Indigenous Knowledge – Indigenous Science

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1. Introduction

The world is facing enormous challenges due to global crises such as the current climate crisis, emerging pandemics, and new and ongoing threats from war. The growing global inequality is caused through the prosperity model developed and cultivated by the societies of the Global North (described in Brand/Wissen 2017 as hegemonic model), which is based on a globalized capitalist production model that is now causing irreversible damage all over the world.

These developments often lead to helplessness, fear, and outrage – not only in the Global South. This is also reinforced by developments in the Global North where citizens strive to escape from the demands of an increasing social acceleration by applying the critical counter strategy of making oneself 'unavailable' (Rosa 2020). However, in Western positivist science, which still often sees itself as universally valid, no long-term effective answers to such challenges have been generated so far.

Finding more socio-ecologically just and sustainable answers requires dismantling hegemonic scientific thinking and creating new ground in our knowledge about the world. The current challenges must be understood as an opportunity and an explicit request to deal with unknown and new perspectives that reach beyond Western thinking. Such broader critical perspectives can also be found, for example, in Indigenous forms of knowledge. A discourse on the relation to Indigenous thought has, therefore, been developed within the approaches of international social work over the last years (Straub 2020).

However, the hegemonic claim for universality from the dominant science models of the North has, so far, prevented a further and deeper examination of the 'epistemologies of the South' (De Souza Santos 2018). Such approaches are often still devalued as 'unscientific' or are challenged by rational examination along the standards of Western scientific thinking. On this background, also social work scientists argue that Indigenous knowledge needs to be decontextualized for scientific debate and examined and evaluated along the criteria and methods of Western science (Röh 2020).

With such a commitment, and not reflecting its own colonial trajectory, modern Western scholarship is in danger of contributing to the maintenance of global inequalities. On this background, models of epistemic justice demand a critical reflection of a Western perspective that often prevents the understanding of Indigenous knowledge, especially since the modern Western worldview differs fundamentally from Indigenous worldviews (e.g. Cajete 2000; Kovach 2021).

Although a diversity of scientific thought also exists in the West, positivist and imperial perspectives and the efforts to maintain its monopoly on epistemic power are still dominant in Western science. These limitations can only be dismantled through a fundamental change towards an epistemic awareness of diversity, in which universality is replaced by pluriversality.

Global decolonization of thinking and acting (Walia 2013) becomes a central task and challenge for Western science, which requires the recognition of Indigenous epistemologies as legitimate and unique scientific paradigms. This only becomes possible with a shared understanding that science production (knowledge) arose in culturally different places and at different times and can only be understood in relation to these contexts.

An essential aspect of this decolonization process of thinking must, therefore, be to create a dialogue with Indigenous thinkers and scientists, to hear them and to learn from them. This book chapter is aimed at such an exchange.

2. What is Native Science or Indigenous Science?

Native science is used as a metaphor for Native or Indigenous knowledge[1] and its creative participation with the natural world in both theory and practice.[2] It is a product of a different creative journey and a different history than the one of Western science. Native science is not quantum physics or environmental science, but it has come to similar understandings about the workings of the natural laws through experience and participation with the natural world. In

1 In this essay, the terms Native and Indigenous are used interchangeably to refer to tribal and cultural groups who continue to live close to the environment on ancestral aboriginal homelands.

2 The following passages highlight and acknowledge the Native contribution to an evolving and inclusive world philosophy of science as well as to ecological awareness. This is not an essay about Native religion; in fact, religion will be discussed only as a reflection of environmental philosophy. The essence of Native spirituality is not religion in the Western sense of the word but rather a set of core beliefs in the sanctity of personal and community relationships to the natural world, which are creatively acted upon and expressed at both the personal and communal levels.

researching Native science, the groundwork for a fruitful dialogue and exchange of knowledge has the potential for being created. But it must be a dialogue in which Native cultures have the opportunity to gain as much as they share about their understanding of natural laws.

Native science reflects the unfolding story of a creative universe in which human beings are active and creative participants. When viewed from this perspective, science is evolutionary – its expression unfolds through the general scheme of the creative process of first insight, immersion, creation, and reflection. Native science is a reflection of the metaphoric mind and is embedded in creative participation with nature. It reflects both the intellectual and the sensual capacities of humans. It is tied to spirit and is both ecological and integrative.

