International Journal of Social Research Methodology

ISSN: 1364-5579 (Print) 1464-5300 (Online) Journal homepage: https://www.tandfonline.com/loi/tsrm20

Indigenous data, indigenous methodologies and indigenous data sovereignty

Maggie Walter & Michele Suina

To cite this article: Maggie Walter & Michele Suina (2019) Indigenous data, indigenous methodologies and indigenous data sovereignty, International Journal of Social Research Methodology, 22:3, 233-243, DOI: 10.1080/13645579.2018.1531228

To link to this article: https://doi.org/10.1080/13645579.2018.1531228

INTERNATIONAL JOURNAL OF SOCIAL RESEARCH METHODOLOGY
2019, VOL. 22, NO. 3, 233–243
https://doi.org/10.1080/13645579.2018.1531228

Routledge
Taylor & Francis Group

Indigenous data, indigenous methodologies and indigenous data sovereignty

Maggie Walter[a] and Michele Suina[b]

[a]School of Social Science, University of Tasmania, Hobart, Australia; [b]Albuquerque Area Southwest Tribal Epidemiology Centre, Albuquerque Area Indian Health Board, Inc., Albuquerque, NM, USA

ABSTRACT

The field of Indigenous methodologies has grown strongly since Tuhiwai Smith's 1999 groundbreaking book *Decolonizing Indigenous Methodologies*. For the most part however, there has been a marked absence of quantitative methodologies with the methods aligned with Indigenous methodologies predominantly qualitative. This article proposes that the absence of an Indigenous presence from Indigenous data production has resulted in an overwhelming statistical narrative of deficit for dispossessed Indigenous peoples around the globe. Using the theoretical concept of Indigenous Lifeworlds this article builds on the core premises of Walter and Andersen's 2013 book *Indigenous quantitative methodologies*. Arguing for a fundamental disturbance of the Western logics of statistical data the article details recent developments in the field including the emergence of the Indigenous Data Sovereignty movement. The article also explores Indigenous quantitative methodologies in practice using the case study of a Tribal Epidemiology Centre in New Mexico.

ARTICLE HISTORY
Received 24 August 2018
Accepted 27 September 2018

KEYWORDS
Indigenous; Indigenous data; Indigenous quantitative methodology; Indigenous data sovereignty

Introduction

Within the social research landscape Indigenous methodologies were established by Linda Tuhiwai' Smith's groundbreaking 1999 publication *Decolonizing Methodologies*. Smith's book did not specify a particular research method or even type of research method as synonymous with Indigenous research. Rather, the book's delineation of the set of principles and broad-based philosophy of Kaupapa Maori is as an approach to any research, qualitative, quantitative or mixed methods, which relates to Maori. In the two decades since Smith's work, however, the growing field of Indigenous methodological scholarship has been primarily aligned with qualitative research. Largely to the exclusion of quantitative research.

This quantitative avoidance can be linked to Indigenous peoples' longstanding (and largely justified) suspicions around research using positivist methodologies. Such research has frequently positioned Indigenous peoples within a deficit discourse under the guise of 'objectivity'. Yet, this critique, in its valid emphasis of the harm wrought by positivism, tends to scoop up all quantitative research as methodologically similar. The result is a type of orthodoxy: a presumption that qualitative methodologies and Indigenous methodologies are natural partners and that quantitative methodologies, by nature, are Western (Walter, 2005; Walter & Andersen, 2013). This is not so. Indigenous peoples are, and have always been, highly numerate in how we understand our worlds. Complex formulas and calculations underpin/ned Indigenous cropping, hunting and navigation to name just a few traditional daily activities.

CONTACT Maggie Walter Maggie.Walter@utas.edu.au Walter University of Tasmania, Hobart, Australia

Quantitative avoidance also has serious consequences. Being non-active in the quantitative research space equates to lived consequences for Indigenous peoples at the individual and collective level. Quantitative research methods are powerful analytical techniques and the statistics they produce form the primary evidence base for Indigenous policy in first world colonizing nation states such as the United States, Australia, Canada and Aotearoa New Zealand. An Indigenous absence from the field of Indigenous data and quantitative analysis, therefore, risks absence of Indigenous participation in the framing of the policy directions that flow from those data (Lovett, 2016; Walter & Andersen, 2013).

To our knowledge only one major publication has directly addressed Indigenous quantitative methodologies by Walter and Andersen (2013). This book's central argument is that the Western logic of statistical data are so pervasive, and the tropes of these logics in relation to Indigenous statistics so embedded, that these must be fundamentally disturbed before an Indigenous quantitative methodology can emerge. This article reiterates Walter and Andersen's (2013) core premises, but extends these using the concept of Indigenous Lifeworlds as its key theoretical frame. The article also draws on recent Indigenous quantitative methodological developments, including the Indigenous Data Sovereignty movement, to demonstrate the growing interest, primarily by Indigenous scholars, in Indigenous statistical data and in Indigenous quantitative methodologies. In the second half of the paper we explore Indigenous quantitative methodologies in practice, using a case study of the introduction of Indigenous quantitative methodologies within a Tribal Epidemiology Centre in New Mexico as our primary example.

