# Beyond South Africa's 'indigenous knowledge – science' wars

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In this paper, the paradoxes and difficulties attending the notion of indigenous knowledge in South Africa are reviewed and an alternative dialogue about intellectual heritage is proposed. Beginning with a survey of debates on 'indigenous knowledge' and sciences in India, Australia and Latin America, the discussion draws attention to differences in regional discussions on the subject of knowledge diversity. Turning to the South African context, the paper foregrounds contradictions in the debate on traditional medicines and the sciences in relation to HIV. The bifurcation of 'indigenous knowledge' and 'science' is argued against. Debates on both indigenous knowledge and science within the critical humanities in South Africa have been characterised by denunciation: an approach which does not facilitate the important discussions needed on intellectual heritage, or on the relationship between sciences and coloniality. In dialogue with current research on the anthropology of knowledge, strategies are proposed to broaden the possibilities for scholarship on knowledge, sciences, and different ways of understanding the world.

## Introduction

Since the formalisation of South Africa's indigenous knowledge policy in 2004, 'indigenous knowledge' has become prominent in national discussions on the content of the sciences and humanities that undergird policy, education, medicine and law in a democracy. Yet the particularity of South Africa's science war – between traditional medicine and science over antiretrovirals for HIV and AIDS – has generated an intellectual climate that has made it very difficult for South African scholars to think outside the framework of established positions, canons and criticisms. A significant impoverishment of debate on the possibilities for postcolonial (or decolonial) scholarship in South Africa is the consequence with which South African academics now need to grapple. Yet such a debate is needed both in the sciences and the humanities if universities are to be able to respond to the continued marginalisation of African intellectual heritages in the region. The question is how to begin.

This review is the report on a 3-year series of workshops and seminars at the University of Cape Town that have sought to explore the debate about indigenous knowledge in South Africa. Engaging with a wide range of scholars, particularly in the global south, the project has explored a range of approaches to the challenge of confronting the entanglements of sciences, capital, regional intellectual heritage and colonial history. The review begins with a broad overview of regional debates on indigenous knowledge systems, in India, Latin America and Australia, followed by an account of the contradictions that attend the South African science war over traditional and natural medicine with respect to antiretrovirals. Thereafter, various approaches that the project has begun to pursue in order to open up the conversation on intellectual heritages in South African scholarship are explored.

## Regional comparison of indigenous knowledge debates

The 'indigenous knowledge movement' has been vocal in making an argument for the recognition of the plurality of knowledge, yet often via an argument that asserts a universal indigenous knowledge in counterpoint to that of 'the West', as if San knowledge in the Kalahari and Cree knowledge in Alberta are much the same. Notwithstanding its globalised language, regional debates on indigenous knowledges differ starkly, and a review of them underscores the ways in which particular national and regional concerns play a role in establishing what is considered 'indigenous'.

In India, for example, the legacy of the partition has generated a situation in which debates on traditional knowledge are deeply affected by religious nationalisms.[1] Notwithstanding India's leading role in mobilising global intellectual property law to prevent biopiracy of traditional medicines, it has also produced several leading scholars on knowledge whose work is critical

of the assumption that indigenous knowledge should be reworked to fit into global discourses on development, data management and science.[2,3,4,5,6,7]

These scholars make a range of arguments that are pertinent to the South African debate. Several argue that the sciences in India have adapted to the framework of capital, when what is needed are sciences that attend to poverty and ecology.[8,9] A prominent theme is the need for postcolonial discussions on philosophy to extend to the sciences whilst simultaneously offering a critique of the ways in which an attempt to engage traditional knowledges risks reinscribing religious fundamentalism. Nevertheless, in the context of India's violent history of religious intolerance, arguments that try to take account of the contextual basis of sciences have come under fire: postmodern science studies, the argument goes, have invited an uncomfortable alliance with Hindu supremacists. While many disagree profoundly with that analysis,[10,11,12,13] it is of interest that the discussion parallels arguments in South Africa and the USA in which attempts to situate science in a social context are seen as playing into the hands of religious fundamentalists or cultural traditionalists.[14] Science, in such a view, has nothing to do with coloniality, governance or capital: it is pure knowledge, and the political costs of the social study of science are too high.

