disciplines can be attributed to the knowledge generated by diverse Indigenous cultures:

> Traditional Native knowledge about the natural world is often extremely sophisticated and of considerable practical value . . . Traditional Bolivian healers use some six hundred different medicinal herbs, and their counterparts in Southeast Asia may use up to sixty-five hundred kinds of plants for their medical concoctions. In addition, more than seventy-five percent of the 121 prescription drugs used around the world that are derived from plants are said to have been discovered on the basis of initial clues found in traditional indigenous medical practices. (Knudtson & Suzuki, 1992, p. 12)

Despite the clear Indigenous origins of many pharmaceuticals, Indigenous knowledge has been used by pharmaceutical companies for monetary gain, without crediting or compensating Indigenous peoples (Posey, 2004).

It is important to point out that positivist research is not always associated with a particular method or methods of conducting scientific research. It is the *perspective* with which certain methods are employed that is the most troubling, not the methods themselves (Denzin & Lincoln, 2008; Marker 2003). This means simply that positivist science can be either quantitative or qualitative, and, alternatively, a decolonized research agenda may include either quantitative or qualitative methods (Denzin & Lincoln, 2008). This distinction is important, since a research agenda that attempts to move towards a *decolonized* approach to research (an approach that positions Indigenous knowledge as a veritable source of knowledge generation) is not about *carte blanche* advocating or dismissing certain methods over others but, instead, critically interrogating the way in which those methods are applied.

Diversity of Thought Within Western Science

While Indigenous peoples have perhaps been the group most undermined and ignored through the proliferation of positivist thought, many others have also railed against the narrow conceptualizations of the world advocated by positivism. Substantial Western-derived schools of thought, including constructivism, critical theories, feminist theories, and queer theories, all stem from a well-established critique of positivism, questioning the notion that it offers the only correct way to acquire knowledge about our world (Denzin & Lincoln, 2008). Critics of positivism are deeply troubled by its domination over other forms of knowledge.

Within the critiques of positivism, alternative methods of thinking about and seeing the world are reflected upon, compared, and constantly changing. It is from these alternative places of theorizing that people of diverse races, sexualities, abilities, and religions have expressed their perspectives on how knowledge is produced, re-produced, understood, and accepted or rejected within various social locations.

Unlike non-positivist scientific approaches to research, such as critical theories or feminist theories, Indigenous ways of knowing have not emerged from a critique of positivism, nor have they always been required to use positivism as a benchmark for articulating the emergence of Indigenous thought. Indigenous worldviews, as far as we know, have existed since time immemorial, which suggests that positivism is in fact "newer." Since Indigenous worldviews do not emerge from within a critique of positivism and yet are required to navigate within a colonized world, Indigenous knowledges are distinct from Western theories that have emerged as a response to positivism. Nevertheless, alternative Western perspectives can and do assume various forms of imperialism, domination, and colonization through junctures of sexuality, age, dis/ability, religion, and/or race, which can be attributed to the dominating effects of positivist science and thought. Since these positions are marginalized within the borders of Western science, they offer a different lens through which to understand the imperialistic tendencies of positivist science and thought. In this sense, these alternative perspectives stand not only to inform but also to benefit from Indigenous ways of knowing.

Respect for diversity of thought has been inherent to Indigenous sciences and philosophies, since this is what allows one's own perspectives and experiences to respond to changes and fluctuations in the world (Loppie, 2007). Sharing diverse perspectives has been integral to all cultures, even those in the Western world, since learning about and understanding the perspectives of others is essential to cultural survival (Turnbull, 1997). It has long been recognized by Indigenous peoples that the health of Mother Earth is directly linked to the health of people: If we do not pay attention to the knowledge that exists among diverse cultures regarding how to take care of local ecologies, we risk abandoning the very solutions that we seek with respect to the world's most pressing health and ecological crises (Davis, 2000). The scholar and anthropologist Wade Davis (2000) argues that the diversity of thought that results from cultural diversity is at least as important for the protection and preservation of Mother Earth as biodiversity. Without cultural diversity and, perhaps more importantly, the recognition and acceptance of diverse ways of knowing that accompany cultural diversity, the very health and well-being of Mother Earth is jeopardized.