Native science[3] is the collective heritage of human experience with the natural world and in its most essential form, a map of natural reality drawn from the experiences of thousands of human generations which have given rise to the diversity of human technologies and even to the advent of modern mechanistic science. In very profound ways, Native science can be said to be 'inclusive' of modern science although many Western scientists rooted in the philosophy of science would go to great lengths in order to deny such an inclusivity.

2.1 How is Native Science Viewed?

There are those who would argue that there is no such thing as 'Native science'. That science is an invention of modern Western society and that so-called 'Indigenous' peoples merely have a body of cultural folklore, living practices and thought which cannot be considered a rational and ordered system of theory and investigation comparable to anything found in Western science. Using Western orientations and definitions to measure the credence of non-Western peoples' ways of knowing and being in the world has been historically applied to deny their lived reality. The fact remains that Indigenous people are, they exist and do not need an external authority to validate their long existence in

3 The term 'Native science' encompasses such areas as astronomy, farming, plant domestication, plant medicine, animal husbandry, hunting, fishing, metallurgy, geology, and an array of other studies related to plants, animals and natural phenomena. Native science also includes spirituality, community, creativity, and appropriate technologies which sustain environments and support essential aspects of human life. In addition, Native science may also include exploration of basic questions such as the nature of language, thought and perception; the movement of time-space; the nature of human knowing and feeling; the nature of proper human relationship to the cosmos; and other such questions related to natural reality.

the world. Attempts to define Native science fall short since it is characteristically a high context-inclusive system of knowledge.

Native science may be viewed as little more than primitive animism, sentimentalism, and an object to be studied rather than as a 'real' science by practitioners of Western science. Regardless of these biases, the perspective of Native science has great potential for developing insight and guidance for the creation of the kind of environmental ethics and deep understanding which must be gained in the critical times ahead.

Native science engenders in its very process and content the revitalization of our human 'biophilic' sensibilities that are instinctual predispositions to seek and to be nourished by natural relationships. As a system of thought and process of application it can provide an expansive paradigm for broader scientific understanding.

For Indigenous people themselves, the revitalization of Indigenous knowledge through a truly self-determined education provides the most direct route for Native sovereignty. Nowhere is the path for this the most direct than in the connection that Indigenous people feel for their homelands.

The research of Native science is only in its initial stages as an area of serious study. This is the beginning of a new and creative evolution of science. Yet, it must be a dialogue and not the replay of the past.[4] The ideas and processes of Native science are equally important as conceptual well-springs for helping to bring about the integration of science and spirit which is essential to the marriage of 'truth' as the ideal goal of science with 'meaning' as the ideal goal of spiritual practice.

2.2 Why is Native Science important?

In Native languages, there is no word for science as well as there is no word for art or for philosophy, psychology, or any of the other linguistic labels for foundational ways of coming to know and understand the nature of life and our relationships therein.

Not having, or more accurately not needing, a word for science or art or psychology did not diminish either its practice or importance in Native life. For Native people, seeking life was the encompassing task of their life and every member of the tribe, in their own time and through their own unique capacity, was a scientist, an artist, a storyteller and a participant in the great

4 In the past, Native peoples have been exploited for their resources and ideas receiving very little in return. Native peoples should be given credit for their intellectual achievements and benefit from the tremendous research which has been accumulated with regard to Native science.

web of life around them. While there were tribal 'specialists' with knowledge, technologies and ritual understanding for specific cultural practices and societal needs, the creative spirit and focus on essential life-sustaining relationships guided the processes of Native science.

Native science is born of a lived and storied participation with a natural landscape and reality. To gain a sense for the essence of it, one must also participate with the natural world. To understand its foundations, one must become open to the roles of sensation, perception, imagination, emotion, symbols, and spirit as well as concepts, logic and rational empiricism. Much of the essence of Native science is beyond words and literal description. Indeed, misapplied words many times destroy the real and holistic experience of Nature as a direct participatory act around which Native science has evolved. In the literal terms of biology, Native science may be seen as an exemplification of 'biophilia' (Wilson 1984) or the innate instinct that we and other living things have for affiliation with other life and with the animate world.

In the conceptual framework of philosophy, Native science may be said to be based upon perceptual phenomenology. There can be numerous other definitions, but in its core experience, Native science is based on natural perceptive-wisdom and knowledge gained from using the whole body of our senses and on direct participation with the natural world.

