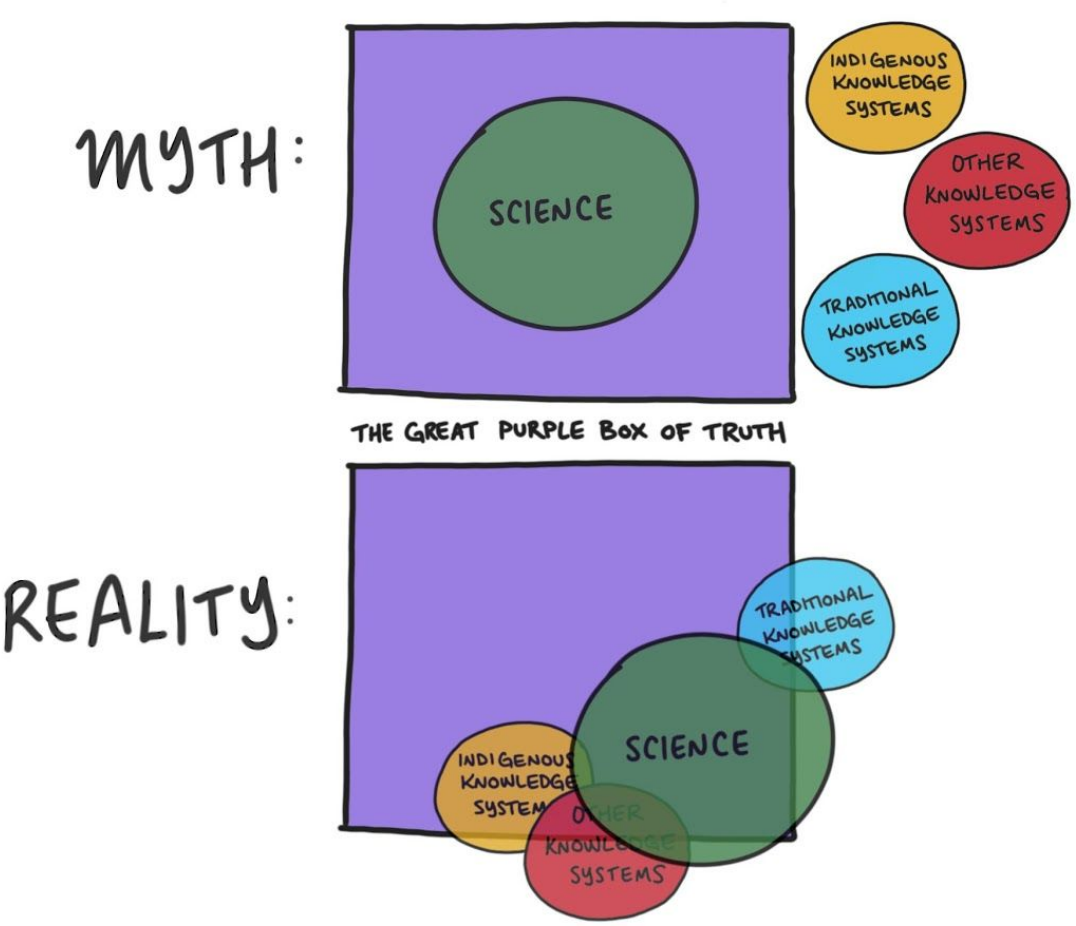
FINGERPRINTS ON THE MICROSCOPE LENS

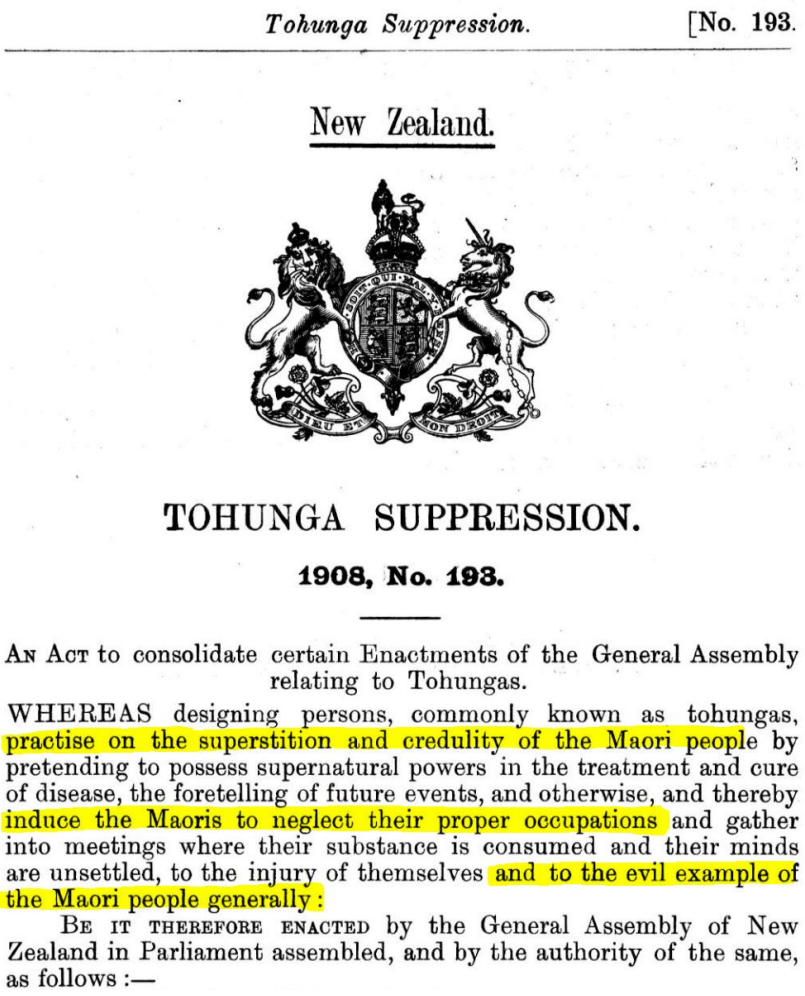
WORKING TOWARDS A DECOLONIZED SCIENCE



"Defining what is 'indigenous' about indigenous knowledge is complex; distinguishing between the sciences and other knowledge traditions is not as straightforward as it might seem." (Green)

Whose Science?

Modern science is built neatly on foundations of European imperialism; foundations made invisible by the ongoing claims of science being value-free. In the (un)enlightened words of Bob Brockie, science "transcends nation, race, culture, and political perspectives". This view is still pushed by many pop-culture science communicators. Have we truly cleaned our microscopes of the colonial fingerprints?



Tohunga Suppression. [No. 193.

New Zealand.

TOHUNGA SUPPRESSION.

1908, No. 193.

AN ACT to consolidate certain Enactments of the General Assembly relating to Tohungas.

WHEREAS designing persons, commonly known as tohungas, practise on the superstition and credulity of the Maori people by pretending to possess supernatural powers in the treatment and cure of disease, the foretelling of future events, and otherwise, and thereby induce the Maoris to neglect their proper occupations and gather into meetings where their substance is consumed and their minds are unsettled, to the injury of themselves and to the evil example of the Maori people generally:

BE IT THEREFORE ENACTED by the General Assembly of New Zealand in Parliament assembled, and by the authority of the same, as follows:—

Conquering other lands and cultures also required conquering any other knowledge system which threatened the order. The Residential Schools System in Canada and the Tohunga Suppression Act in Aotearoa/New Zealand are two of many examples of colonial projects intended to suppress indigenous knowledge. Billed as a way to "protect" Māori and settlers from "dangerous" practices, the Act worked to prevent generational transfer of knowledge acquired over centuries.

(Image: Early New Zealand Statues)

