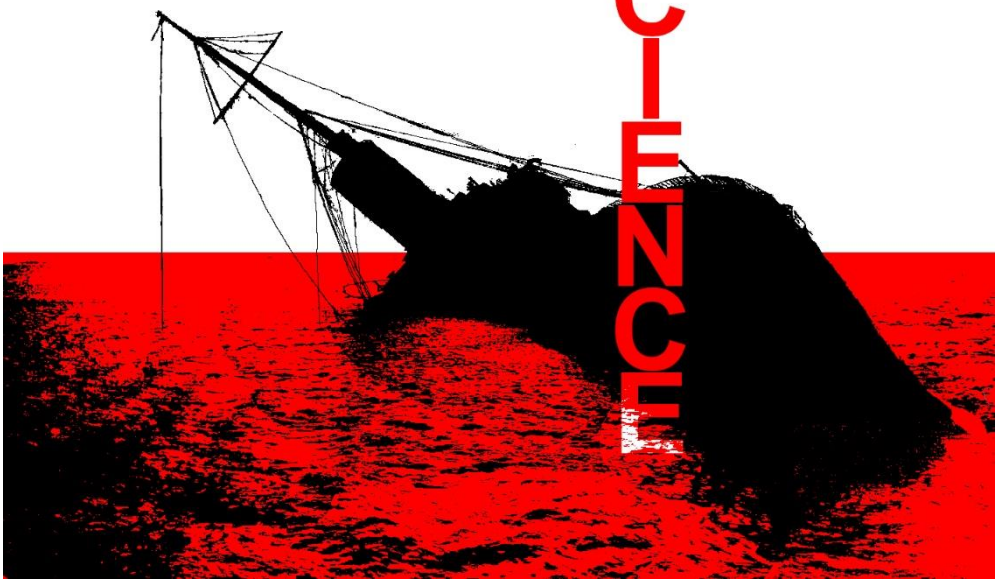
CAPSIZING SCIENCE



By Sarah Cannaux, Oliver Zillig, Maheep Tripathi, and Nicole Seimebua

00:00 *"I was on a bioethics panel, and there were four of us bioethicists and people who study race or indigeneity in relationship to genetics, and it was a pretty big room, might say. It was seating about 300 people, and at the end of our panel this older white woman geneticist […] she stood up and she was so angry, she was shaking. And she said to me "How dare you impose politics on our field!" […] so I'm often accused of imposing politics on to science, but as most of you - I hope all of you - in this room know, science and technology is already intimately tied up with political projects"*

Kim TallBear
https://youtu.be/itq-vwQJo9Y?t=542
(09:02 – 09-58)

00:40 This is Kim TallBear, a professor at the university of Alberta, specializing in racial politics in science. Here, at an event hosted by the Saskatchewan Indigenous Mentorship Network, she discusses how science is influenced by politics and colonialist values and how people get offended when she brings this up.

01:00 Welcome to our podcast "Capsizing Science". I am Nicole your host for today, and this episode is all about the decolonisation of science

01:18 Who do you picture when you think about science? Do you see a white man in a lab coat? And who do you see when you think you about colonisation? Another white man on a ship though sailing across the sea? In this episode we want to show how one man shaped the other, and continues do to so, as TallBear suggests in her talk and therefore calls for a decolonisation of science.

01:42 So, what exactly is, the decolonisation of science? Decolonising science as a movement, aims to eliminate, or at least mitigate, the disproportionate impact of colonialist European thought and cultural infrastructures in science and its teaching.

01:59 It also means dismantling the system of oppression that accompanies globally imposed colonial values and understanding how implicit they are to our knowledge production. Basically, it's about realising that the science we are taught today is, in fact, a colonised science that has been part of our teaching cultures for a very long time.

How decolonization could reshape South African science

02:19 I mean, who hasn't been taught that Columbus discovered the American continent, ignoring entirely the several million people that lived there prior to this, and that are barely mentioned in our history books? Through colonial efforts, European values of the time were transported across the globe and imposed upon the so called "discovered" populations, during the so called age of discovery.

02:49 The age of discovery began around the 15th century, and was marked by extensive overseas exploration, led first by the Portuguese and then by many of its European

neighbours. For imperialists, the European empires brought the gifts of science and medicine to the colonial world. In this global climate defined by European political and commercial domination, gathering knowledges about the rest of the world took place right alongside the exploitation of the natives.