Indigenous lifeworlds and Indigenous methodologies

As Indigenous scholars (palawa, Tasmania; Cochiti Pueblo, New Mexico), we have been aware since graduate days of a lack of fit between Western methodology and Indigenous research. Within Indigenous scholarship this incongruity is articulated through the notion that Indigenous methodologies make visible within the research process what is meaningful and logical in Indigenous understanding of ourselves and the world (Porsanger, 2004). An Indigenous methodology, therefore, is a methodology where the approach to, and undertaking of, research process and practices take Indigenous worldviews, perspectives, values and lived experience as their central axis. As such, Indigenous methodologies are a separate methodological paradigm; not the opposite or a derivative of Western methodologies (Tuhiwai Smith, 1999; Walter & Andersen, 2013).

We develop Porsanger's (2004) insight of Indigenous methodologies as grounded in Indigenous ways of knowing, being and doing via the concept of the Indigenous LifeWorld. The lifeworld, in the Western canon, is linked to phenomenology. Its research contribution is its emphasis on the subjectivity of lived reality. As per Husserl (1970) the lifeworld is the taken for grantedness of our embodied realities. But this seeming fixedness is a reflection of the social and cultural conditions of those experiences, not verifiable truths. As human beings our existence is always contextual. Our lived experience is inseparable from the social, cultural and physical world in which we exist and our experiences of this world are shaped by our relational positioning within it (Harrington, 2006). Thus, we interpret and make meaning through embodied phenomena such as touch, memory, imagination and social interactions, which in turn are shaped by our cultural and social background and the established social practices of our society (Stanford Encyclopedia of Philosophy, 2013).

The 'we' in the writings of the phenomenological philosophers was largely unquestioned as male, White, middle class, 20th century European. This intersubjectivity is not translatable to Indigenous lived realities. Rather, the Indigenous lifeworld, as defined here, has as its base the dual intersubjectivities of first world dispossessed Indigenous peoples. That is, peoples who meet Dyck's (1985) 4th world definition as those who; are Indigenous but have had their sovereignty appropriated, are now minorities within their traditional lands, are culturally stigmatized, economically and politically marginalized and struggling for social justice. The Indigenous lifeworld,

therefore, encompasses the relational positioning inherent in the social, political, historical, and cultural embodied realities of Indigenous lives framed through:

- intersubjectivity within peoplehood and the ways of being and doing of those peoples; inclusive of traditional and ongoing culture, belief and systems, practices, identity and ways of understanding the world and their own place, as a people, within it: and
- intersubjectivity as colonized, dispossessed marginalized peoples whose everyday life is framed through and directly impacted by their historical and ongoing relationship and interactions with the colonizing nation state.

The intersections/intertwining of these two inter-subjectivities define the lifeworld similarities and differences between dispossessed Indigenous peoples. Thus, for palawa Aboriginal Tasmanian and Pueblo Native American peoples, our identity, traditions, belief systems and everyday practices come from very different places geographically and culturally. But the embodied lived experience of that intersubjectivity exists within our shared positioning as dispossessed, politically marginalised Indigenous peoples, experiencing intergenerational and embedded socio-economic and health disparities. We both also share a historically and contemporaneously conflicted relationship with the nation state who now govern our traditional lands. This dual positioning encompasses what Tuhiwai Smith (1999) posits as the shared key tenets and underpinning philosophies of Indigenous methodological frames.

Indigenous statistics

Across first world colonizing settler nation states, Indigenous data largely conform to what Walter (2016, 2018)) describes as 5D data. That is, mainstream Indigenous statistics focus almost exclusively on items related to Indigenous difference, disparity, disadvantage, dysfunction and deprivation. Magnifying the impact of this discursive frame, 5D data are produced within a set of research practices that tend to the aggregate, are decontextualised from their social and cultural context and simplistically analyzed with the problematic Indigene compared pejoratively to the non-Indigenous norm (Walter, 2018; Kukutai, 2016; Walter & Andersen, 2013). Evidence to support this claim is easily found through a Google search of the term 'Indigenous statistics' or by inserting the name of a 4th World Indigenous people into the search i.e. Native American, Aboriginal and Torres Strait Islander, Maori, Native Hawaiian, First Nations, Alaskan Native. What comes up, invariably, is a sad list detailing Indigenous over-representation in negative health and education data, in incarceration rates and in embedded material disadvantage. Such 5D topics continue to dominate both official statistics and academic quantitative research on Indigenous peoples.

