

***Towards co-creation of sciences: Building on the plurality of worldviews, values and methods in different knowledge communities*** by Bertus Haverkort, Freddy Delgado Burgoa, Darshan Shankar & David Millar (Eds) (2012). New Delhi: Nimby Books. 291 pages. ISBN: 978-81-906570-4-4

In a world experiencing the consequences of globalization and a uni-dimensional approach to progress and science, it is easy to make the argument for the importance of other ways of conceiving of a better world and a better life. A growing field of literature has emerged to confront the consequences of Eurocentric dominance in knowledge production and the social imaginary of what being “modern” means. Much of this literature acknowledges the importance of understanding and privileging other, often indigenous/local ways of being in and knowing the world. Yet, this literature can be and has been accused of being long on critical analysis and short on practical examples that work through the complexities of bringing different epistemologies into productive dialogue. While critical literature plays a crucial role in opening spaces for new ways of engaging in academic and pedagogic practices, the Haverkort et. al. (2012) collection being reviewed here is to be applauded for providing a well structured text walking through four approaches for conceiving of sciences in the world.

Decolonizing the academy has emerged as an important area of effort in recent times. Indigenous knowledges, often disparaged or mythologized in Eurocentric colonial knowledge-power representations, are seen from this perspective as a crucial starting point for decolonization processes. The presence of knowledge systems that dispute the omnipotent power of Eurocentric science, for instance, by contesting the ways in which this science defines causality (through such insertions as human relations, spiritual dimensions, and the interrelationality of all living things) opens space for a complex view of the world that may include many sciences. Yet the process of moving to a plural view of science, especially in tertiary institutions framed and founded in European Enlightenment vestments, is a complex endeavor. There is a need, therefore, for examples to be shared where this process has been attempted.

For Haverkort et. al (2012), the place to begin this process is through the concept of endogenous development. Here, endogenous development means a process of active assessment whereby local populations can ground themselves within their own knowledge traditions, keep what is working and generative, while at the same time being open to ideas from outside that may improve ways of life, based on criteria people themselves develop. Yet, the process of assessment implies an educational process that reduces pejorative understanding of knowledge systems, and instead trains students to be able to look at various knowledge systems from their own perspectives. Key to this is also embedding students in the knowledge system from which they come. Navigating this process in practice is highly complex, and therefore having examples that communicate how this has been done in different contexts is of great importance. This is the strength of the Haverkort collection.

The introduction situates the above concept of endogenous development in the international policy context of indigenous peoples rights. It further expands on the origins of COMPAS and CAPTURED, the two knowledge networks informing this collection. The concept of co-creation of scientific understanding is introduced wherein a plurality of sciences is acknowledged. Importantly, the chapter concludes by exploring a number of modalities of knowledge interaction, some of which involve rejection, suppression, substitution or selective inclusion by dominant knowledge systems, whereas others involve complementarity and co-creation of a plurality of sciences. The importance of power and the politics of knowledge in this process is acknowledged here but arguably could have been given more attention, a point taken up in the conclusion of this review. This exploration also establishes a framework for the collection, where each chapter focuses on the worldview (ontology), values (axiology), ways of learning (gnoseology), organization of existing knowledge (epistemology), and the knowledge community of their respective knowledge system, “leading to their own sciences” (p. 39). The chapters also document the process by which these sciences have been incorporated into tertiary institutions.

The chapters that follow each explore one of the sciences that have emerged in the CAPTURED network. The first of these, written by Darshan Shankar and M.N.B. Nair, is in India, which examines Ayurveda science. Noting the 3500 years of Ayurvedic history, the chapter details its axiological origins – describing it as collectively owned and not to be sold. The chapter further describes the worldview, or ontology, of Ayurveda – in comparison to mainstream allopathic views – and then describes its ways of learning. From an education perspective, this is quite interesting as this knowledge system “involves training the mind to achieve unprejudiced mental states (through yoga)” (p. 54) in order to profoundly connect with nature. This section is quite detailed, moving beyond superficial descriptions and delving into the elements involved in training the mind in this way. The remainder of the chapter documents how Ayurvedic knowledge has been documented in the past, as well as elaborating on the approaches and structure of the Bangalore Foundation for the Revitalization of Local Health Traditions PhD program, aiming to build bridges between the mainstream science and endogenous knowledge systems. It concludes by exploring the challenges of building these bridges.