While India has led the way in formalising traditional knowledge patents to strengthen its status as an emerging economy, the ideas that undergird that project are also vigorously debated.[15] Reddy[16] problematises the idea that traditional medicine subsists in pharmacologically active ingredients and that global intellectual property law offers an appropriate framework for the protection of traditional knowledge. She argues that while digital archival projects like India's Traditional Knowledge Digital Library might serve to protect knowledge at the level of patents, they may not secure against the thriving trade of informal biopiracy. These are important criticisms, and deserve careful study in the context of the South African state's very close engagement with the architects of India's traditional knowledge policy.[17]

The critique of the idea that legal concepts of property and personhood match local indigenous equivalents is similarly prominent in Australian debates on traditional knowledge and science.[18] In contrast to the Indian debates which navigate religious nationalisms, the Australian debates reflect the contradictions of indigeneity within the Australian legal framework[19,20] and they evidence careful navigations of the contexts in which notions of culture and difference come to be asserted. Innovative studies of indigenous knowledge and the sciences are evident in the work of Helen Watson Verran, a philosopher and historian of science, who explores generative approaches to 'working different knowledges' in contexts where knowledges are in question – such as in firing regimes of natural landscapes – rather than offering accounts that lean towards ethnological assertions of identity-based knowledge.[21,22,23] Her interest in knowledge practices is echoed also in the work of David Turnbull, who is based in Melbourne and whose research sites span four continents and encompass scientific laboratories in the USA, mapping and navigation sites in Polynesia and Aboriginal Australia, medieval architecture sites and databases of diverse knowledges. Turnbull's corpus of work makes a sustained argument that a focus on the transfer or movement of knowledge is a more productive approach to knowledge studies than the ethnological collection of (apparently) fixed facts and artefacts, because, he argues, it is in the movement of knowledge that proof is offered, innovations effected and agreements reached about the nature of reality.[24,25]

Connell's[26] *Southern theory* similarly engages knowledge debates across the global south. Calling for the social sciences and humanities to engage a philosophical canon that is global, her work draws deeply on African philosopher Paulin Hountondji whose rejection of the terms ethnophilosophy and the indigenous finds confluences with Australian critical thinking on multiculturalism.[27,28,29]

Debates on knowledge in Latin America share the Australian and Indian emphasis on intellectual property, which reflect, in many senses, the efforts of the World Intellectual Property Organization to formally request governments to protect indigenous knowledge. Led by environmental activism in the Amazon, indigenous and traditional knowledge debates in Latin America are dominated by debates on environmental knowledge that have two remarkably different strands.

The first offers a vigorous defence of Amerindian environmental knowledge and lands, but it tends to ignore the ways in which its tools for that defence override Amerindian philosophy. So, for example, geographical information systems are used to collect ecological knowledge even though those exclude the astronomies[30] that are central to Amerindian ecological thought. Another example is in the assumption that intellectual property law is based on equivalent notions of personhood, ethics and ownership.

The second strand offers a vigorous critique of globalised knowledge as the contemporary face of coloniality.[31,32,33] It questions the assumptions that cartography and modernist notions of personhood can convey Amerindian knowledge, and proposes that Amerindian intellectual heritage does not have to be subsumed into modernist thought in order to make sense.[34] Of interest is that this strand of argument finds convergence with the criticisms of modernist thought that appears in the work, cited earlier, of Australians Helen Verran and David Turnbull.

The relatively uncritical use of maps and legal frameworks in sectors of Amazonian activism reflects the urgency of land rights activism in the past two decades, which has sought to establish land rights where those have been eroded, and human rights where local people have been treated as

expendable. Clearly, those struggles have been vital. But the dilemma for Amerindian activists has been that the conceptual infrastructure that has been used to serve indigenous peoples' political goals has been drawn predominantly from modernist concepts of space, time and personhood. In this regard, contemporary Brazilian anthropology has sought to develop an approach that works with Amerindian theory, and which offers a critique of modernist intellectual heritage. Eduardo Viveiros de Castro[35,36] offers a lead in drawing an analytical framework from local ideas themselves. He offers a valuable riposte to the assertions that indigenous knowledge stands as either the antithesis or the mirror of science. Difference requires the kind of translation, Viveiros de Castro suggests, that presents it neither as completely the same nor as the complete opposite of the philosophy that comes to us via the European Enlightenment. The conceptual infrastructure of the translation, in other words, ought to come from the ideas under study.

Latin American scholars whose work pursues similar lines include Peruvian anthropologist Marisol de la Cadena who is exploring the recent inclusion of the rights of nature in the constitutions of the states of Ecuador and Bolivia.[37] Her work considers the implications of different versions of nature in historical archives and in scientific databases.[38] Argentinian anthropologist Mario Blaser argues that multicultural environmental activism needs to let go of the idea of culture, and rethink the idea of nature.[39,40] Both Blaser and de la Cadena draw on the work of Bruno Latour and Isabelle Stengers whose critiques of modernist thought open a way to thinking outside of its dualisms.