03:18 The 15th-century imperialists interpreted the scientific successes of the European world, as a convenient reason to allege that non-Europeans were intellectually inferior and thus, somewhat deserved and needed to be colonised. These thoughts ran through many strata of European societies and led to the condemnation of native languages, because they lacked scientific words or useful knowledge and were apparently filled with false history, false astronomy, and false medicine.

03:44 Unfortunately, such opinions weren't exclusive to colonial officials. They were also shared by various representatives of the scientific community including a prominent Victorian scientist, Sir Francis Galton who argued that "the average intellectual standard of the negro race is some two grades below our own", here he refers to the Anglo-Saxon. And also Charles Darwin for example, the British naturalist, geologist and biologist, best known for his seminal work in the science of evolution, who implied that "savage races" such as the "Negro" or the "Australian" were closer to gorillas than white Caucasians were.

04:21 As the age of discovery transformed into that of the enlightenment, science did not lose its colonial edge. The late 18th century was marked by the systematic studies of human behaviour, especially the study of indigenous cultures, which would later develop into modern anthropology. A real enthusiasm was born from the study of "the other", and led to the emergence of human zoos, or ethnological exhibitions.

04:50 In these ways and more, European progress in science and technology in this period both drove and were driven by its political and economic domination over the rest of the world. The colonial system used science as a tool of oppression and as a justification for colonisation essentially, which hugely influenced how Europeans saw other races and other countries.

05:14 Already by the 19th-century, imperial ideologues were so influenced by this colonial system, that they started integrating it to every aspect of life. When imperialists started making effort to reduce the spread of epidemics like cholera or smallpox, they also took this opportunity to attempt to discipline the routines, diets, and movements of colonial subjects. This led to a political process that the historian David Arnold has termed the "colonisation of the body": those with power turned medicine into a weapon they can use to secure imperial rule

Colonizing the Body

05:49 And examples of this colonisation of the body held up over time, even after colonies were no more.

05:55 In the 1800s, US national and physician James Marion Sims, produced influential work in women's reproductive health, becoming best known for developing revolutionary tools and surgical techniques. He's even named the "father of modern gynaecology". Yet, historians and ethicists have called for statues in his honour to be removed. Why? Because his research was conducted on enslaved Black women, without anaesthesia. Critics assume that Sims cared more about experiments themselves than in providing real therapeutic treatment. Whatever his motivation or reasons were, he caused unimaginable suffering by operating under the racist idea that Black people did not feel pain.

The 'Father of Modern Gynecology' Performed Shocking Experiments on Slaves

6:40 Sims use of Black bodies as medical experimental subjects is part of a long line of the frightening and ethically questionable history of medical apartheid, which also includes the Tuskegee syphilis experiment

6:55 Still closer to our times, in 1932, the Tuskegee study was a large scale research project to record the natural history of syphilis in hopes of justifying treatment programs for black people. Originally named the "Tuskegee Study of Untreated Syphilis in the Negro Male", it initially involved 600 black men, 399 had syphilis and 201 did not. The study was conducted without patients' informed consent, without even defining the actual disease for which they were being tested and treated. In fact, none of them received proper treatment for this disease, they only received free medical exams, free meals and burial