If we accept the notion that diverse ways of knowing are integral to the promotion and protection of the health of people and Mother Earth, then we must reject positivism and positivist thought altogether, as positivism and Indigenous worldviews cannot co-exist. Although rejecting positivism might seem contradictory to the acceptance of diverse perspectives, positivist thought does not allow or acknowledge alternative expressions of knowing, and so rejecting positivism is an exception to the general principles of acceptance in Indigenous cultures. It is not the lending or borrowing of knowledge that is problematic for Indigenous cultures; indeed, lending and borrowing knowledge is a characteristic of many Indigenous worldviews (Loppie, 2007). It is when Indigenous knowledge is undermined through appropriation that Indigenous peoples risk further colonization. In fact, the need to appropriate knowledge and then claim that the origins of that knowledge are positivist is precisely what supports the existence and proliferation of positivism. An important aspect of a decolonized research agenda is avoidance of re-inscribing a colonial agenda in Indigenous research (Smith, 1999). This does not mean isolating Indigenous knowledge(s) from Western sciences; indeed, this would undermine the pluralistic nature of Indigenous knowledge (Loppie, 2007). Rather, a decolonized research agenda requires careful reflection on the role that colonization plays in the articulation of Indigenous knowledges today and on how Indigenous knowledges are shaped by experiences of colonization. Thus, decolonized Indigenous scholarship does not assume that a state of pre-colonization can ever be achieved, but in the process of reflecting on how Indigenous knowledge has been shaped by colonization we can begin to identify colonial practices and move beyond the boundaries created by colonization, rejecting forms of knowledge that perpetuate a colonial agenda.

The concept of two-eyed seeing offers a framework from which to explain not only how different types of knowing can be brought together, but why they are important. Identifying Western theories that are closely aligned with Indigenous thought might, at first glance, appear to reinforce the idea that the similarities between Western theories and Indigenous thought are so great that there is no need for both perspectives to exist. However, as Bartlett, Marshall, and Marshall (2007) point out, diverse perspectives always have roots that emerge from very different places — even though they may be similar in many ways, they have been created to respond to the needs and desires of a particular group of people. Just as Indigenous sciences and philosophies have emerged from a direct and intimate relationship with local ecologies, creating an unending diversity of perspectives, languages, understandings, and knowledge(s) of the world and how to live in it, Western theories emerged as a means to convey different perspectives within Western sciences. We must be

attentive to the strengths and insights of each perspective, and must recognize the diverse places from which they have come and the diverse purposes for which they were intended (Bartlett et al., 2007).

Re-imagining the Landscape of Indigenous Health Research

The previous section argued that conventional Western scientific approaches to health research often ignore or undermine alternative ways of knowing, preferring to focus on the pursuit of objective, detached research that can uncover the "truth" about a particular topic (Denzin & Lincoln, 2008; Marker, 2003; Petch, 2000). As a direct result of the colonization, appropriation, and suppression of Indigenous knowledge, Indigenous health researchers and their allies strive towards a *decolonized* approach to research. A decolonized approach asks whether conventional scientific research contributes to the oppression and colonization of Indigenous peoples worldwide (Smith, 1999). As Denzin and Lincoln (2008) argue, "Indigenous knowledge systems are too frequently made into objects of study, treated as if they were instances of quaint folk theory held by the members of a primitive culture. The decolonizing project reverses this equation, making Western systems of knowledge the object of critique and inquiry" (p. 6).

A decolonized approach to research requires that all stages of research critically reflect on *how* questions are asked, *why* they are being asked and by *whom* (Smith, 1999). Through the process of reflecting on the entire research *process,* the purpose of research becomes more than just the production of new knowledge; it upholds the pedagogical, political, moral, and ethical principles that resist oppression and contribute to strategies that reposition research to reflect the unique knowledge, beliefs, and values of Indigenous communities. Thus, it creates research that always "begins with the concerns of Indigenous people. It is assessed in terms of the benefits it creates for them" (Denzin & Lincoln, 2008, p. 2). In doing so, it offers a means for Indigenous peoples to address the political and social conditions that perpetuate ill health, poverty, and lack of educational opportunities in their communities (Smith, 1999).