The lifeworld explains the marked similarity of the Indigenous statistical narrative across these diverse and geographically separate nation states. The underlying belief and value systems, epistemological approach and ontological assumptions of such data are largely drawn from a non-Indigenous relational positioning. From this intersubjective position a presumption of Indigenous deficit is entirely predictable. This problematic is magnified by the established practice of rendering these approach factors invisible. Those using Western methodologies frequently confuse methodology with method. Research papers detail in great depth how data were collected and the statistical techniques used. But they tend to muteness on their methodological approach as if it is inconsequential. It is not. As argued by Walter and Andersen (2013) who we are, the values that underpin our concept of self and our concept of others, our perspective on how the world operates and our own place within it and our understandings of how knowledge is construed and who the knowers are, fundamentally impact our research practices and presumptions.

This assertion of the centrality of methodology is as true for quantitative research as it is for other research practices. Accepting the premise that numbers exist as per Quine (1948) differs from accepting that numbers have a fixed reality. Numbers are not neutral entities. Statistics are human artefacts and in colonizing nation states such numbers applied to Indigenous peoples have a raced reality (Walter, 2010; Walter & Andersen, 2013). Their reality emerges not from mathematically supported analytical techniques but the social, racial and cultural standpoint of their creators who make assumptive determinations to collect some data and not others, to interrogate some objects over others, and to investigate some variable relationships over others. As per Zuberi and Bonilla-Silva (2008) it is dominant settler society questions that are hidden behind the cover of claims of objective methodology. Within this, the Indigene remains the object, caught in a numbered bind, viewed through the straitjacketing lens of deficit (Walter & Andersen, 2013).

For dispossessed Indigenous peoples, the more critical ontological questions are how are such numbers deployed and whom do they serve? Statistically supported narratives, framed by Euro defined definitions of civilization, were (and are) used to demonstrate our unfitness, to rationalize our dispossession, marginalization and to question even our right to be Indigenous (Tuhuwai Smith, 1999). These discourses ripple into contemporary racially differentiating statistics. Positioned as objective descriptors these numbers operate now, as they have always done, as mechanisms of unequal power relations. They define who and what Indigenous people are according to the terms of their non-indigenous producers and consumers. They also define what we cannot be. This impact is heightened by quantitative research use of numbers not just as counts, but as representatives of subjective items. Their form also conceal what is excluded; the lifeworld of those they purport to represent; Indigenous peoples (Walter, 2016; Walter & Andersen, 2013).

Big Data and Open Data, operate to further distance lived social and cultural realities from their database embodiment. With Big Data, understanding that dominant norms and social understandings, not statistical methods, determine social data meanings is even further concealed. Linking multiple 5D data sets (health, schooling, justice system, welfare etc.) and/or mining other data will provide a bigger ball of data, but not necessarily a more informative one. No matter how sophisticated the linking or the analytical techniques used, if only deficit-related items (i.e. educational comparisons) are included then obtaining 'results' outside of the tired existing trope of Indigenous statistics is dim (Walter, 2018). Open Data, without specific Indigenous data protocols, just expands the number of Indigenous statistical analyzes that are conceived and executed from non-Indigenous worldviews.

Indigenous data and indigenous data sovereignty

Indigenous quantitative research, as currently construed, is missing data framed through the Indigenous Lifeworld and/or which prioritize Indigenous data requirements. This lacuna is not just a methodological imperative. There is a link between Indigenous development agendas and data as a resource. Indigenous self-determination relies on data self-determination. This connection is a recurring theme at the United Nations Permanent Forum on Indigenous Issues where concerns about the relevance of existing statistical frameworks and the lack of Indigenous participation in data processes have long been raised (Davis, 2016). Specific data needs vary across Indigenous peoples and geographies, but there is broad agreement on the need for data, which meet Indigenous data needs and aspirations. These include, but are not limited to, data that disrupt deficit narratives, data that are disaggregated, data that reflect the embodied social, political, historical, and cultural realities of Indigenous people's lives, as Indigenous peoples, and data that address Indigenous nation re-building agendas (Rainie, Rodriguez Lonebear & Martinez, 2017; Walter, 2018).

These issues cohere within the Indigenous Data Sovereignty movement. Indigenous Data Sovereignty centres on Indigenous collective rights to data about our peoples, territories, lifeways and natural resources and is supported by Indigenous peoples' inherent rights of self-determination and governance over their peoples, country and resources as described in the United Nations

Declaration on the Rights of Indigenous Peoples (UNDRIP) (Taylor & Kukutai, 2015). The concept is defined as the right of Indigenous peoples to determine the means of collection, access, analysis, interpretation, management, dissemination and reuse of data pertaining to the Indigenous peoples from whom it has been derived, or to whom it relates (Kukutai & Taylor, 2016; Snipp, 2016). Data in this sense are not restricted to statistical data, but such data are a primary concern of the Indigenous Data Sovereignty movement and its advocacy. Data sovereignty is practiced through Indigenous data governance, which assert Indigenous interests in relation to data. The primary vehicle is Indigenous decision-making across the data ecosystem; from data conception to control of access to and usage of data. Indigenous decision-making is a prerequisite for ensuring Indigenous data reflects Indigenous priorities, values, culture, lifeworlds and diversity.