In today's world, the appreciation and understanding of the nature of Native science is essential to the re-creation of a 'participatory' science of life that is so desperately needed to balance the imbalance of science and technology and its continuing social and economic crisis consequences. For Native peoples themselves, the revitalization of Native science is an essential component of cultural revitalization and preservation. It is the participation with the communal tribal landscape, which evolved from direct relationship to 'a place or places' in their historic past and present that defines them as a People.

Today, modern societies are wholly estranged from the natural world. Yet, cut off from direct experience of and participation with the natural world, modern peoples collectively suffer a kind of sensory and emotional starvation which at times reaches epidemic proportion and leads to the many and various forms of 'acting out mind' at the individual and collective level.

According to Skolimowski (1994), the modern mind has lost its sensate bearings, its orientations to its roots and to the natural world of process of which it is a part. To address this perceptual blindness, a 'new science' must be developed that includes at its very core the reintroduction of the participatory mind. It must once again become a mind that cyclically renews its orientation to the primal world of life and living process. It must be a mind which re-calls and re-establishes the basis of human awareness in the larger ecology of the world (ibid.). The intelligence which guides, and which focuses and expresses our unique nature must be understood to be present in all things in nature. Therefore, a plant, an animal, a mountain, or a place may be metaphor-

ically said to have 'intelligence', its own mind and psyche which is unique and with which our human intelligence continually interacts. It is the 'ecologically aware and participatory mind' that modern science must encompass, for it is that mind and that way of thinking, understanding and participating with the natural world that holds the best and most life-sustaining solutions to the current disconnection of science from the ground of its own being.

Wilson (1984) advocates that everything that we consider human is reducible to our essential biological nature, which in turn is predicated upon the laws of physical Nature. Wilber (1981) believes that there can be no return to premodern modes of life in the evolutionary flow of human consciousness, although prior forms of consciousness continue to exist in human societies today. Yet both agree that some kind of integration of science and spiritual practice must begin if human knowledge is to advance to its next level of development. Hence, a new balance must be created for a new evolutionary phase to occur.

Native science offers both challenges and opportunities for Western science since its insights, forms of knowledge, and process mirror the insights of evolving areas of Western science, such as in quantum mechanics, chaos theory, string theory and others.

The development, simultaneous exploration and comparison between Native science and Western science can provide the foundation for more flexibility and a more creative orientation to thinking and its application in science that is essential to the future of human societies for meeting current challenges in society on a global level. Native scientists, though few, can become leading advocates for such a re-thinking and transformation of Western science.

3. Colonial Legacy and the Ubuntu Indigenous African Knowledge System

The following sections take a closer look at another Indigenous system, the one of Ubuntu that will be regarded from a South African perspective. The history of South Africa and the African continent has been dominated by apartheid and colonialism. Colonialism has far-reaching implications in countries of the South. It provides the context for the organized suppression of the 'cultural', 'scientific', and 'economic' situation of many people on the African continent (Ramose 2002: 120). The end of colonization and apartheid in 1994 did not mean the end of coloniality or colonial legacy. This sentiment is taken up by African scholars such as Nkrumah (1965) about neo-colonialism and Fanon (1967) concerning the Africanization of colonialism. Quijano (2007) pointed out that these complex challenges regarding cultural superiority and the dominance of the Western forms of universal knowledge result from a co-

lonial matrix of power, known as the legacy of colonialism. Mignolo (2011) argues that coloniality is the darker side of modernity: imperialism and the displacement of the pre-existing African knowledge systems (epistemicide). Ndlovu-Gatsheni (2013) claims that coloniality consists of three interrelated concepts, which include coloniality of knowledge, power, and being. In light of the colonial legacy, many African peoples are confronted with the challenge of developing their unique African philosophy and Indigenous knowledge system.

The social work profession in South Africa has not escaped the colonial matrixes of power and continues to be criticized for struggling to retain its relevance. The literature suggests that Ubuntu's ideal is often explained with the Zulu proverb umuntu ngumuntu nga bantu: (in Setswana moth ke motho ka batho ba bangwe) and translated into English loosely as 'a person depends on other persons to be a person' (Ditlhake 2020). In Western aphorism, and meeting the tradition of Descartes, an individual is expected to say, 'I think, therefore I am'. Ubuntu emphasizes the communitarian and the interdependence of all human beings.