If Indigenous struggles for autonomy and freedom from oppression begin at the level of epistemology (Kovach, 2009), and if the health inequities experienced within Indigenous communities stem from the greatest of all oppressors, colonization, whose intent is to silence Indigenous voices, then a decolonized approach to research means that Indigenous worldviews *must* be included in discussions that influence their health and well-being. This means that for Indigenous communities to witness health improvements, the solutions to health and social crises must include Indigenous perspectives and understandings about health

and social issues. We need a framework that positions Indigenous knowledge as an integral source of information about health and well-being. Such a framework, however, must also recognize the important and undeniable contributions that non-Indigenous, or more specifically Western scientific, understandings of health have made to Indigenous health and well-being. It must tease apart the contributions of Western science that maintain and perpetuate colonization from those that make space for Indigenous perspectives to inform and shape the health and well-being of not only Indigenous peoples, but also Mother Earth and all of her inhabitants.

The Origins of Two-Eyed Seeing

Two-eyed seeing is a concept introduced to the world of research by Mi'kmaw Elders Albert and Murdena Marshall from Eskasoni, a First Nation in Cape Breton, Nova Scotia. It has gained renown for its role in the development of the Integrative Science Program at Cape Breton University (led by Canada Research Chair Cheryl Bartlett and Elders Murdena and Albert Marshall). Here, Indigenous knowledge and Western sciences interact in a science program that offers Mi'kmaq and non-Mi'kmaq students the opportunity to learn about diverse ways of understanding our world. Two-eyed seeing acts as "an important guiding principle for one's journey while here on Mother Earth" (Bartlett et al., 2007, p. 13). It stems from the belief that there are many ways of understanding the world, some of which are represented by European-derived (Western) sciences and others by various Indigenous knowledge systems and sciences. Albert Marshall contends that aspects of both Western and Indigenous ways of knowing about the world are important for Indigenous communities. If we learn to appreciate multiple perspectives, we can draw on what is useful and relevant to inform and build upon our existing knowledge. Essentially, we can learn to "see through both eyes." Two-eyed seeing stresses the importance of being mindful of alternative ways of knowing (multiple epistemologies) in order to constantly question and reflect on the partiality of one's perspective. It values difference and contradiction over the integration or melding of diverse perspectives, which can result in the domination of one perspective over the others. As a result, one "eye" is never subsumed or dominated by the other; rather, each eye represents a way to see the world that is always partial. When both eyes are used together, this does not mean that our view is now "complete and whole," but a new way of seeing the world has been created — one that respects the differences that each can offer.

An important aspect of two-eyed seeing is that it responds to the idea that our perspectives of the world are never static but are constantly shift-

ing and changing in response to the changing world around us. Local ecosystems are composed of interdependent parts that are in a state of constant flux. No one part can be altered or changed without causing changes to all the other parts. Each part of the ecosystem has a responsibility to the whole, such that if for some reason one part does not fulfil its role the entire ecosystem is affected (Henderson, 2000; Knudtson & Suzuki, 1992). Albert Marshall likens this interdependence to the roots of trees beneath a forest floor, where trees of different types — birch, pine, fir — are all "holding hands" (Bartlett et al., in press). Indigenous philosophies recognize interconnections and relationships, rather than narrowly seeing them as discrete elements unrelated to the whole. Human beings represent one part of this web of life and are connected to all things living and non-living. Thus, like all other parts of the ecosystem, humanity has a responsibility to contribute to the whole in a way that ensures "interactive harmony" (Henderson, 2000). Interactive harmony means that we must accept the strengths, beauty, and limits of our ecology. In many Indigenous societies, this way of being is constantly reinforced through prayers, rituals, songs, and dances that are tailored to specific localities and the corresponding needs and desires of their people (Little Bear, 2000).

What we are able to know is shaped not only by our physical surroundings, but also by our social surroundings. The social construction of knowledge with which two-eyed seeing is imbued recognizes that we are social beings and in order for knowledge to be produced anew "we all need one another" (Marshall, n.d.). The fluid nature of two eyes that can look back and forth and assist one another to attain a more complete picture of the world indicates that Indigenous knowledge merits a place in the world both broadly and in the realm of health research, and that this place is not "greater or lesser than" the place held by Western scientific understandings of health but is, simply, different. It also recognizes that, through the acceptance of diverse perspectives, those solutions that appear to be the most beneficial for addressing a particular set of circumstances or situations, whether they are Western or Indigenous in origin, or even if they are some variation of the two, can be employed. The intent is to share knowledge with the understanding that it will be used for the greater good.