An early response to the problematic of the alienation of Indigenous peoples from their own data are the OCAP© (Ownership, Control, Access, Possession) principles from Canada. In 1995, tired of non-Indigenous data users assuming the mantle of unbiased experts to speak with authority about First Nations realities, data control was demanded as a prerequisite for participation in a government health survey. A new model of how statistical data were done, OCAP©, was developed by First Nations. Trademarking the acronym to prevent its misuse, these principles provide First Nations with collective and broad-based control of their own data, its collection and its use (FNIGC, 2016). National bodies such as the Institute for Clinical Evaluative Sciences have adjusted their Indigenous data practices through the enactment of a set of data principles aligned to OCAP (Walker, Lovett, Kukutai, Jones, & Henry, 2017).

The reclaiming of Indigenous data rights is now occurring across colonizing nation states. In Australia, the *Maiam nayri Wingara* Indigenous Data Sovereignty Collective seeks to change data practices in relation to Aboriginal and Torres Strait Islander peoples. A 2018 meeting determined that Indigenous peoples in Australia had the right to exercise control of the Indigenous data ecosystem inclusive of data creation, development, stewardship, analysis, dissemination and infrastructure to ensure that such data are: contextual and disaggregated; relevant and empowering of sustainable self-determination and effective self-governance; accountable to Indigenous peoples; protective of Indigenous individual and collective interests (Indigenous Data Sovereignty Summit Communique, 2018). In Aotearoa New Zealand the *Te Mana Raraunga* Indigenous Data Sovereignty Network's Charter (2018) states its purpose as enabling Māori Data Sovereignty and to advance Māori aspirations for collective and individual wellbeing by: asserting Māori rights and interests in relation to data; ensuring data for and about Māori can be safeguarded and protected; requiring the quality and integrity of Māori data and its collection; advocating for Māori involvement in the governance of data repositories; supporting the development of Māori data infrastructure and security systems; and supporting the development of sustainable Māori digital businesses and innovations. The United States Indigenous Data Sovereignty Network (USIDSN, 2018) is working to ensure that data for and about Indigenous nations and peoples in the United States (American Indians, Alaska Natives, and Native Hawaiians) are utilized to advance Indigenous aspirations for collective and individual wellbeing. The Network's primary function is to provide research information and policy advocacy to safeguard the rights and promote the interests of Indigenous nations and peoples in relation to data.

Indigenous quantitative methodologies in practice: albuquerque area southwest tribal epidemiology centre

A pertinent example of the adoption of Indigenous quantitative methodologies aligned with Indigenous Data Sovereignty principles is the work of the Albuquerque Area Southwest Tribal Epidemiology Centre (AASTEC). AASTEC is based at the Albuquerque Area Indian Health Board (AAIHB) and serves tribal communities in New Mexico, southern Colorado, and west Texas. Established in 2006, the mission of AASTEC is to collaborate with the 27 Tribes in the Indian

Health Service (IHS) Albuquerque Administrative Area to provide high quality, culturally-congruent epidemiology/surveillance, capacity development, program evaluation, and health promotion/disease prevention services.

AASTEC is one of 12 Tribal Epidemiology Centres serving American Indians and Alaska Natives throughout the United States. As a Tribal Epidemiology Centre, AASTEC has public health authority status as mandated in the US Indian Health Care Improvement Act (IHCIA), permanently reauthorized under the Patient Protection and Affordable Care Act (PL 111–148). The IHCIA also allows Tribal Epidemiology Centres to access health data from the US Secretary of the Department of Health and Human Services (DHHS) about American Indians and Alaska Natives and tribal nations in their regions (Hoss, 2015).

Even though federally recognized tribes also have public health authority status, challenges remain in accessing their own data from federal and state entities. It is also challenging for AASTEC to access tribal data on behalf of tribes at their request. However, AASTEC is situated in a unique position to serve as an intermediary between federal and state government to provide tribal specific data directly to tribes through the establishment of data sharing agreements between tribal nations and AASTEC. AASTEC is also positioned to be more responsive to the unique data needs of tribes in the Albuquerque Area based on tribal self-determined data priorities. This can help to alleviate data access issues and to move toward higher quality and representative data by working directly with tribes to analyze and interpret data to inform tribal decision making and move towards action.