Thus far, this brief account of regional debates on indigenous knowledge and the sciences demonstrates a number of points:

- Debates on intellectual heritage in India, Latin America and Australia extend to curricula at universities, within faculties of science as much as within faculties of social science.
- These debates pose important questions about the interrelationships of states, sciences and publics in all three contexts.
- Unease with the assumptions about knowledge and culture that undergird the concept of indigenous knowledge occurs in all three contexts, albeit for different reasons.
- Conversely, in all three contexts, there is strong interest in working with different intellectual heritages.
- Apparent in all three contexts and prominent in two of them is an approach that includes questions about the intellectual heritage of modernity – in the sense in which enlightenment has bequeathed to contemporary universities an ontology of nature versus culture, mind versus body, subject versus object and self versus other.

The politics of drawing traditional thought into universities and governance in Latin America, Australia and South Asia, however, are very different to the conditions closer to home in South Africa. Here the debate about indigenous knowledge and universities has been caught up in a science war that, like its equivalents in Europe, the USA and India, has counterposed 'hard science' with a version of 'science studies' – with catastrophic results. Former president Thabo Mbeki saw traditional medicine as the antithesis of an exploitative Western pharmaceutical industry. The conceptual opposition generated a deadly 'either–or' – either African medicine or Western science – that undergirded the South African state's failure to provide antiretrovirals during his presidency. This failure contributed massively to an AIDS mortality figure of well over 3 million[41] – by the account of UN AIDS, some 310 000 in 2009 alone, which translates to a mortality rate of almost 850 people every day in 2009. That grim figure and its relation to postcolonial knowledge debates sets up an extraordinary responsibility for scholars anywhere who seek to pursue the value of alternative intellectual heritages.

As is the nature of many an issue that is reduced to polemic, the South African debate is characterised by contradictions and unexpected continuities.

Perhaps the most surprising continuity is that bitter opponents have pursued much the same strategy: to expose their opposition's core ideas as invented, constructed and appropriated. Where Mbeki's AIDS denialists cast virus science as a construction of something that did not exist, their opponents in the humanities and sciences have cast 'traditional medicine' and 'indigenous knowledge' as construction of realities that did not exist.

Contradictory alliances have come to define the terrain. AIDS activists' defence of a pure science, apparently untainted by any human interests, has put its supporters in an uncomfortable alliance with 'Big Pharma'. Indigenous knowledge proponents' defence of a pure traditionalism, apparently untainted by any human interests, sets up an uncomfortable alliance with elites who use the idea of 'tradition' to insulate themselves from criticism from 'inside' ('cultural pollution!'), and criticism from 'outside' ('you have no right to speak!').

Paradoxes, too, abound. Where Western science was criticised in policymakers' speeches, their budgets have set up laboratories to prove the science of African herbs to the world. Where critics in humanities faculties fled from 'othering' (framing groups of people as the opposite of the characteristics associated with groups to whom the speaker's 'self' belongs) inherent in the concept of indigenous knowledge, their alternative strategy of 'saming' (seeking to avoid 'othering' by doing the opposite: explaining people's behaviour and choices with a 'just like me' argument) left unquestioned exactly whose 'self' was being universalised and whose was being assimilated.

Such paradoxes stage familiar dramas. On the side of indigenous knowledge, public argument in South Africa all too frequently stages the debate as a matter of achieving cognitive justice between only two players – the West and the rest. Cognitive justice is a movement with profoundly important goals, and it has made important contributions to

scholarship on knowledges in Australia and New Zealand, India, Latin America and South Africa. The argument generally takes one of two forms. The first is an argument for multiple kinds of knowledges, taking the view that multiplicity in itself is important. Of course it is. But where the argument takes as foundational a cultural divide between scientific and indigenous knowledge, it becomes troubled at best:

- It can argue that all knowledge is 'ethnic' or cultural. This argument calls for greater tolerance of 'ethnoknowledge' (without questioning the frames in terms of which ideas of ethnic difference emerge), and makes the case that science is also ethnic. This argument is for cultural relativism: that 'one's truth depends on one's culture or identity or perspective'.
- A related form of the argument is that all knowledge can be shown to contain elements of science, in which case the focus of scholarly effort and activism becomes a struggle to extend the status of science, including testing with the tools of formal science, and lobbying for recognition, government funding, institutional protection, and so on. The research project that this generates is that of identifying 'matching perspectives'. Its major shortcoming is that it offers no grounds for a critique of the sciences that it uses in its trials. Moreover, intellectual heritage that does not match the epistemology of the sciences is ruled out.

Each of the above approaches constitutes a *moral* argument. They call for the equality of knowledges based on the assertion that either all ways of knowing the world, including the sciences, are belief, or all are knowledge. Many indigenous knowledge scholars and activists transpose the frame offered by modernist knowledges: facts are values, knowledges are beliefs, 'nature' is actually 'culture', cultures are like nature, and so on. (It is worth noting that the proponents of the cultural diversity approach often use the analogy of the value of biodiversity, which makes the rather troubling assertion that different cultures are like different species. This is a very similar argument to that which was used by apartheid's ideologues.) Yet transposing the colours on the chess board, to use an analogy, does not change the frame. Arguments that invert the modernist dualisms – facts or values, knowledge or belief, nature or culture – leave the structure of those ideas intact.