As a concept that values both Western and Indigenous ways of thinking, two-eyed seeing embraces diverse understandings of reality. Beyond recognizing and accepting the existence of diverse perspectives, two-eyed seeing suggests that different perspectives must be reflexively considered. The concept of reflexivity is one that has us reflect on our firmly established beliefs and assumptions and constantly question them through the incorporation of new ideas and experiences (Tomaselli, Dyll, & Francis,

2008). An exceedingly important aspect of reflexivity in research is what Bartlett et al. (in press) call "co-learning," whereby the relationship between researchers and communities develops in such a way that different epistemologies and ontologies are shared and form the basis for working together in a manner that "involves learning from each other, learning together, learning our commonalities and differences, and learning to see how to weave back and forth between our cultures' actions, values and knowledge as circumstances require" (p. 5).

In addition to the importance of understanding the physical and social elements of our world, reflexivity in two-eyed seeing challenges us to include the wisdom of the spiritual and the humility of the emotional in our quest to conduct health research and improve the lives of Indigenous peoples (Bartlett, Marshall, & Marshall, 2012). In this perspective, the spiritual and emotional dimensions of human understanding are not positioned as more important than the physical or social, but each dimension is necessary for a complete understanding of our world. This permits us to ask what value can be added to our understanding of the world if we incorporate these human dimensions into all varieties of health research, Indigenous and non-Indigenous alike.

Reflexivity also requires us to do more than simply look at ourselves, to also consider how different beliefs and values inform and shape how others see the world (Tomaselli et al., 2008). Marker (2003) argues that reflexivity calls for researchers to question the structures (social, political, economic, etc.) that serve to perpetuate the issues that are being researched. This entails using a "mirror" to reflect on the role of the researcher in conducting research, whereas research has tended to use only a "microscope" to understand populations of interest. For health researchers specifically, it suggests a responsibility to go beyond what might be viewed as the "expertise" of the research (which might, for example, be related to virology, prenatal health, or diabetes), to look at how the lenses through which Indigenous and Western scientific knowledge gets interpreted have dislocated Indigenous peoples from the traditional methods of healing and living that have contributed to and ultimately "caused" the health issues being experienced.

Indigenous Knowledge Generation

The ability to learn, express, and convey Indigenous knowledge is closely related to health (Bartlett et al., 2012; Chandler & Lalonde, 2008). Within our conventional health and social systems, Indigenous knowledge remains at the margins of knowledge generation, through a process referred to as "cognitive imperialism" (Battiste, 2000). Cognitive imperialism positions positivism as the only correct way of understanding the

world. It does so by denying the existence of alternatives in order to support its own legitimacy. In the context of health inequities experienced within Indigenous communities, the success of cognitive imperialism does not lie, as many would suggest, in the failure of existing health systems to treat the health problems of Indigenous peoples, although this is certainly part of the issue. Rather, it lies in the concerted effort to dismiss, undermine, or ignore the very existence of Indigenous approaches to health and healing, and in the failure to acknowledge the fact that Indigenous communities have thrived for many, many millennia using medicines and healing techniques developed according to their own forms of knowledge generation, without the need for Western medical intervention. In working towards the dismissal of cognitive imperialism and towards a space where Indigenous knowledge can be embraced, the means by which knowledge is generated in Indigenous communities must be viewed as veritable in its own right. Such a process requires opportunities for respect, reflexivity, and co-learning.

Among Indigenous peoples, the generation and application of knowledge tend to be participatory, communal, experiential, and reflective of localized geography (Loppie, 2007; Smylie et al., 2004). This means that more value is placed on the traditions, laws, customs, and philosophy of the group than on the successes and achievements of individuals. It also means that a diversity of perspectives and opinions is valued, since it is believed that no one perspective is right or wrong; all views are seen to contribute something unique and important; diversity is also respected in that individuals often need to know a little bit about a great number of things.

The collective nature of Indigenous knowledge rests on stories derived from practical experience. The oral tradition of storytelling provides the foundation for local knowledge by helping people to connect their own experiences with those from the past. By sharing their personal experiences and learning about the experiences of others through stories, individuals develop wisdom, which is then passed on to the younger generations (Battiste, 2000; Cruickshank, 1998; King, 2003). A unique feature of Indigenous stories is that contradictory perceptions of the same event are often accepted, because they are seen as specific to the individual (Henderson, 2000). No perspective is dismissed, since all perspectives offer something important. For example, if particular phenomena cannot be fully explained through certain versions of a story, those versions are put aside, rather than forgotten, so that if new information arises it can be used to complement what is already known. This collective process of knowledge-building ensures that very little is forgotten and that all perspectives, even those that are contradictory, are given value.