The next chapter, by David Millar, focuses on the Gruni and Dagara knowledge systems of Northern Ghana. From the perspective of worldview and values, the focus of this system is on the link between those who have gone before – becoming ancestors if they have lived well – the living, and the as-yet unborn. The way of learning then is on the examples set, and knowledge shared by ancestors. At the same time, Millar shares how deeply intertwined education is with everyday activities, building a foundation of experiential learning where reflection accompanies action, as guided by the older members of the community. The chapter also documents organized learning that falls into pro-active, inter-active and reactive categories. Foundational to these approaches to learning is a knowledge organization system that does not distinguish between material and spiritual worlds – valuing knowledge that emerges from both of these spaces. The chapter also includes notes on the way in which the University of Development Studies, in Northern Ghana, has incorporated these systems into undergraduate and graduate

programs in endogenous development. The chapter concludes by critically noting the history of the subjugation of knowledge that accompanies any attempts to share various perspectives.

The following case study by Anton Haverkort focuses on the dominant Eurocentric approach to agricultural sciences and is a specific examination of potato research in the Netherlands. Though much of this chapter is dedicated to recounting the well-known history of scientific thought in Europe, there is discussion at the end of the chapter about inter-science dialogue and the potential impact this can have on European approaches to science.

The next chapter, by Freddy Delgado Burgoa, Cesar Escobar, Stephen Rist, Dennis Ricaldi and Gustavo Guarachi, focuses on Cochabamba, Bolivia. The first part of the chapter is dedicated to outlining the changing paradigms informing AGRUCO, the Center for Agroecology, at the University Mayor San Simon in Cochabamba. This introduction gives a wonderful sense of the evolving nature of the program, and the manner in which it has become a part of the shifting political realities in Bolivia. The second half of the chapter is a detailed description of Andean ways of knowing. The chapter communicates the complex meaning of Pacha or the coming together of both visible and invisible forces. Like the other chapters, ways of learning, and knowledge organization are described as well, with the later being explored in terms of architecture, clothing, health systems, and weather prediction. The chapter concludes with a sobering discussion of the relationship between mainstream science and Andean science, and the possibilities and challenges of an inter-science dialogue, and the implications for building such bridges.

The concluding chapter builds on the four culturally-specific knowledge science cases to elaborate on the co-creation model. This model is grounded in perspectives from each of the four cases, as well as other culturally specific contexts (Canada, US, and New Zealand). The argument is made that if a mutually respectful stance can be taken, inter-science dialogue can provoke mutual learning and a richer approach to understanding the world. The implications and challenges to this process are detailed extensively, revealing the depth of work the authors, and the broader COMPAS and CAPTURED network have already undertaken. This is a major strength of the text as at every turn there are honest asides of the difficulties and necessary attitudes to make this process work. In this sense, the book has important value as a straight-forward example of moving beyond simply calling for bridge building and co-creating to the actual pragmatics of doing so.

The collection, however, does not adequately acknowledge the very real implications of mainstream science's tight relationship with capital, and the distinct possibility that such bridge building could very well become part of another form of cooptation and bio-piracy, wherein knowledge – no matter its cultural origins – is deracinated from its context and commodified for elite profit. In an age where knowledge economies are mentioned on every mainstream news outlet, this potential for the capitalist colonization of knowledge (e.g. selective promotion of knowledge forms that can be commercialized) and not just its subjugation (active resistance to other ways of

knowing), needs to be included as a significant part of this discussion in terms of the politics of co-creating the sciences. While the text does note these issues, this dimension could have received more attention. That said, the book remains a very important addition towards the escalating efforts to destabilize Eurocentric science dominance and generate space for much more complex conversations of what the good life means and how it can be achieved in a plurality of ways.

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