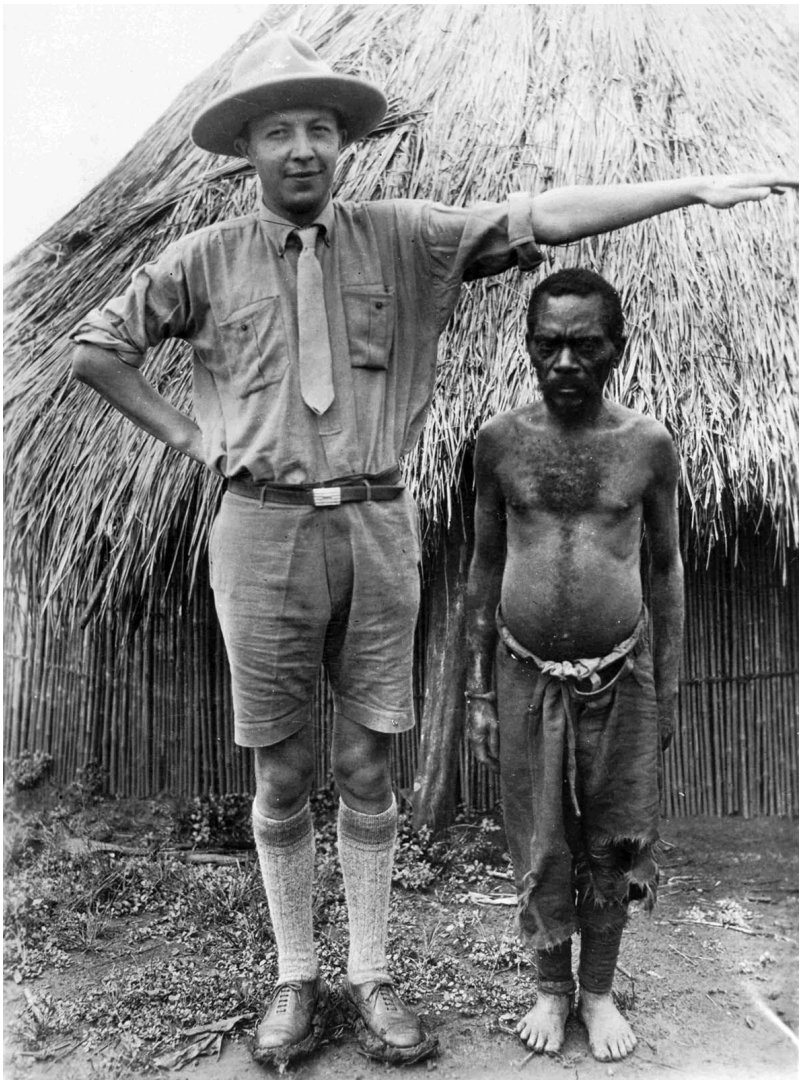
We've come a long way since then - but racist tropes about indigenous knowledge aren't artefactS of the past - see here and here and here (for a great response to Brockie, see Dame Salmond's reply here).

" Far from protecting the scientific project from bias and political interest, they are trying to uphold a status quo based on ethnocentric bias and outmoded dualisms…" (Salmond)

And yet - science still relies heavily on other knowledge cultures for data, ideas, and increasingly for novel sources of plants for biomedicine. There are significant information flows between indigenous cultures and scientific institutions. One study on research projects which required international collaboration found that 60% to 70% of scientists in westernized countries didn't even bother to cite their co-authors in poorer countries.

"Expansionist state power makes it possible to forage in other cultures' knowledge traditions, to test hypotheses in non-European environments around the globe, and to destroy, intentionally or unintentionally, those other traditions that could have created competition for modern scientific claims and practices." (Harding)

As an institution, how can we so readily borrow from other cultures and then dismiss them?



(A Danish colonial officer standing next to a pygmy man. Image: Paul Schebesta)

But aren't they incompatible?

One of the most common differences between western science and indigenous science is *reductionism:* breaking matter into smaller and smaller pieces. By contrast, much indigenous knowledge relies on whole-systems, relationality, and interconnection. Scientific reductionism, which has been invaluable for probing the inner structure of the atom, coincidentally happens to be harmful to ecosystems.

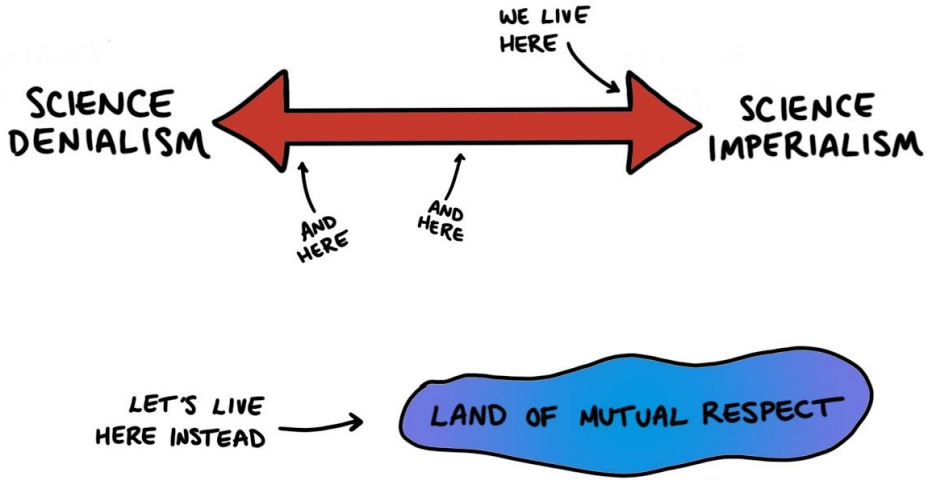
On that point: indigneous societies are by no means homogenous; however there is one factor that is common among all indigeous groups - a sense of unity with the environment. It's becoming more apparent each year that western culture could probably use some more of that. (Also, this).