An additional feature of Indigenous knowledge-generation is the integral importance of historical knowledge (Knudtson & Suzuki, 1992). Since stories have their roots in thousands and thousands of years of history, they are a means of reminding us where we have been and the issues and problems that others have faced — as well as how they reacted and responded to various issues and crises. Essentially, history not only tells us where we have been, but also helps us to understand the future. Paying careful attention to the lessons learned and the experiences of the past ensures that present generations are able to learn from the successes and failures of their ancestors and Elders and do not have to constantly generate new solutions to modern-day problems. Building on historical knowledge in this way means that new information is continually used to augment existing knowledge, in order to achieve a deeper understanding of a particular phenomenon.

Embracing Two-Eyed Seeing

> Science is part of culture, and . . . how science is done largely depends on the culture in which it is practiced. (Iaccarino, 2003, p. 220)

Often, diverse perspectives of reality, and thus approaches to health research, are seen as on a continuum, with Western scientific understandings of health at one end and Indigenous knowledge(s) about health at the other. In this conceptualization, overlapping, blending, or blurring will occur at some point on the continuum. Brandt (2007) and Aikenhead and Ogawa (2007) argue that conceiving of knowledge in this way reinforces dichotomies that are not aligned with Indigenous perspectives. Brandt proposes that if knowledge is considered from a *both/and* rather than an *either/or* position, one can begin to "challenge the fixed notion of the binary to reveal positions that were previously erased and ignored simply because they did not fit into normative categories" (p. 602). If, as Brandt suggests, knowledge is not a dichotomy between Indigenous knowledge(s) and Western sciences and there is, in fact, overlap between the two systems, then we need to re-conceptualize how we think about the production of knowledge that does not reinforce this dichotomy.

According to Turnbull (1997), one way of thinking about the production of knowledge is through a conceptual framework where "all knowledge systems can be equitably compared" (p. 557) and where differences are recognized and embraced. Turnbull argues that there is no "great divide" between many Western sciences and Indigenous knowledge(s), but that the two systems operate within "different knowledge spaces with different devices and strategies for assembling and moving the knowl-

edge" (p. 557). He proposes a "thirdspace," where knowledge systems can be reframed and re-negotiated.

The notion of thirdspace as proposed by Turnbull (1997) entails two overlapping concentric circles, with the shared space between them being the thirdspace. Brandt (2007) argues that thirdspace, while useful to the extent that it moves beyond the either/or continuum separating Western and Indigenous knowledge, it still implies that many aspects of diverse knowledge systems are "out of reach" of one another, since the only point at which knowledge is shared is that where they converge. Brandt envisages an expansion of this shared space, proposing that it be thought of as "common ground," where diverse knowledge systems co-exist, each informing and building upon the knowledge of the other, to varying degrees, depending on the context, so that one type of knowledge is never subsumed by the other.

In her research with students from linguistically and culturally diverse backgrounds attending university in a Western setting, Brandt (2007) was constantly searching for a "border" between Indigenous knowledge and Western science. She realized that by making such a distinction she was reinforcing rather than questioning the very dichotomies she was trying to avoid. Brandt found that the "bridge" linking Indigenous and Western knowledge systems was illusive, so she began to look at the ways in which her research participants were simultaneously embracing multiple epistemologies. Her research participants "held firm to their traditional worldviews" (p. 602) but added certain aspects of Western epistemology that served to expand and diversify their traditional worldviews. For example, one participant "held multiple epistemologies where she references her Indigenous Navajo worldview, beliefs through the Native American Church, teachings from her education in the Catholic school, oral traditions within her family, and Eurocentric science" (p. 602). For Brandt, "common ground implies that one does not have to relinquish either position, but . . . can simultaneously embrace elements of Eurocentric societies and Indigenous knowledge" (p. 603), depending on the circumstances.

Brandt's (2007) "common ground" approach aligns with the conceptualization that Marshall, Marshall, and Bartlett (2011) use to describe the "bringing together" of cosmologies, philosophies, stories, and worldviews contained within two-eyed seeing. They propose that if we envisage these two versions of knowing (Western and Indigenous) as two people sitting around a campfire sharing knowledge, suspending judgements and opinions and simply listening to what the other has to say — then we have the essence of two-eyed seeing. Moreover, they suggest that if such topics as the health of communities were to be tackled during such "campfire

discussions," the same conclusions about health and healing would be reached, but through very different approaches and channels.