AASTEC has been committed, since its inception, to honoring tribal sovereignty and working side-by-side with tribes to provide meaningful data. In recent times the work of Walter and Andersen (2013) on quantitative methodologies and the Indigenous Data Sovereignty movement has further highlighted the problematics of dominant epidemiological quantitative data practices and the resultant data based on western constructions of the world and numbers. In response, since 2017, AASTEC has adopted an active Indigenous quantitative methodological approach within its own work. The purpose is to move beyond superficial consultation and mere adaptation of survey instruments based on western understandings of the world. Rather, this approach recognises tribal self-determination to decide what health means based on their own Indigenous LifeWorlds as the driver of what data are collected.

For Indigenous peoples, health is not just about maintaining physical health, such as through exercise or taking medications to prevent and manage diseases, it is connected to their ways of being and doing that are unique to their identity and understanding of the world. For example, Pueblo health is connected to a total Pueblo way of life that supports wellness and includes Pueblo spirituality and ceremonies, traditional medicine, heritage languages, family and community connectedness, agricultural way of life, and physical wellness (Suina, 2016). This holistic perspective is largely absent in current public health surveillance and epidemiology processes and practices. A search of validated survey instruments, typical of public health practice, finds a body of literature driven by western constructions of life that define health. But it is not possible to validly add tribal related health concepts to survey instruments that have at their base western ideations of health. What are required are instruments that are conceived and validated by tribes from the very beginning. Tribes must be in the driver's seat and maintain control of what questions are asked and who gets to ask the questions about health based on their Indigenous LifeWorlds, as well as who can access this information to protect their Indigenous knowledge and to ensure that it is not misrepresented.

Both intersubjectivities, Indigenous and public health epidemiology, drive our work. These dual subjectivities necessitate the need to find balance between both to not reproduce a system that constructs narrow deficient-based Indigenous statistical narratives and 5D data that are driven by the non-Indigenous relational positioning. This is the problematic that AASTEC has to address. It is not enough to include data that reflect health concepts connected to Indigenous LifeWorlds, but it is imperative to make visible the methodology that drives epidemiology in its

current state so that an Indigenous quantitative methodology becomes clearer to transform epidemiological practice. This methodology must also consider the role of colonialism in the health conditions experienced today by Indigenous peoples.

A key aim of AASTEC's adoption of Indigenous quantitative methodologies and the principles of Indigenous Data Sovereignty is to strengthen existing tribal public health data systems and reporting to produce the highest quality, tribe-specific data available to the American Indian population throughout our area. Furthermore, this adoption provides AASTEC with the opportunity to better understand how to more effectively serve the tribes in the region by assessing our current practices so as not to replicate harmful colonial data practices that continue today in public health and epidemiology practice (Poudrier, 2003; Walter & Andersen, 2013). Indigenous Data Sovereignty and governance frameworks also provide a strong foundation based on the rights of Tribal nations for approaching Tribal related data issues such as appropriate presentation of race and ethnicity in health-related data and the inclusion of tribal-specific questions in statewide public health surveillance instruments.

In April 2017, AASTEC's Good Health and Wellness in Indian Country Program convened a *'Native think tank'* in collaboration with a well-respected tribal community entity, the Santa Fe Indian School Leadership Institute. The aim was to better understand the role of a tribal serving organization such as AAIHB/AASTEC in the practical enactment of Indigenous quantitative methodologies and Indigenous Data Sovereignty. Understanding the role of tribal serving entities is critical because the inherent power to control data lies within the sovereign tribal nations and not external organizations. This important point must be underscored to disrupt the traditional paternalistic orientation of state and federal governmental entities towards tribes and to support sovereign tribal nations to realize their own vision for health and wellness instead of one that is imposed by outside standards. The think tank resulted in the establishment of a road map for AASTEC to strengthen our current efforts to provide the highest quality of data to the Tribal nations and bands we serve. The think tank also sought to equip AASTEC to support Indigenous Data Sovereignty and promote the use of Indigenous quantitative methodologies within our own area, as well as to inform efforts to advance data sovereignty by others. This process led to three think tank recommendations that could immediately be acted upon:

(1) To cultivate technical skills among community members related to survey development, data collection, analysis, and reporting;
(2) To build comfort and understanding regarding research methodologies and methods among tribal partners; and
(3) To advocate for Indigenous research methodologies and Indigenous Data Sovereignty.

Each of these recommendations is discussed in the following section alongside an outline of the work that has occurred since April 2017 to address each.