It is important to note that there are significant trade-offs in accepting the idea of culture as given, because it is bound up in the origins of European romantic nationalism. Without a critique of culture, the study of different ways of knowing is unable to comment on the complex enmeshing of capital, governance, science, global law, history and nationalism in the production of difference. What it can offer, however, is a circular argument: cultural difference is because of culture. Inevitably, such an argument proposes a stark division between 'Western culture' or 'Western science' and 'African (or other) knowledge'.

An example is in the South African study offered in Boaventura de Sousa Santos' wide-ranging collection of papers on regional knowledge debates titled *Another knowledge is possible*. The author, Thokozani Xaba, whose wider body of work makes an important contribution to knowledge debates in South Africa, argues[42]:

> Africans [in South Africa] find themselves constantly destabilized while the benefits derived from the holistic approach and the egalitarian nature of indigenous medicines are not being realized. Instead, Africans are subjected to modern practices, among which are the invasive techniques of 'scientific medicine'.

Despite its publication amid the South African AIDS crisis in 2008, the article makes no mention of the debate between traditional medicines and antiretrovirals in South Africa. The argument relies on the identification of an authentic African tradition that is separate from Western science. Yet, is it not the case that where the state plays a role in 'proscribing' and 'normalizing' traditional healing (p.344) via bureaucratic regimes of registration, certification, examination, assessment, committees, outcomes and deliverables, that traditional practices are profoundly transformed? [43,44] The writer also calls for greater investment by the state in research on traditional healing, in ways that rethink conventional practices in the sciences. While that research is important and appropriate, there are significant difficulties in setting up 'authentic culture' as the touchstone of the argument. Firstly, it relies on a particular definition of 'culture' to define the debate: a definition that is deeply rooted in the intellectual heritage of the European Enlightenment. In my view, a critique of that set of ideas is profoundly important in rethinking the ways in which African history is written. Secondly, there is little space, in an argument that takes 'authentic culture' as a given, either for the criticism of tradition, or for traditions of criticism.

Like his wider scholarship, Xaba's article[45] raises the important issue of medical pluralism. Yet, like Mbeki's science war and his more recent challenge to scholars to rethink the relationship between knowledge and democracy, the approach underscores the need for a scholarship on knowledge that will rethink the terms of the knowledge debate, and explore whether 'science' and 'indigenous knowledge systems' are indeed the most useful concepts that can be deployed for the purposes of policy and university transformation. The unintended consequences that have attended the South African science war point to a situation where an analysis that leaves these categories unquestioned, forecloses the possibilities for generative dialogue on intellectual heritage. The second half of this article will return to these questions.

The breakdown in dialogue on African intellectual heritage in South African scholarship also has much to do, I suggest, with the inheritance of a style of criticism in the critical humanities that insists its work is done by 'outing' associations and interests. The insistence on the part of the critical left in denouncing ethnonationalism without engaging the politics of knowledge that regional thinkers on indigenous knowledge have highlighted, creates intolerable conditions for scholars like Xaba who swim against the tide of ideas that is the heritage of the post-apartheid critical humanities in South Africa.

In sum, notwithstanding its very important contributions in highlighting the relationship between coloniality and scholarship, the 'cognitive justice' movement has not set its horizons wide enough. In uncritically accepting the conceptual structure of modernity, its capacity to offer different thought is curtailed. When 'culture' defines the terrain, it brings with it the romantic notion of 'Being', in which nationalist sentiments reframe the experience of being in a collective (simply being together) as 'the Being of togetherness', in the words of Jean-Luc Nancy.[46] That argument accepts the 'thingification' of identity that Aimé Césaire decried in the 1950s in his resistance to ethnology.[47] What forms of collective presence, or networks of association, were at play in the precolonial era? At what historical point did people begin to think in the tidy social boundaries that are implied by the idea of 'culture'?

