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DEBATE

Systemic and Epistemic Racism in the History of Technology

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Concerns about racism—systemic and otherwise—have circulated within the Society for the History of Technology for many years. But it is only in tandem with recent U.S. uprisings that these concerns have taken center stage in discussions about SHOT's present and future. Starting with a series of online, grassroots discussions following the public murder of George Floyd in May 2020, members have been grappling with racism and racial thinking not just in SHOT and among the institutions that employ our members but also within the intellectual infrastructures of our field and of science and technology studies more broadly.

A series of Presidential Panels at SHOT's virtual annual meeting in November 2021 aimed to further identify and confront these issues, with the goal of finding meaningful and effective routes for change. One of these addressed the relationship between systemic and epistemic racism in our field. Because it can be risky to speak frankly about these issues in public, this panel included only established, tenured scholars. Here, we publish an edited version of this roundtable.

Systemic racism is first and foremost an infrastructural phenomenon. Although the term originated in the United States, it has relevance all over the world. Modern sociotechnical systems—be they industrial, legal, medical, political, financial, or environmental—have been built on racism and discrimination. Consider the immediate, extreme violence of the Middle Passage and settler colonialism, the slow violence of offshoring labor and environmental harm (which of course can also be extreme), or the structural

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violence of contemporary urban forms (ditto). In all these instances and many more, sociotechnical systems continue to propagate racism via structures, rules, machines, data, buildings, waste siting, and more. Put differently: the quotidian operation of these systems would produce racist outcomes *even if there were no racists present*. In this sense, systemic racism is a deeply technopolitical matter, one that deserves serious and sustained attention from historians of technology and their intellectual allies. This is *and should be* a central topic for our field.

As Black scholars such as W. E. B. Du Bois, Carter G. Woodson, Charles Mills, and others have long argued, epistemic racism is part and parcel of systemic racism. Systemic racism doesn't just affect who "we" are. It also shapes what we know and how we know it. This isn't only due to unequal education (though that's certainly part of it). More fundamentally, Mills argues, it's part of modern political organization, starting with the idea that a social contract based on "universal" Enlightenment principles will ultimately lead to a just society. The very notion of such a social contract, Mills argues, is premised on refusing to see racial realities—on prioritizing idealized abstractions for some, instead of acknowledging actual lived experience for all. And that's only for starters. Many dominant intellectual paradigms are shaped by assumptions, questions, norms, and affects that emerged from primarily white scholarly communities. Many have a long history of colonial violence behind them, one that can be traced back for centuries. Mills refers to this reality as the racial contract.

This history is what the concept of epistemic racism refers to. Again, it doesn't need active racists to maintain its power. Undoing epistemic racism therefore requires clear, focused, sustained attention. It's a very heavy lift. Our conversation offers one starting point for this long-haul journey. Other steps will follow, both in the pages of this journal and in SHOT's activities more generally.

As Lisa Nakamura notes below, no conversation about race is worth having if it's not uncomfortable. There were certainly challenging moments in the live discussion. Some readers will find elements of the written conversation equally or more uncomfortable. Such discomfort cannot be avoided, however, precisely because systemic racism and epistemic racism run on the (extremely white) premise that unemotional discussions are essential to any form of "objectivity." So there's no end run around the discomfort, no way to avoid the experience. The only way forward is through the unease (or distress, or even embarrassment), with our compass firmly set on more just systems and epistemes. We hope our conversation will be read in that spirit.

Gabrielle Hecht: Let's begin by considering epistemic racism in the history of technology. How do you all see its manifestations and effects?

Edward Jones-Imhotep: One of the things we learned long ago in the history of science and technology is that problems of knowledge are also problems of social order. It was a lesson that we applied to our historical subjects, without always thinking about how it applied to our own disciplinary practices. "Epistemic racism" reminds us that questions about what we know as scholars and how we know it are always also questions about who can produce knowledge, and what kinds of knowledge are considered worth producing.

One of the places I think those assumptions are clearest and most harmful is around Blackness and technology. Evelyn Hammonds and Alondra Nelson have talked about the myth of "Black technological disingenuity," which is part of a wider belief that technology is opposed to Blackness. We recognize that prejudice in our historical subjects, but we haven't always recognized how much that mythology also shapes ideas about professional identity and historical scholarship—which topics "belong" to certain people, and which topics count as "real" scholarship in the field.

I'm currently working with a group of eight undergraduate research assistants at my institute on a project about the Black technological imagination in New York City from the mid-nineteenth to the early twentieth century. We couldn't have imagined the histories we've uncovered in that project—stories that read like something out of a sci-fi or graphic novel. But we were also stunned that they hadn't been written about before. Our discipline has been impoverished for not having those histories and so many others. And one of the main reasons it's taken so long to recover them is because of epistemic racism, which not only made those stories initially uninteresting or unworthy to the main body of our discipline but also produced practices of documenting, archiving, and historical writing that made them seem invisible or unviable as topics. It's taken the concentrated effort of a large research team to begin overcoming the obstacles to this kind of history, which I think says something really important about the kind of efforts and initiatives we need to start addressing: the consequences of epistemic racism in the history of technology.