Recommendation 1: cultivate technical skills among community members related to survey development, data collection, analysis, and reporting

An initial step for working with tribes is to foster technical skills that lead to the development and validation of tribal driven health surveys. Such skills allow tribes to develop instruments that are built on their own Indigenous lifeworlds definitions and explanations of health to generate Indigenous data. This includes providing support and coaching related to data collection, analysis, and report writing where data analysis and interpretation are tribally driven by our tribal partners. It is important to note that ownership of the methodological and Indigenous Data Sovereignty processes and resulting outcomes belongs to the tribes and AASTEC would play a supportive role.

Much of AASTEC's work is already to provide technical assistance, training, and resources to the tribes we serve. However, this recommendation pointed to the need for rethinking how we deliver

technical assistance and epidemiological training so that an Indigenous centred approach is foundational to what we offer. This includes incorporating Indigenous Data Sovereignty and Indigenous research/evaluation methodologies and methods into our training program. Since April 2017, we have developed and piloted a training module that teaches about these concepts and utilizes experiential group activities to reinforce understanding of content. For example, we used an interactive team building activity to identify Native determinants of health at the beginning of the training to theorize what health means to Native people. This conceptualisation was then used as the basis for determining evaluation questions and approaches. This module will be incorporated into future trainings related to data collection, analysis and reporting and will be incorporated into an epidemiology 101 course at a local tribal college that is currently being planned.

Recommendation 2: build comfort and understanding regarding research methods among tribal partners

The harmful research by outsiders and the resulting deficit based data generated makes discomfort and distrust towards western research a reality when working with tribes. Shifting the power back to tribes to decide what they determine are relevant data and for what purposes they deem appropriate is fundamental for rebuilding trust. Demystifying western scientific research methodologies and methods is critical to disrupt the academic institutional monopoly on research/evaluation and to create a local understanding of research and data for tribal-driven approaches to quantitative data to truly emerge. Deconstructing how research methodologies are informed by Euro-American values and notions about the world and health is key to demystifying western science and research to move toward Indigenous centred quantitative methodologies to drive the tribal health data in our area.

In our pilot training module described in the previous section, we incorporated a case study related to federal health data to demonstrate how western quantitative methodologies construct a broken picture of American Indian/Alaska Native people. We have also recently incorporated an experiential activity that utilizes the Barnga simulation game on cultural clashes (Thiagarajan, S, & Thiagarajan, R, 2011) to generate dialogue about how one's worldview drives one's perceptions and understandings related to data. This game creates conflict due to different understandings of the game rules at the individual and group level that is intentionally built into the game. Furthermore, participants are silenced after a few practice rounds and are not allowed to ask questions. These game characteristics contribute to a dynamic where some individuals become empowered and others become disempowered, even though words are not exchanged among participants once silence is imposed. Participants still communicate with their body language and use of symbols while the game is in play. The lessons emerge during the debriefing period after participants are no longer silenced where they reflect on their experience playing the game and apply lessons learned to their future work with data. These activities are important for both Indigenous and non-Indigenous people alike to understand how the spoken and unspoken 'rules' that drive western research methodologies are not neutral or objective and are made up by a non-Indigenous relational positionality to be better able to confront and call out harmful quantitative data practices.

Recommendation 3: advocate for Indigenous research methodologies and Indigenous data sovereignty

Speaking for the legitimacy of Indigenous research methodologies and Indigenous Data Sovereignty is a critical strategy in influencing how western data systems interact with Indigenous data. Tribal control over data about them is the aim and AASTEC operates to advance this aim through its service as an intermediary with governmental entities, universities, and other non-tribal serving organizations that produce data about American Indians/Alaska Natives. This intermediary role is a means to facilitate the production of higher quality and more credible data to be used by tribes. After the

April 2017 think tank we have received numerous requests to present on Indigenous Data Sovereignty directly to tribes and tribal leaders as well as to non-Indigenous audiences that produce data about the tribes in our area. We have also been fortunate to host thought leaders involved in the global Indigenous Data Sovereignty movement from Australia, Aotearoa/New Zealand and the United States. These visits allow AASTEC to continue to learn from and exchange ideas on how to be better stewards of Indigenous data while at the same time making the case to non-tribal serving organizations for change in Indigenous data practices.

Continuing indigenous data sovereignty and methodological engagement

Linking AASTEC into the global Indigenous Data Sovereignty movement is a positive response to dealing with challenging data issues and advocating for more tribal involvement in the data held about them by governmental entities. This engagement has led to a critical examination of how we as an Indigenous organization support tribal efforts. It has also allowed us to be conscious of not doing unintentional data harm. The aforementioned think tank led to a better understanding of the role and benefits of AASTEC being an active data sovereignty partner and how to move forward by hearing directly from our tribal partners. It has also opened the door to possibility and creativity in advocating for meaningful tribal health data driven by tribal sovereignty and interests. This engagement also validates the need for further development of Indigenous quantitative methodologies as per Walter and Andersen (2013).