The argument that I am offering has several points of agreement with the critical humanities. Yes, the idea of 'indigenous knowledge' is often ahistorical. Yes, it may rely on a kind of culturalism that draws heavily on the colonial vision of culture as comprised of genealogies and blood ties. Yes, it is often the case that 'indigenous knowledge movements' assert an historically problematic notion of ethnicity that may well serve the interests of a class of elites, and yes, it is troubling to see the use of tradition to insulate indigenous knowledge discussions from criticism. Such criticisms are well noted. *Yet they are not the sum of what can be said about different knowledges and ways of knowing.* The focus on identity politics within South Africa's critical humanities is, I suggest, misplaced. By limiting the critique to the way in which the idea of 'culture' is politically constructed and appropriated to one or other identity (whether ethnic or otherwise), the argument loses its way. Such an argument may have been of value in an era in which culture and identity were central elements of apartheid ideology. But South Africa's contemporary science wars have shifted the fight out of the terrain of culture and social forms, to that of 'nature' itself: what is real, what is rational, what is science, how is nature known, whose sciences ought to prevail in a democracy, and so on. It is appropriate for Parliaments to question in what sense the sciences can claim to define nature, reality and truth. But where the argument begins to be resolved by an identity politics of knowledge – 'Western' or 'African' science – a democracy that depends on science for policies, policing and judgement is indeed in deep trouble. Activists, in such a context, have not found in scholarship the tools to mount an effective response, and have met the state's efforts to assert an identity politics of nature by denouncing interests and associations and beliefs rather than reframing its questions, and grappling with the intellectual heritage of scholarship itself.

If nothing else, the South African version of the science war teaches that scholarship by denunciation is a toxic game. The recognition that it was with much the same tools of argument that Mbeki asserted that AIDS was a social and political construction has enormous consequences for those of us in the critical humanities who were schooled to detect and 'out' interests and associations of powerful elites. But the struggle over knowledge that has come to be defined as 'indigenous knowledge' cannot be adequately described as culturalist, or ethnonationalist, or fundamentalist, or a movement of political elites, or the marginalised. If South African scholarship is to move beyond the current impasse, there is a need for recognition that the idea of 'indigenous knowledge' not *only* incorporates claims to identity or efforts to incorporate financial gain, but *also* indexes a challenge to central ideas of modernity: including in relation to notions of personhood in medicine and jurisprudence, to notions of ecologies, to notions of well-being, and to what it means to know or believe or imagine. Once one recognises the language of indigenous knowledge as a resistant appropriation of the language of difference, and that it is not solely the advancement of interests that is at stake but an interest in the possibility of different worlds other than those defined by the Cartesian dualisms (mind–body, nature–culture, and so on), it becomes possible to escape the paralysis of a debate confined to whether or not 'indigenous knowledge' is a 'thing' that is or is not 'real'. A rich range of literatures informs the possibilities that are opened by such a shift in approach, and in the remainder of this article I set out four interrelated conversations that illustrate possible approaches for researchers who hope to engage with a wider intellectual heritage.

## Things: Towards a critique of modernist ontologies

In re-reading aspects of the indigenous knowledge debates as a resistance to the available frames of modern knowledges,[48] a first possibility emerges: that at times the very 'things' under discussion may be different.

Many South African fishers, for example, offer accounts of the ocean as a partner to whom you listen and with whom you have a relationship.[49,50,51] The ocean, in this view, is not the one known in oceanography as a water mass characterised by currents and temperature. Neither is it the 'ocean' that is known by ecosystem service assessments, for example, as something that can be valued by price tags. Nor is it the kind of ecosystem proposed by popular documentaries as one that does not have any people in the picture. It is also not the ocean that is the means of production, in stock assessment science, of calculable quantities of a single species of fish. Fish, too, might be understood differently: many fishers speak of the intelligence of fish, and do not see them as the unintelligent and unresponsive forms of life that appear in annual catch quotas.[52,53] Thinking in this way, it becomes possible to understand that what people understand to be nature – whether ocean or fish – might be very different. Yet a fisher's 'ocean-as-partner', or 'fish-with-intelligence' does not necessarily need to be 'converted' into 'fish or ocean as objects' in order to ensure their conservation. As fisheries management moves toward an ecosystem approach to fisheries that includes a consultative relationship with fishers (in

terms of the Convention on Biodiversity), the partnership that many fishers describe when they speak of the sea and fish is a resource for embattled marine conservationists that has no price tag.

Much as the ocean can mean different things to fishers, it can also mean different things in the sciences. A marine biologist who has fished for 40 years can know the ocean in ways that even he or she cannot communicate in a quota committee that only allows decisions to be based on natures that can be represented in calibrations and quantities. A marine ecologist might see the sea very differently from the stock assessment scientist, in much the same way as a fisher who acquires access to industrial-scale extractive capacity might begin to think quite differently about fish. The point is that the 'natures' that are in play are not based on someone's cultural (or 'stakeholder') identity, but on their actual interactions with sea and fish. 'An object does not stand by itself,' write Marianne Lien and John Law, 'but emerges in the relations of practice'[54]. The shorthand term for this insight is that of a 'relational ontology'.