Chakanetsa Mavhunga: SHOT is a very interesting place to begin this conversation.

It's a very alienating experience if you are Black. There is, for some of us, the historical question of how science and technology studies began, who STS is for and not for, the culture that consumes it, and what other "insteads" are important to the constituencies we come from and are a part of. That part is critical for what STS could become. To people who have no jobs. Who are dying of COVID because of systemic racism in housing, energy, and health care. Who are hundreds or thousands of miles from the home of STS. Who can't afford the $220 registration for a conference in flashy hotels. Whose universities cannot afford subscriptions to *Technology & Culture*.

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A Black colleague of mine at an HBCU once asked me, "So what do you do in STS?" I tried to explain. "Oh, so you study white people and their white toys." The history of science and the history of technology started from a very, very white space, which was very exclusionary. Not too many women were involved. Even when white women started WITH (Women in Technological History), they did not really focus that much on the question of racism.

Today it may not be racism per se that sustains systemic racism, but collegial indifference. I sincerely look forward to the day when my white colleagues resign from committees en masse when there is no qualitative diversity, or when they insist on giving up their seat for a person of color. Indifference may also arise out of the engineering/science training of colleagues (undergrad especially) and its dominance in the SHOT psyche.

I have never bought into this idea that STS is beyond technological determinism because its very racialized Western and white-centric categories defend the exclusivity of the scientific and the technological. In technical institutions, the humanities and social sciences are already seen as ancillary disciplines, where "the real" business is STEM. Add to that some Black guy doing history of African science and technology and let's hear the round of applause! Once you understand that, you learn to develop a thick skin fairly quickly! The assertion of a technological viewpoint that deviates from the Western and white normative perspective becomes a matter of struggle, with its fair share of passive aggressive and overtly hostile responses.

That brings me to the already unfolding danger of white studies of anti-racism—better yet *anti-racist technology*—that reduces an existential threat to us into a mere research topic. I mean the risk of scholars or institutions that inflicted (by ancestry or directly) pain upon our flesh and being, and benefitted from that pain, now simply using anti-racism as an exciting topic that sells, that makes them look good, making even more fame from our pain while investing a pittance (or nothing) in our self-rehumanization.

If you look like me, the image of Africa in the Western media precedes you. You become the walking incarnation of stereotypes about the continent. So when you talk about science and technology in an all or predominantly white space, you don't sound credible or mainstream.

The question then becomes, What is technology? And who can and cannot have technology? What counts, and what doesn't count, as the "real" technology, especially in SHOT? That determines who gets to be the oracle and to constitute the spine of SHOT. The oracles of SHOT!

It's telling that the executive branch of SHOT has not seen too much diversity, a point I also observe in HSS and 4S structures. The committees reflect the racial structures of power. Maybe it's a failure to recruit or to keep people of color interested. But I haven't seen too much diversity in the big committees that really make you feel like you're making a big contribution. Like who wins a prize in the Society for the History of Technology, for example, and who doesn't. Angela Lakwete and Edward Imhotep are

the only ones [Black authors] I know to have received the Sydney Edelstein Prize. And that's because they wrote on subjects that are very legible to white people. In HSS, the same thing goes for Ken Manning, my colleague at MIT, who wrote about the "Black Apollo," the scientist Ernest Everett Just. All of them were writing on "Black men of science" or matters legible as science and/or technology in the Western and white imaginary. Several friends have told me that writing on such subject matter is safe; it doesn't rock the boat, especially before full professorship, well after tenure. So your work is stuck in the Western and white cosmology that defines what technology is, has been.

When you're coming to STS or SHOT, who do you come as? Because a lot of the things that we do as academics are not important to our communities of origin. They're not going to care how many 30,000 degrees you have; communities need to feel the impact of your work more directly. Not so when you come to campus, though. Do you have to leave every fiber of your being—what constitutes you—at home in order to become a proper STS scholar? This question speaks to the structural injustices that we find in our system, the universities where we do our STS, universities that trap its purpose and relevance. But some of us need STS as a transformative tool; that's a different STS.

When we talk about diversity, what exactly are we talking about? In most circumstances we are talking about *quantitative* diversity. "Oh, we have got one here, we've got another one there." We've come to represent these black pimples on the big white elephant of the Western academy.

In my view, epistemology is not enough. It's *downstream* of the cosmological. How we see, how we imagine the world, and how that shapes our ways of knowing and making: those are things that I think we have not grappled with. When this field of the history of technology was established (by industry, technological institutions, academics, etc.), there was already a sense of what "technology" really was. For the most part, founders and their heirs haven't sought to understand technology via what I call transhemispheric thinking: mutually respectful conversations and collaborations among constituencies that seldom meet or talk to each other, in which each brings its ways of seeing, thinking, knowing, and doing to the matrix in order to mutually inform one another. There was no need to ask what technology was; it was a given.