Recently many indigenous "stories" have been validated by western science, such as the Heiltsuk Nation villages dating back 14,000 years in British Columbia; Inuit claims in the Arctic Circle that the earth had tilted on its axis (actually a function of particle accumulation in the atmosphere); or Cowichan oral history of earthquakes in the Pacific Northwest. A miraculous transformation happens in these instances - what were previously "myths" or "folktales" instantly become rich sources of scientific data. They are *demythologized.* At it's best, this process serves to support indigenous accounts of history, useful for settlement negotiations. At worst, knowledge is removed from its original value system and loses context. In either case, science gets to serve as the "validator" of any knowledge, strictly within scientific philosophies, and the ability to claim the "one true account of nature's order" stays strictly locked away in ivory towers.

But doesn't this just mean that anyone can believe anything?

No - that's an oversimplification. We can still gain knowledge about the world through scientific research, and accepting other knowledge systems as *equally valid* doesn't mean we need to accept mythology as fact - mythology and scientific research serve different social needs. It is possible to have productive interface between two value systems, even if they have contradicting worldviews. It's absolutely important to protect the integrity of science at a time when so many institutions are steadily chipping away at it.

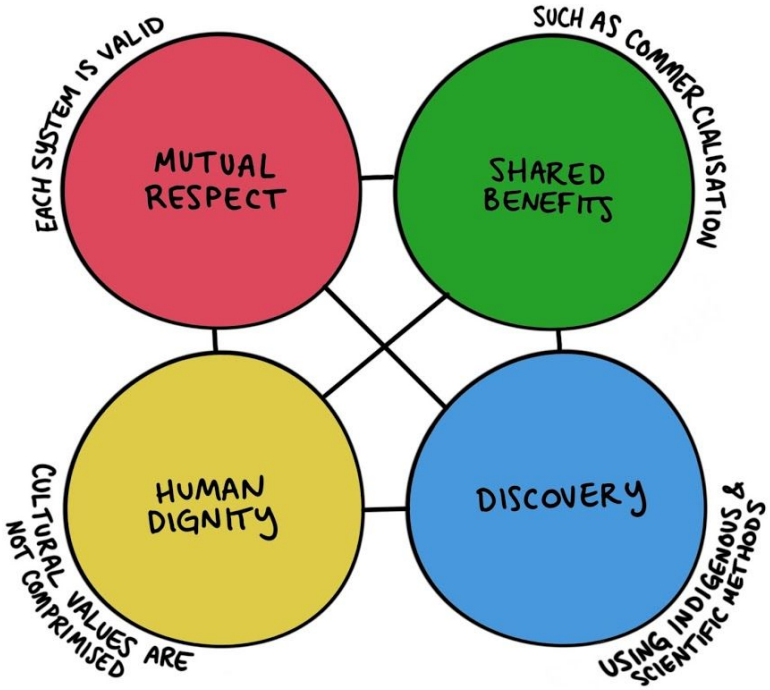
Science denialism and science imperialism are dangerous in unique ways. This shouldn't stop us from questioning who gets dominion over the production of knowledge and truth, who actively holds that power, and who gets excluded. Similarly, western science and indigenous knowledge have their own strengths, and respectful engagement with them can strengthen them both. Simply put, "Some sciences are better if you want to get to the moon; others if you want to maintain sustainable environments" (Harding).



"This does not involve surrendering one's own values or identities, but rather recognizing the validity of a partner's reality or worldview" (Lyver)

So what is there to be done?

We need concerted efforts to practice science in anti-colonial ways. Bringing multiple, sometimes conflicting knowledge systems into the fray is a complex endeavour - how do we ensure it's being done respectfully?



The principles of interface research, Mason Druie.

Interface research specifically deals with research across cultures and value systems. A code of ethics is necessary - and required by the UN. This is particularly important when there is potential for commercial gain, such as in *bioprospecting* or *biopiracy;* something that has occurred historically with neem, quinine, and still occurs with plants like jeevan and ayahuasca. Closer to home, scientists could work to make their language more accessible and inclusive. We currently spend time talking past each other about the same concepts (pg. 6). Many studies have identified inflexibility in scientific language as a major barrier. Finally, indigenous cultures have every right *not* to engage with research, and we must respect that.

Science is our culture's way of probing and interpreting the world around us, and well-done science forms the foundation of our decision making. In an era where science is being increasingly undermined by poor media and new-era fears, it can be tempting to protect its boundaries with fierce polemics. But is our grip on reality really so tenuous we feel the need to quash and belittle other knowledge cultures? Perhaps instead we could place some extra seats at the table.

Cassandra Spearin
June 2019