Such an insight reflects the beginnings of a paradigm shift in a dialogue on the nature of knowledge in the humanities and sciences.[55,56,57] Working with it, public consultations on marine conservation might begin to move the conversation beyond a pedagogy that aims to secure compliance with science, to projects that explore different ways of knowing the marine environment. With sufficient time for generative dialogue[58,23] about different ways of knowing the sea, including how to evaluate knowledges, the management of the marine ecosystem as a commons might begin to be a reality in specific locales. This conversation would be very different from the one that is currently polarised between knowledges that are presented as identity-based ('fishers' and 'scientists') and those that are 'cultural belief' versus 'natural science'. Where the terms of the debate categorise knowledges as different before the parties have spoken a word to each other, there is very little chance of discovering the linkages and partial connections that might begin a new conversation. Indeed, it is perhaps partly for this reason that rather than securing the active cooperation of fishers, marine conservation efforts have to date provoked a great deal of resistance.[59]

Questions of public involvement in the generation of knowledge are central to the work of Bruno Latour and Isabelle Stengers, although in very different ways to those proposed by former president Thabo Mbeki in a speech in January 2012.[60] Together with Michel Serres[61,62], amongst others, these writers have developed a corpus of work that is critical of a dominant scholarly heritage which severs 'nature' from 'culture', and 'belief' from 'knowledge'. Major resources include Latour's *We have never been modern*,[63] *Pandora's hope – Essays on the reality of science studies*,[64] *Politics of nature – How to bring the sciences into democracy*[65] and Latour and Weibel's *Making things public: Atmospheres of democracy*.[66] The philosopher of science Isabelle Stengers, who may be known to readers of this journal through her work on chaos theory with 1977 Nobel Prize for Chemistry winner Ilya Prigogine,[67] has written extensively on the sciences, much of which is newly published in English: see *The invention of modern science*,[68] *Cosmopolitics I*,[69] and *Cosmopolitics II*,[70] which includes a long essay on quantum mechanics alongside another on what she calls 'the curse of tolerance' (Who wants to be tolerated? she asks). These conversations point to a reconceptualisation of knowledge as constantly produced and reproduced in interactions. Knowledge, in this view, is not the acquisition of unmediated facts, nor is it the unmediated apprehension of intellectual heritages or indigenous knowledge. There are always mediations – and as such, knowledge studies are at their strongest when focused on careful study of how knowledge objects come to be generated. Such an approach is not a cultural relativism but instead brings to conversations about the democratisation of knowledge an attention to the ways in which research processes bring particular realities into being.[64,55,54] Isabelle Stengers, for example, attends to the ways in which the knowledge economy hastens us to identify 'things' in our research products, missing qualitative aspects like vitality and well-being (a point which I shall pursue later).[31] Her work is reminiscent of the problem that Aimé Césaire pithily formulated decades ago in his rejection of colonial thought. 'Colonisation = thingification,' he wrote.[47] For scholars seeking to rethink the relationship between the university and all that falls beyond its rooftops – still so often modelled on Greek temples, even here in Africa – what does it mean to allow the possibility that there are ways of knowing the world that are not easily rendered in the language of objects and subjects?

The problem of translating complex relationalities into 'things' is central to current South African debates on African knowledges. Two examples suffice. Sangomas' (traditional healers') insights into the consequences of social relationships for health and disease extend beyond the notion of health as the property of an individual person and their biochemistry. Similarly, different understandings of what it is to be an ethical person generate markedly innovative approaches to conflict resolution where jurisprudence is understood in relation to uBuntu.[71,72] In both cases, although one example would be taught in a law faculty and the other in the health sciences, an approach grounded in relational ontology assists in shifting the focus of the debate away from whether or not things are really real or really belief, toward a discussion that recognises that notions of what it means to be a person are profoundly important for legal and medical practice, and for questions of care and nurture in the sciences.[73]

## Embodied knowledges and data

Rethinking the split of mind and body, so dominant in the intellectual heritage of the Enlightenment, offers a second arena of enquiry on knowledges and ways of knowing. Scholarship on knowledge is increasingly turning attention to practice-based knowledges that are not easily rendered as numbers. By contrast, technologies – like geographical