Decolonization and decoloniality in social work in South Africa seek to disrupt the colonial matrix of power that is based on Western professional imperialism and its legacy of apartheid and colonialism. Examining decolonization from a social work lens is to deliberate where we are today because of colonialism or decoloniality. Altogether, five interlocking insights might be gained from the discussion on Ubuntu in social work with children, families, and communities in South Africa.

Firstly, Ubuntu captures the dimensions of professional imperialism and the displacement of the pre-existing African knowledge systems (epistemicide) and decolonial perspective. Ubuntu, as African philosophy, embodies a potential for a transformative agenda to embed social work education and practice firmly within the socially and culturally defined experiences and the needs of the communities and the society it serves. South Africa has eleven official languages and is known as a rainbow nation. Therefore, Ubuntu can provide a useful philosophical framework for transforming social work education and practice to acknowledge multicultural diversity, languages, and lived experiences and to decolonize the hegemony of Western forms of universal knowledge.

Secondly, social work is a value-based profession; respect for diversity and multicultural backgrounds underpin the profession. Ubuntu resonates strongly with social work values and embodies the means for promoting social justice in working with individuals, families, and communities.

Thirdly, in South Africa, a traditional and Indigenous system of placement of children with grandparents or extended families, also known as informal kinship, foster care, is recognized on the condition that the needs and rights of the child are safeguarded, as stated in the Children's Act 38 of 2005. The recog-

nition of the right to family life is also affirmed by the "Bill of Rights section 28 (1) (b)" of the Constitution of the Republic of South Africa, 1996. Ubuntu recognizes individuals' human dignity and worth regardless of their social and societal position within the context of a communitarian collective. It also speaks to mutual respect, humaneness, and solidarity.

Fourthly, the lived experiences of families that resonate with Ubuntu as a form of family interdependence and humankind practice by many nuclear and extended families across various racial groups are known as the 'black tax'. It is an economical form of support and entails offering in-kind financial support to the family. The moral obligation is generally by the firstborn child or any other successful member of the family to provide financial support to the rest of the family. In some families, this includes an obligation to provide financial support and authentically care for their parents and continues despite one having his or her own family. Black tax is another form of communal value of reciprocity, generosity, solidarity, and compassion.

Lastly, in 2021 Ubuntu was selected as a theme for the World Social-Work-Day to acknowledge Indigenous African social workers. During the COVID-19 pandemic, the Ubuntu spirit of solidarity and connectedness was demonstrated, especially under lockdown. As the impact of COVID-19 began to be felt on the economy and unemployment, food insecurity became the rallying support for needy communities by the private sector, philanthropies, non-governmental sector (NGOs), community-based organizations, faith-based organizations, neighborhood groups, and individuals across the world providing food parcels and shelter for the victims of gender-based violence, among others. In South Africa, the government established a solidarity fund in which contributions across the broad spectrum of society responded in a spirit of Ubuntu or mutual support. The world's global pandemic in the South and the North countries has shown the centrality of the collective approach as opposed to the individualistic approach.

4. Why Should Social Work in Germany Reflect on Indigenous Knowledge and the Postcolonial Situation?

The challenge of Indigenous knowledge presented here as Native science and the Ubuntu knowledge system means that:

- alternative paradigms exist in the sense that the idea of science expressed by Native science or Indigenous knowledge might differ from Western or Northern hegemonic concepts of science.

- normative implications of social work, like autonomy, might be rejected or accentuated differently.
- power structures resulting from colonialism shape knowledge systems and construct ideas of universal knowledge and 'different' knowledge as culturally based, holistic etc. and that are excluded or denigrated.

Knowledge is understood here as a systematic ensemble of practices, rules and theories that explain the 'world' around us. Although science is often presented as producing objective results, every knowledge system is influenced by culture, position, political discourses, academic traditions, and local conditions (Wimmer 2003). This insight is not always applied to knowledge produced in societies of the Global South – their knowledge is regarded as Indigenous, non-scientific, traditional etc.

Altogether, one can argue that every knowledge is Indigenous in the sense that it is influenced by culture, local political traditions etc. And if one asks why German Indigenous social work knowledge production should reflect (other) Indigenous knowledge, then the answer is simply: this is a matter of recognition and epistemic justice.