	insurance. Although originally projected to last 6 months, the study actually went on for 40 years.	
7:45	*"What was done cannot be undone. But we can end the silence. We can stop turning our heads away. We can look at you in the eye and finally say on behalf of the American People: What the United States government did was shameful and I am sorry"*	Bill Clinton https://youtu.be/Wju0wD9mK3Y 0:48-1:16
8:15	You just listened to former US President Bill Clinton issuing a formal apology on May 16th 1997, for the 40 years through which none of the men were given or offered adequate treatment, the 40 years in which the men were misled, not given all the facts to protect their families from transmission, and weren't even given the choice of quitting the study.	
8:44	Unfortunately, the Tuskegee Study was not the last instance of the exploitation of Black bodies for scientific experiments.	
8:52	Biomedical fields have long housed colonialist and racist ideas that have affected Black people in the past and still do today. In terms of research, the HeLa cell controversy is a prime example of the modern exploitation of Black bodies for scientific purposes as well as modern colonialism.	
9:11	Henrietta Lacks was a 31 year old mother of five that was treated for cervical cancer at the Johns Hopkins Hospital until it took her life in 1951. During that time, George Gey, a cancer and virus researcher had collected cells from Lacks' biopsy, amongst others. Her cells, however, were the only ones that survived being grown in the lab, doubling every 20 to 24 hours. Her cells led to the creation of an immortal cell line that remains very much used in research today, but Lacks' cells were taken and used without her consent or that of her family, and her family didn't even know her cells had become crucial to research until the mid-70s. Her children have never benefitted financially from the exploitation of their mother's genetic material. Lack's story is inseparable from issues of consent, ownership, and the troubling history of medical experimentation on black bodies.	The Strange Immortality of Henrietta Lacks
10:06	And these racist notions that Sims had about pain management of Black people? They are still around: A study from 2016 looked at whether this racial bias is in fact related to false beliefs about biological differences between Black and white people. Laypeople who endorsed the false belief that there are biological differences in races also reported the belief that black people felt less pain than white people. Shockingly, this stance is not limited to non-health care professionals: half of white medical students and residents surveyed in this study, endorsed beliefs that black patients' pain management is better than that of white patients, and ended up making less accurate treatment recommendations. Troublingly, this disparity in pain treatment exists even for children.	*Racial bias in pain assessment and treatment recommendations, and false beliefs about biological differences between blacks and whites*
11:01	However, science is not just only colonised in itself; it also supports colonist and racist ideas as a work place or teaching environment.	
11:10	And to address these biases and discrimination in universities, faculty hiring, research evaluation and publication practices, furthered by the current political unrest about structural racism, several activists of the global academic and specifically STEM communities have come together and formed movements to tackle and explore how academia supports coloniality and racism.	
11:34	The movement #shutdownSTEM called for a strike on June 10 in which academics and scientific organizations worldwide were to stop research activities to reflect and take action against anti-black racism within academia and specifically STEM. The strike got extensive support and it was joined by several universities, scientific societies and journals that called their members or readers to join too.	*#shutdownSTEM*
11:56	Its sister movement #DecoloniseSTEM also led by a collective of academic activists sought to critically explore the colonial roots of STEM at a symposium last year in November. At this event, scholar activists met to share ideas, about dismantling and reimagining a scientific world outside of coloniality and empire.	*#DecoloniseSTEM*
12:20	*What decolonisation is, is about an ending and a new beginning and the question than should be, ok what is this new beginning are we just envisioning a kind of reform or are we envisioning totally new kinds of institutions? You know and I think there isn't an answer*	*Juno Salazar Parreñas*

