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“Assessment Practices and Transforming Our Relationships to Power” by Mylène DiPenta

Have you ever wondered what science would look like today if it had developed with everyone taking their full and rightful place at the table?

Of course, enormous contributions to science have been made by every group, at various places and times in history. But the dominant idea of science today, which grows out of what we sometimes call the Scientific Revolution, is only about 500 years old. And that is exactly the period during which the groups we today try to “include” got excluded in the first place.

HOW DID EXCLUSION START 500 YEARS AGO?

Between 1350 and 1533, in Europe, same gender sex went from being not on the books to being punishable by death. The borders of what was considered acceptable gender expression also became much more rigid, narrow, and binary than they had ever been before.

Women, who had previously participated in guilds, got pushed out. Midwives and alewives were both suddenly criminalized. Ending a pregnancy was suddenly criminalized. But women knew what plants to eat if they didn’t want to be pregnant any more. I can tell you from personal experience that it’s not that difficult.

So there were massive revolts and mass executions. Thousands of women died. We call them witch trials. Criminalizing the science of midwives made that knowledge much more difficult to spread and more dangerous to use.

Also emerging at the same time: private ownership of land. Before that you couldn’t buy land any more than you could buy a river. Also, the nation state, and the modern form of policing that was needed to enforce it. In other words, rigid control over the borders of land. European aristocrats did this first in Europe, then extended it around the world, in combination with another new invention: whiteness and white supremacy. These were used to justify chattel slavery and colonialism.

THE SCIENTIFIC REVOLUTION BEGINS IN A SHELTERED BUBBLE

It’s important to know all this because the other thing that happened about 500 years ago is that Copernicus published *On the Revolutions of the Celestial Spheres*, marking the beginning of what we consider the scientific revolution: the emergence of the form of science that is dominant today.

That science developed in a sheltered bubble, protected from the kind of challenge and critique it would have faced if people of all cultures and genders had been taking their full and rightful place at the table. If today’s science, as a seedling, had been required to be accountable to everyone, there’s no doubt in my mind that it

would be something entirely different today. It owes its default settings of individualism, hierarchy, and focus on control over natural forces to that early crucible of violence and suppression in which it grew.

And, it has accomplished amazing things! Relativity is amazing. Quantum physics is amazing. But those things are necessarily a pale shadow of what could have been accomplished. Imagine what that could have been.

So now that our current view of science has grown deep thick roots, and is extremely difficult to reshape, NOW we invite the pushed out people to return and participate in it?

DIVERSITY AND INCLUSION: WHERE ARE THEY LEADING US?

I'm going to suggest that diversity and inclusion are the Bohr model of scientific justice. Powerful, accessible to many people, important in our path of changing ourselves and our institutions. But very, very far away from the whole story.

POLICING BORDERS OF KNOWLEDGE, BODIES, AND LAND

Because the way of policing the borders of knowledge arose together with and for the same reasons as policing the borders of acceptable genders, bodies, races, nations, and land, we'll know we're doing it right when our efforts on one of those support the efforts of others. I want to be plain: I am saying that we cannot have true diversity and inclusion in science until we end the way we police the borders of the land we do it on. How can physics truly "include" women if women who are trans or Indigenous or both are dying and being disappeared? Eve Tuck and K Wayne Yang say it as "[Decolonization is Not a Metaphor](#)"; Indigenous sovereignty isn't just possible; it's necessary for all of us to move forward into a just future.

WHAT MOVES US TOWARD LIBERATORY GOALS?

And if you're not sure whether that tree, planted 500 years ago, is really such a problem, consider that Gloria Ladson-Billings, originator of culturally-relevant pedagogy, gave a [speech](#) just last week concluding that we have not, in 65 years, accomplished the desegregation called for by Brown v Board of Ed. She concluded, "we need to think differently of who we are as a nation." Along with causing persistent inequality in our physics classrooms, this 500 year old tree motivates concentration camps at the border, telescopes that are forced on communities by national guards, it is also putting us on a collision course for climate destruction. The bad news is that diversity and inclusion will not be enough: a complete shift in our relationships to each other and the land will be needed. The good news is that, because everything is connected to everything else, we could work collectively toward a shared goal while taking a step from where we are. When I'm deciding what to do next, I try to ask, which steps move us closer to liberation? I hope you're found a new step you can take. And I look forward to learning from each other how to take bigger steps together.