information systems, databases, heart rate monitors – can produce what a court of law might regard to be 'justified true belief'. How might scholars account for the ways of knowing that exist in the hands of the midwife who reads the birthing belly with her hands? How might she defend what she knows in a court of law where her accusers accuse her of 'malpractice' because she did not generate a constant stream of numbers from a foetal heart rate monitor that would have tethered the labouring mother to a hospital bed? Under what conditions of argument would her accusers acknowledge that years of experience in obstetric medicine builds a very similar sets of skills, which obstetricians prize as much as they do the patterns emitted from their heart rate monitors? At the core of this argument is the recognition that some ways of knowing lie outside the terrain of formally accredited knowledge, in many cases not because they are not justifiable but because they rely on forms of sensory data for which technologies which might measure them have not yet been developed, and because knowledge that is hard to quantify or write down is hard to work with in dialogues between the sciences and non-formalised, embodied knowledges. Yet the difficulty of those kinds of conversations (which may happen between fishers and marine conservationists in much the same way as between midwives and obstetricians) is not because the knowledges in themselves have some radical cultural difference. The difficulty of translating these kinds of different knowledges is because the sciences have inherited 300 years of tradition: to remove almost all bodily senses except the visual from its ways of knowing. The enumerable – that which can be counted – counts as evidence. The relationship between law, technology, writing and knowing, in this scenario, comes up for scrutiny. The realisation is provocative: *archives, databases and evidentiaries measure that which is visible within a particular intellectual heritage, or scholarly orientation*. Technologies, in other words, bring particular knowledge objects into being. The implication: programmes of research that look for generative dialogues across knowledge traditions can work towards grasping different measurables, and different evidentiaries, and perhaps need to be bold enough to rethink what it is that technologies could be measuring. In order to pursue this kind of innovation, the methodology is ethnographic: detailed, careful attention to how people know what they claim. A recent work that explores this approach is that of anthropologist Tim Ingold, whose book *Lines: A brief history*[74] offers a critique of technologies of data collection. Ingold's project attends to the ways in which modernity relies on data-recording technologies – such as cartography, musical notation and architectural drawing – that in the name of objectivity remove movement and embodied senses (other than the visual) from the notation of information. Ingold's project yields many possibilities for a re-engagement of the humanities, sciences, technology, and ways of knowing that have not found their way into curricula.

## Reasons for knowing: Scales, models and visual arts

The observation that different knowledges emerge in relation to technologies also is pertinent to thinking about scales and models. Fishers who are familiar with specific bays can comment on changes in the availability of fish in qualitatively different terms to those of a scientist assessing average catches in latitude-longitude.[75] City people battling with urban flooding have an accumulated local knowledge, both social and ecological, that may be very different from the hydrological models and hydraulic sciences behind flood-risk estimation and management.[58] Climate scientists are working with 30- to 50-year scales, but decision-makers in Parliament are often working with a 4-year electoral timeframe. Different scales, in other words, are not just about data compression but reflect different purposes people have for knowing and therefore different knowledge objects (or differently known relationships) are in the models. Different reasons to know produce different objects of attention, or different facts – or, to use Latour's phrase, different matters of concern.[76] The map is not the territory but a convention for imagining it. If 'knowing' in the sciences involves what epistemologist Catherine Elgin calls reconfiguration – 'reorganizing a domain so that hitherto overlooked or underemphasized features, patterns, opportunities, and resources come to light'[77]– then it becomes possible to open a much more nuanced debate over the uses of the imaginative arts, scales and models in dialogue with different ways of knowing. These kinds of arguments offer a bridge for scholars who want to explore the possibilities of different ways of knowing. The late Emmanuel Chukwudi Eze argued for understanding varieties of rationality. 'Reason is not a thing,' he wrote, 'but rather a field of mental acts in perception, understanding, and explanation, including the frameworks of comprehension and justifications of the field itself'[78]. Eze's untimely passing is a great loss in this field, and his posthumously published work offers an important commentary on understanding rationalities in relation to rationales for knowing.

## Towards a critique of the knowledge economy

Building on these insights it becomes possible to offer a critique of the knowledge economy itself, in which rationality and the sciences and many contributions on indigenous knowledge are often framed by the calculative logics of capital. For Isabelle Stengers, the kinds of knowledge produced in the knowledge economy (where universities subsist in a particular relationship with capital, monetary logics, temporal logics, added value, and other controllables), are unable to deal with the unsettled, the unnameables, the ways of knowing that are part of life and care – in short, the aspects of knowledge and knowing that are not easily 'thingified'.[47,79] These aspects include, for Stengers, the care and nurture of a quality of academic argument that is able to attend to that which people find nurturing, and life-giving: the qualitative aspects of well-being that the 'knowledge economy' is unable to measure in familiar kinds of enumerations, and which it therefore fails to notice.[73]

Stengers' comments provoke many questions on what one might call South Africa's 'ARvsARVs' (African Renaissance

vs AntiRetroVirals) polemic. In this, an important local question is: in what ways does the South African science war, with its stark positions on science and traditional medicine, set up conditions in which discussions of care and nurture and nutrition become 'dissident science'? In what ways does this in turn contribute to the conditions of thought that allow a diabetic patient to spend a day in a primary health-care clinic and receive four successive drips but no food? (This experience was related to me by an elderly Black woman after she was treated in October 2010 at one of the Day Clinics in the greater Cape Town area.) The point is not to blame-shift, from one side to another, but to recognise that stark polemic makes for stark choices, and that sometimes the polemic itself is caught up in that which undermines nurture, care and well-being. Stengers' call is for academics to stop developing ever cleverer denunciations of one side versus another, and to open a dialogue about a different ecology of knowledge that might offer researchers a way of moving past the destructive fallout of the science wars.