Concepts like Ubuntu or Native Science are often presented in ways that depict them as the knowledge of 'others' and their 'rich cultural traditions' and thus they are not presented as general and excluded from possible claims to universality (Appiah 1992). The challenge of the IFSW amendment concerning Indigenous knowledge demands that knowledge production everywhere and by everybody should be included in the science of social work and there are many sources of social work knowledge – colonialism destroyed some of them.

We need a new critical dialogue on globally different and diverse ideas about knowledge. Theories and methods of social work often presuppose concepts of the individual, of the community, of a welfare system, of the world around us etc. that do not exist everywhere as well as normative claims that are not the same everywhere.

The postcolonial author Gayatri Chakravorty Spivak (1999) coined the concept of 'epistemic violence'. She analyses structural links between modern European thought and colonialism that lead to the epistemic dominance of hegemonic Western thought. According to postcolonial authors, colonialism still holds power over the minds. One of its effects is the marginalization or destruction of other ways of thinking, speaking, and bonding and, as a consequence, many forms of knowledge are constructed as traditional, less developed, inferior etc.

According to Spivak, academia in Western societies should deconstruct violent consequences of given forms of universalism. Deconstruction, self-reflection or rather self-examination should be put on the agenda. For social work science, it is necessary to identify epistemic hegemony, look at patterns of exclusion, othering and silencing of subjects and their voices and thus search

for inbuilt barriers in Western thought concerning what is recognized as knowledge, as emancipatory etc. and what not, and why.

But Spivak does not give up universal claims neither concerning normative values nor the universal validity of knowledge. The challenge is to strive for new ways of exchange on global diverse knowledge(s). Some controversies on this issue concern methods of knowledge production (oral, written), the relation between spirit, body and cosmos, or concepts like interrelatedness versus individual autonomy.

This quest for a new egalitarian approach implies the need for a new concept of power-sensitive universality. Universal claims must be upheld without reproducing violent or excluding structures. A new concept of universality would be rather contextual, interactive and multiversal (An Naim 2014). Social work research in Germany has to act humbly and should include approaches and knowledge from different regions of the world on an equal basis to be able to bring it in relation to the German and Western traditions of social work knowledge.

5. Conclusions

The discussions in this chapter show the high complexity and diversity of the concepts around the understandings of knowledge development and science. The innovation of the presented positions lies especially in the fact that there can be no universal view and, therefore, there can be no overarching and closed corpus of knowledge. This would always mean the attempt to hegemonically design the own and local on which the thesis of universal knowledge rests. To the contrary, in-built participation, creativity and radical environmental awareness around the value of community-owned land and resources is needed to protect the world from further destruction and to deconstruct the colonial matrix of power and reproduction of its hegemonic thinking.

The ‘confrontation’ of different types of ‘knowledge’ discussed here supports the thesis and need of a pluriversal knowledge and emphasizes its local, cultural, and contextual relatedness, as the considerations on Native Science and Ubuntu as ‘Indigenous Knowledge Systems’ show. Above all, however, it becomes clear how productive dialogue and exchange can lead to horizontal, collective, and communal ways of understanding. Precisely this helps in recognizing why particularly in social work in Germany (and beyond) this urgently should be reflected upon. By doing so, this type of knowledge would not fundamentally be called into question but rather could be supplemented.

Within the considerations presented here, it becomes clear that it is not a matter of criticizing science as a model itself, or establishing a ‘new science’ or positioning oneself beyond or against science. This is not the aim of this

book chapter. Instead, the goal of the dialogue depicted here is far more modest. It is about – and we already understand this as innovative – a necessary relativization of universalistic claims of science and knowledge production that aims to detach itself from its reference to place and history, and hence to speak on behalf of other places and communities rather than with them. This can certainly be justified in some respects. Nevertheless, it is the intention of this essay to point to the urgent need for relativization and, at the same time, to a necessary replacement of universalism by pluriversalism. As this replacement is also a question of social, economic, political, and environmental justice, we herewith advocate for an increased reference to place and context and the visibility of their histories of Native and Indigenous science within the social work profession, and beyond.

This does not at all mean establishing this 'other thinking' as an emancipatory counter-model. It is about recognizing it as equal and – looking at the multiple crises we are facing – in high relevance to be fully acknowledged in order to become able to unfold its full potential for global and local transformation. This is a great challenge and an opportunity at the same time: out of the complexity and contradictoriness that lies therein, new and critical questions arise that could take our thinking further.

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