AASTEC quantitative data-related training already supports health numeracy and data literacy by teaching skills related to quantitative data collection, analysis, and reporting (Peters, Hibbard, Slovic, & Dieckmann, 2007). But it is also imperative to think about what this means to tribes. As an organization we are also working to articulate a theoretical base to drive our work and incorporate this base into our practices and training. We have tasked ourselves with asking what more do we need to consider. For example, Brayboy's (2005) Tribal Critical Race Theory asserts that colonization is endemic to society and that Indigenous ways of knowing are critical for tribal sovereignty and self-determination. Also useful is Tygel and Kirsch's (2015) work on *critical data literacy* informed by the work of Paolo Freire which examines skills needed to allow an individual 'to use and produce data in a critical way'. New theoretical frames are also being developed. For example, author Suina proposes *Critical Indigenous Data Literacy* as a way of thinking about Indigenous data skills (i.e., collection, analysis, reporting, etc.) from an Indigenous LifeWorld perspective. The key emphasis is to assess that the data are reliable, valid, and useful. What these descriptors mean is determined by tribal nations drawing from their own knowledge systems that support tribal sovereignty and recognizes that colonialism is embedded in standard epidemiological practice and data production. More work is needed to advance this way of approaching epidemiology training as a tribal epidemiology centre. We expect to learn more while working in partnership with the tribes in our area to inform how best to meet their data needs and how to transform colonial systems that permeate public health.

Conclusion

Indigenous quantitative methodologies provide an alternative epistemological, ontological and axiological approach to the creation and analysis/interpretation of Indigenous data. This approach takes Indigenous worldviews, perspectives values and dual intersubjectivites of the Indigenous Lifeworld as its central axis. In doing so, it disrupts the taken for grantedness of pejorative deficit-based Indigenous data commonly seen across the colonizing nation states, exposing their realities as socio-cultural artifacts developed from non-Indigenous perspectives. The Indigenous Data Sovereignty movement advocates for the Indigenous collective rights to data about Indigenous peoples, lifeways, territories and natural resources. The work undertaken by the Albuquerque Area Southwest Tribal Epidemiology Centre in adopting an

Indigenous centred approach to tribal health data, inclusive of Indigenous quantitative methodologies and Indigenous Data Sovereignty demonstrate how these central concepts can change the way, for the better, that Indigenous data are done.

Disclosure statement

No potential conflict of interest was reported by the authors.

Funding

There are no applicable Funding Agency acknowledgements related to this article or disclosure statement.

Notes on contributors

Maggie Walter (PhD) is *palawa*, descending from the pairrebenne Aboriginal people of North Eastern Tasmania. She holds the dual roles of Professor of Sociology and Pro Vice-Chancellor, Aboriginal Research and Leadership at the University of Tasmania. Maggie teaches and publishes in the fields of race relations, inequality and research methods and methodologies. Her books include the bestselling edited Social *Research Methods* (2006, 2009, 2013 OUP); *Indigenous Statistics: A Quantitative Methodology* (2013, co-authored with C. Andersen, Routledge) and most recently *Indigenous Children Growing up Strong* (2017 co-edited with K.L. Martin and G. Bodkin-Andrews, Palgrave McMillan).

Michele Suina, PhD is from the Pueblo of Cochiti tribe located in New Mexico, USA and is the Program Director for the Good Health and Wellness in Indian Country Program at the Albuquerque Area Southwest Tribal Epidemiology Centre. She has nearly 20 years of experience as a health educator and chose this career to contribute to the vitality of Indigenous peoples and to influence western approaches to public health for Native Americans so they can realize their own self-defined health aspirations. In 2015, Michele graduated from Arizona State University School of Social Transformation with the Pueblo PhD Justice Studies cohort.

References

Brayboy, B. M. J. (2005). Toward a tribal critical race theory in education. *The Urban Review*, *37*(5), 425–446.

Davis, M. (2016). Data and the United Nations declarations on the rights of indigenous peoples. In T. Kukutai & J. Taylor (eds), *Indigenous data sovereignty: Towards an agenda* (pp. 25–38). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.

Dyck, N. (1985). *Indigenous peoples and the nation-state: 'Fourth world' politics in Canada, Australia, and Norway*. St. Johns, NL: Institute of Social and Economic Research.

FNIGC. (2016). Pathways to first nations data and information sovereignty. In T. Kukutai & J. Taylor (eds), *Indigenous data sovereignty: Towards an agenda* (pp. 139–156). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.

Harrington, A. (2006). Lifeworld. *Theory, Culture & Society*, *23*(2–3), 341–343.

Hoss, A. (2015). Tribal epidemiology centers designated as public health authorities under the health insurance portability and accountability act. Retrieved from https://www.cdc.gov/phlp/docs/tec-issuebrief.pdf

Husserl, E. (1954 (1970)). *The crisis of European sciences and transcendental phenomenology*. Evanston: Northwestern University Press.