Moving beyond the Indigenous knowledge/Western science continuum also presents an opportunity to reflect upon which elements of Indigenous and Western sciences are best suited to addressing the issue at hand — be it a health crisis, a chronic health problem, or a systemic issue that contributes to ill health. Of integral importance are the *critical contributions* that Western sciences have offered Indigenous peoples, and vice-versa. This is not to suggest that Western sciences have not also been the source of much harm, or that such harm should be ignored, but it is important to distinguish among the various epistemologies that inform diverse Western sciences. Too often, criticism of non-Indigenous sciences is rooted in the idea that they are all attached to positivism, at least to some degree. This ignores the myriad holistic approaches to research that are commonly found in the social sciences, as well as those within the natural sciences that embrace the existence of multiple realities (van Eijck, 2007). Reducing Western sciences to those forms that are rooted in positivist or reductionist approaches is incongruent with both current and past Indigenous approaches to knowledge-making and knowledge generation. Aikenhead and Ogawa (2007) argue that criticizing Western science without regard for its diversity not only reduces science to that which is understood through positivist approaches to science, but also under-values the important contributions that Indigenous knowledge has made to science. This contributes to, and one might argue *enhances,* the very reductionist, narrowly conceived arguments that are born of positivist thought.

Two-eyed seeing is not about nursing, specifically, nor even about health singularly. It is intended to apply to life itself. It does not offer new methodologies, nor does it offer ideas about the types of knowledge that it might generate. Rather, it challenges us (Indigenous and non-Indigenous peoples alike) to understand the larger dimensions (physical, social, emotional, spiritual) of our knowledge systems and the limitations and challenges that accompany any single approach to viewing the world. The ultimate challenge is to find new and better ways of doing research in order to create a healthier place for our children and our children's children, for Seven Generations forward. The implications of doing so may not be immediately evident, but, as Albert Marshall points out, even though an ash tree drops its seeds on the ground at the end of each season, if the conditions are not right it may take many seasons for the seed to decide to germinate (Bartlett et al., in press). The same is true when we attempt to "measure" the benefits of approaching health issues using two-eyed seeing; it takes time for Indigenous approaches to health and healing to translate into reduced health inequities, but we must

believe that the process we are following will result in a healthier Mother Earth — which will ultimately create a healthier place for us all.

Conclusion

This article has offered a way to re-think how the production of knowledge about Indigenous health is understood. It is by no means conclusive, as learning is a dynamic process. Two-eyed seeing presents both Indigenous and Western perspectives as distinct knowledge systems unto themselves, but as knowledge systems that can offer only a "partial" perspective on reality. When these partial perspectives are viewed together, the result is not a "complete" view of the world but one that is different and that can perhaps offer a new way of thinking about how knowledge is produced, one that could not emerge if we looked through "one eye" only. Thus, it presents a conceptualization of knowledge production that does not rely upon dyadic or dualistic thinking, since each "eye" must continually weave back and forth between its own understandings and those of others, which hold new understandings and opportunities. The "new" perspective gained by seeing through two eyes provides clarity and insight that might help us to understand the health crises experienced by many Indigenous communities.

Two-eyed seeing is a way of drawing upon Indigenous knowledge and non-positivist Western sciences that addresses the needs of the community while not pitting one view against another or favouring one perspective over another. It moves beyond the simple dichotomies of Western sciences and Indigenous knowledges. Through the analogy of two eyes, we learn that no one perspective is ever complete and whole, and that the very creation of dichotomies and dualisms assumes that borders can be drawn between one type of knowledge and another.

By embracing non-positivistic Western perspectives we are upholding one of the guiding principles of two-eyed seeing — that all things are related and share similar issues and concerns, even human beings whose differences may appear vast. As Elder Albert Marshall suggests, we human beings would do well to enact our humility in dealing with the problems and concerns that face us.

> Only when we come to realize that everything we do to the water, the air and the earth, we also ultimately do to ourselves . . . will we treat our environment and ourselves with equal reverence . . . and only with the understanding that all must be maintained and that all must be equal, will we be healthy. This is the path that will lead us to good health and wellness — for humans and all others in our environment and the Earth itself. (Bartlett et al., in press, p. 7)

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