Stengers' work also provokes questions about the entanglement of indigenous knowledge with the knowledge economy in emerging markets like South Africa, India and Brazil. For example, once particular molecules have passed their clinical trials and are defined as traditional medicine (or 'TM' in its popular abbreviation), the trademarked TM™ constitutes a new knowledge object that takes on a very particular life in national wealth creation projects whether in South Asia or South Africa, in Black economic empowerment projects, and in global networks that hold together pharmaceutical chain stores, streetside vendors, rural museums, biopiracies and nascent ethnonationalisms. Without question, wealth creation is an important part of redressing the historical injustices that are built into the knowledge economy. Yet I think the question needs to be asked as to whether the TM™ approach has become a new form of 'thingification' that renders unnameable exactly the sorts of vitalities and ways of knowing and being that constitute the indigenous resistance to the global economy. Such a resistance is evident not only in Latin America,[48] but also in the 'slow science' movement in Europe.[80] And it is evident in courts in South Africa where judges like Yvonne Mokgoro and Albie Sachs have sought to rethink the principles of jurisprudence in ways that reflect principles of ubuntu alongside questions of financial recompense.[81]

The current South African policy on indigenous knowledge systems[82] is, I propose, heavily invested in the neoliberal knowledge economy. The model evinces a trade-off: it gets space in the Department of Science and Technology and in some universities, but in a way that all too frequently sets it apart as 'African knowledge' which, because of its very separateness, has very little capacity to challenge what Bruno Latour calls the 'three goddess sisters of reason in the knowledge economy', namely, '(technical) efficiency, (economic) profitability and (scientific) objectivity'[83]. And yet it is precisely the different ecologies of knowledge, and different iterations of reason and the reasonable that inspire much of the indigenous knowledge movement. How might scholars recover this critique, and offer a different kind of intellectual hospitality?

In my view, the difference begins with the recognition of the entanglement with capital in current state-led approaches to indigenous knowledge in South Africa. Once that is on the table, it becomes possible to ask different kinds of questions, and to develop a different intellectual project. Might 'indigenous knowledge' be pursued via an investment in the commons rather than the stock market? In this scenario, what kind of dialogues about knowledges might be possible, where knowledge is not understood to be part of democracy because diversity is tolerated, but because there is democratic dialogue on the tools of testing, criticism and innovation? How might the capacity to test knowledge and ways of knowing be rethought, and rekindled? What aspects of knowledge lie outside the realm of monetarisation? What kind of practices lie outside of laboratory testing? What aspects of knowing resist quantitative research? What kind of public spaces are opening for criticism of patriarchal elites? Under what conditions could the humanities and sciences be able to support the emergence of these new conversations?

All of the above approaches make a case for critical engagement with the current policy on indigenous knowledge in South Africa. Such an engagement requires rethinking the assertions, currently enshrined in the Indigenous Knowledge Systems Policy, that 'indigenous knowledge' exists primarily as a static cultural inheritance with the potential for wealth creation in the knowledge economy, and that formal science and its associated technologies are the only way to measure and define knowledge. Much more interesting and productive, I think, is to pursue a critical enquiry into intellectual heritages, including the ways in which the project of contemporary scholarship continues to defend a particular kind of divide between knowledge and belief that emanates from the battle to separate church and state in Europe so long ago. Is it necessary to continue to fight that battle in the way that we do? How might we re-read the peace treaty between church and state of that era, and instead of continuing that crusade (to separate 'dark belief' from 'the light of knowledge'), to consider the applicability of its principles in other spheres such as the intersection of knowledge and capital, or knowledge and coloniality, or knowledge and race? Having done so, what fresh insights might be gained on the emergence of the distinct categories of 'indigenous knowledge' and 'science'?

Beyond a knowledge politics of 'cognitive justice' and the TM™ that bear such a burden in the global race for World Intellectual Property and patents, could the possibilities for intellectual debate expand if the questions posed under the troubled banner of indigenous knowledge are reimagined as a debate about intellectual heritage, including that of modernity? Would publics find new spaces for re-tooling criticism and innovation? If scholars work in ways that nurture different ecologies of knowledge, might dialogues

begin to imagine alternative vitalities that speak to different notions of public health and jurisprudence? Might it be possible, by engaging with different knowledges and ways of knowing, for postcolonial universities to find the resources to mount a serious challenge to the three goddess sisters of reason in the knowledge economy? If scholars are to strengthen the relationship between the national indigenous knowledge systems agenda and current dominant forms of knowledge, debate on these kinds of issues is worth the trouble.

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