	yet, because this takes constant thinking through and working through. I don't think that it is possible to decolonize a discipline in a single year.	
12:58	*I think it takes ongoing conversations but I also think that the language of decolonisation is perhaps not the right one to be addressing what we really, want to be addressing it could be reparation, it could be repair, it could be like a reformation. So I think it really requires a lot of thinking through.*	*Juno Salazar Parreñas*
13:24	*I honestly think a sincere decolonization is a rethinking of our fundamental categories of post-enlightenment. Like what our categories are from this moment. I am not really sure what that would look like and I feel like our colonial legacies are so deep that I feel like we are still mired in the longue durée of colonialism. Like I don't think it is something … it is impossible to imagine shedding for me. It feels like it structures so much still. Part of it is a poverty of vision of feeling like it is hard to imagine what kinds of alternatives could there be.*	*Juno Salazar Parreñas*
14:12	This is Dr Juno Salazar Parreñas, she is a feminist science studies scholar who examines human-animal relations, environmental issues, and efforts to institutionalize justice. She is also the writer of prize winning book "Decolonizing Extinction". She's joined us here to discuss the topic of modern decolonisation of science. Here, she expresses her scepticism on the entire process, as it stands right now.	
14.37	*Part of me is really worried that efforts to decolonise are more about diversifying the way a discipline looks like, but I don't think that is actual decolonisation, that's a diversification. I honestly think that a decolonisation really means fundamental change of what we think of what we think is possible to think. When we are talking about decolonising science it needs to entail the questioning of what that science is, and then it harkens back to the formation of these sciences. Whether that's at the start from the late 19th century or in the case of biology more recently. You know, and how much colonialism and the cold war informed the formation of these disciplines.*	*Juno Salazar Parreñas*
15:30	These disciplines were defined in great part by influential white men and scientists. So, does decolonizing science mean throwing out Isaac Newton, Charles Darwin, Gregor Mendel, and starting afresh with exclusively indigenous knowledge? This is one of the radical demands made for the decolonisation of science, an argument that has become especially famous because of a University of Cape Town student who in a campus discussion, proposed that 'Science must fall?'. This argument demands science needs to be completely rebuilt from the ground up. The video of this campus discussion went viral.	*Science must fall?*
16:08	But there are also dangers to these more extreme attempts and there are risks that these attempts to decolonise science could play into the hands of religious fundamentalists and ultra-nationalists and turn quickly into an anti-western movement.	
16:23	However, only a small number of scientists hold such radical views, which are only marginally proposed. For most, decolonisation calls for something more complex and subtle, which makes it difficult for people to even imagine. That is probably why some then interpret decolonising science as an attack on the objectivity and neutrality of science as an institution, that people believe is not influenced by politics. Scientists like the one at TallBear's talk can get upset at the decolonising process because it questions the integrity of science.	
16:57	*You know we should recognize that we are not always going to be agreeing, or that we are going to be perfectly in sync together, but that we can collaborate together and have productive misunderstandings. That can lead to things that are useful for each other. And I think ecological problems are especially helpful for understanding this dynamic, because the 21st centuries ecological problems are so much rooted in sets of practices that are from both the great acceleration and from modernization, these are super colonial. And so than examining all the material effects of colonialism are especially visible with the natural sciences and especially with climate change sciences. So, I do think that is one of the issues why people are so keen on thinking about decolonizing science. And I think it is because of the ability to make the connections between environmental destruction and the creation of so many institutions that we know, that are scientific institutions.*	*Juno Salazar Parreñas*

18:28	While the romanticised version of science built by famous white men is somewhat convincing, it lacks an appreciation for the darker forces of exploitation and imperialism and their consequences on the current state of science.	
18:45	So how can we decolonise science?	
18:48	One should start decolonising as early as possible, this means decolonising high school and university curricula. Students should be taught how colonialism affected the development of science and how scientific knowledge was built on the exploitation of colonised people and to this day it still fuels and perpetuates prejudices based on the concept of race and ethnicity, just as this episode showed.	Taking steps in the right direction: 'Decolonising the Sciences' in the HPS department
19:12	By not neglecting and actually situating the history of science within its colonial roots, one would be able to address untold stories and unseen perspectives of non-western voices. Curricula should therefore expand and encompass and highlight more and different perspectives and contributions.	Director of science at Kew: it's time to decolonise botanical collections
19:30	Then especially universities and academia, as the place where science is done, should increase the ethnic representations of their staff and students. Because research shows that diversity breeds innovation from which we can all profit. Scientific research should be framed in the context of equality, diversity and inclusion and essentially be reflexive.	The Diversity–Innovation Paradox in Science
19:53	*I think there needs to be a really deep self-awareness of what you are doing that may make a place inhospitable. And really listening to colleagues, like super banal super everyday things that can be overlooked as being an unfair burden. Really thinking through what are the structural inequalities in somebody's life that prevents them from fully working at home. Things like that, really just a simple act of consideration, of really thinking through another person's perspective and then thinking: if I imagine myself in the shoes of this person, what would I actually want and need to feel cared for? It is something as basic as being very considerate..*	*Juno Salazar Parreñas*
20:43	The ethically dubious origins of much of what we call 'science' today are shielded from us as students and as scientists. It seems logical that the first step in decolonising the sciences is to remove the wool from our eyes by learning how to critically question what science actually is and how it is constructed.	
21:02	While it remains unclear what decolonised science would look like, this episode gives you insights about how colonialist ideas have influenced and still affect universities, academia and general knowledge production to this day, and that it is time to no longer view Western science as the sole basis of human logic.	
21:22	Thank you for listening and stay safe.	
21:27	This podcast was produced by Sarah Cannaux, Oliver Zillig, Maheep Tripathi, and Nicole Seimebua (me) in the context of the Master's course "Telling Responsible Stories" at the Technical University of Munich. Our thanks go out to our professor Ruth Müller, Maximilian Braun, our amazing guest Dr Juno Salazar Parrenas, and our university.	

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