Indigenous Data Sovereignty Summit Communique (June 2018) developed by Maiam nayri Wingara Indigenous Data Sovereignty Collective and Australian Indigenous Governance Institute.

Kukutai, T., & Taylor, J. (2016). Data sovereignty for indigenous peoples: Current practice and future needs. In T. Kukutai & J. Taylor (eds), *Indigenous data sovereignty: Towards an agenda* (pp. 1–24). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.

Lovett, R. (2016). Aboriginal and torres strait islander community wellbeing: Identified needs for statistical capacity. In T. Kukutai & J. Taylor (eds), *Indigenous data sovereignty: Towards an agenda* (pp. 213–232). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.

Peters, E., Hibbard, J., Slovic, P., & Dieckmann, N. (2007). Numeracy skill and the communication, comprehension, and use of risk-benefit information. *Health Affairs*, *26*(3), 741–748.

Porsanger, J. (2004). An essay about Indigenous methodology. *Nordlit*, *8*, 105. Retrieved from http://munin.uit.no/bitstream/handle/10037/906/article.pdf.?sequence=1

Poudrier, J. (2003). "Racial" categories and health risks: Epidemiological surveillance among Canadian first nations. In D. Lyon (Ed) Surveillance as Social Sorting: Privacy, Risk and Digital Discrimination. (pp. 125–148). London. Routledge.
Quine, W. V. O. (1948/1980). *On What There Is', Review of Metaphysics 2, reprinted in Logical Point of View* (2nd ed., pp. 21–38). Harvard: Harvard University Press.
Rainie, S., Rodriguez-Lonebear, D., & Martinez, A. (2017). *Policy Brief: Data Governance for Native Nation Rebuilding. (Version 2)*. Tucson: Native Nations Institute.
Snipp, M. (2016). What does data sovereignty imply: What does it look like? In T. Kukutai & J. Taylor (eds), *Indigenous Data Sovereignty: Towards an Agenda* (pp. 39–56). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.
Stanford Encyclopedia of Philosophy(2013) Phenomenology https://plato.stanford.edu/entries/phenomenology/
Suina, M. (2016). Reflections of a Pueblo Indian health educator: Weaving Pueblo worldview into health education. *Journal of American Indian Education*, *55*(3), 72–90.
Taylor, J., & Kukutai, T. 2015. 'Indigenous data sovereignty and indicators: Reflections from Australia and Aotearoa New Zealand', Paper presented at the UNPFII Expert Group Meeting on The Way Forward: Indigenous Peoples and the 2030 Agenda for Sustainable Development, United Nations HQ, New York, October.
Te Mana Raraunga Maori Data Sovereignty Network (2018) About Us te-mana-raraunga-m-ori-data-sovereignty-network/
Thiagarajan, S., & Thiagarajan, R. (2011). *Barnga 25th anniversary edition: A simulation game on cultural clashes*. Boston: Nicholas Brealey Publishing.
Tuhawai Smith, L. (1999). *Decolonzing Methodologies*. London: Zed Books.
Tygel, A, & Kirsch, R. (2015). Contributions of paulo freire for a critical data literacy. *12*(3), 108–121.
US Indigenous Data Sovereignty Network. (2018). About Us usindigenousdata.arizona.edu
Walker, J., Lovett, R., Kukutai, T., Jones, C., & Henry, D. (2017). Routinely collected Indigenous health data: Governance, ownership and the path to healing. *The Lancet*, 390.10107. P2022-202, November 14, 201. DOI: 10.1016/S0140-6736(17)32755-1
Walter, M. (2005). Using the Power of the Data in Indigenous Research. *Australian Aboriginal Studies*, *2*, 27–33.
Walter, M. (2010). The Politics of the Data: How the Australian Statistical Indigene is Constructed. *International Journal of Critical Indigenous Studies*, *3*(2), 45–56.
Walter, M. (2016). Data Politics and Indigenous representation in Australian statistics. In T. Kukutai & J. Taylor (eds), *Indigenous Data Sovereignty: Towards an Agenda* (pp. 79–98). Canberra: CAEPR Research Monograph, 2016/34. ANU Press.
Walter, M. (2018). The Voice of Indigenous Data: Beyond the Markers of Disadvantage. *First Things First, Griffith Review*, *60*: 256–263Davis
Walter, M., & Andersen, C. (2013). *Indigenous Statistics: A Quantitative Methodology*. New York, NY: Routledge.
Zuberi, T., & Bonilla-Silva, E. (2008). Towards a definition of White Logic and White Methods. In W. Logical & W. Methods (eds), *Racism and methodology* (pp. 3–30). Lanham: Rowman and Littlefield Publishers.