This leads to another serious question: When you study the white things, does that make you feel like—and be seen as—an imposter, a visitor, to STS? Could it be why, when we are in some of these institutions and we are talking about some of these things, we appear marginal? I don't know.

Chandra Bhimull: I want to pick up on this question of legibility, to explore some of what it takes for Black scholars, specifically Black women who grew up working class, to be heard (and read) by you. I think Chakanetsa said it perfectly, "[I] have to leave everything, every fiber of [my] being." For me,

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the cost of having to tuck away who I am and bring out who I have allowed you to train me to be is high.

Look, I am not talking about performance, which I suppose is something all of us do. I am not talking about the fact that all of us reveal parts but not the whole of who we are. To echo James Baldwin, I am talking about the price Black women in the academy pay to be legible. I think Chakanetsa's crucial point about cosmology can help illuminate what I am trying to get at. It forces us to confront our positionality, particularly when we grapple with how we know and who makes known. It rejects ahistorical homogenizing claims such as "all of us."

To riff on Frantz Fanon's well-known words about decolonization, positionality is a historical process. Let me give an example. Someone at a conference once asked me who I write for. (There is nothing innocent about that question.) I said, without hesitation, well, my ancestors. My answer did not make a whole lot of sense to a mostly white Euro-American audience. So, I spent a lot of time—in fact, almost *all* of my allotted time—making myself (not my research!) legible to the people in that room. Sometimes, when I think of that exchange, I think about the time I gave and the time they took. I think about pasts beneath, the histories that undergird their asking *that* question and my answering it, and the reality that such exchanges are never equal. I said, my ancestors, and that untucked me.

We need to think carefully about what it is we see, expect to see, and expect to hear. What (or who) do we expect to see and hear in the context of SHOT?

Asif Siddiqi: I want to follow up on the epistemic nature of the question, extending what Chakanetsa was saying about the imposter syndrome and the perceived relationship between identities and our work.

I think it's important to highlight the links between how we are racially marked in SHOT or similar spaces—as South Asian or African or Asian or Black or brown, whatever terms you want to use—and our own research priorities. And how this relationship is burdened with a kind of weight, no matter what we work on. For example, if we work on something that's perceived to be related to our identities, it's often dismissed as only the parochial interests of scholars working within their identities. And it's not part of the mainstream of SHOT; it's just the scholar doing the work that is expected of them—a kind of "identity scholarship," for lack of a better term. This allows the "normative" SHOT scholars, the ones who dominate the field and the society, to acknowledge but ultimately dismiss the scholarship.

If, on the other hand, some of us work beyond our racialized markers, we can get marked by a different kind of dismissal, as Chakanetsa was suggesting: you're either an interloper who doesn't really belong, or you have the additional demand put on you to learn the language of the dominant discourse in order to be welcomed into the club. In both cases,

it's deeply tiring and enervating. And it's especially true I think for junior scholars, especially women of color, who are negotiating this fraught terrain, between being part of but also not really being welcomed into the history of technology or STS, as they decide on what to study and having to explain the object of their study in relationship to their own identities. White scholars are never called upon to explain this relationship. This is not their fault, of course, but it is a condition of our professional culture. People of color are always hobbled by the burden of expectation in choosing the object of their study.

And I think this is also related to something that was suggested earlier by both Chakanetsa and Chandra, that technology is a term that is coded white. Chakanetsa has written about it much more eloquently and I'm really echoing his work, but ontologically, technology is coded white. I don't mean to say that technology is racist, but that the word itself is laden with the history of colonialism. It functions in many ways on that level, no matter what we choose to write about it, even in settings that are seemingly not about colonialism, that have nothing to do with encounters between the North and the South. Notions of technology function in insidious ways at SHOT. For example, when you write about something that's outside the normal concerns of SHOT (computing, bombs, airplanes, rockets, etc.), i.e., when you write about something that's not part of modernist frames rooted in the Euro-American Industrial Revolution and its legacy, we have to use a qualifier, such as "vernacular technology," or "indigenous technology," as if to suggest that these are not *really* technologies, but because "we" are being generous, we will throw you a morsel and allow you into our club.

In that way, technology is coded Euro-American and white. I think there's a kind of fascination with non-Euro-Americans and technologies, which works in the following dual ways. One way is to say, "Look, the brown people have done the nuclear thing," and as good historians, we must explain how they have figured this out. The converse leads us to say, "Look, the brown people have made that corrugated tin roof and the rickshaw, and how inclusive we are that we have allowed it into our discussions of technology." Either way, such frames delineate and circumscribe the limits of how we can speak about technology. They also reify narratives distinguishing the normative from the exceptional.

But most importantly, they dampen any kind of enthusiasm that one might have to think at a critical level because, as a person of color, one is putting so much energy just trying to get into the space, just to be heard. Instead of devoting time to studying the actual question, you are putting labor into framing the problem so that it will be legible and acceptable to the dominant discourse about "technology."

Lisa Nakamura: I am going to move to another, related issue around the assumptions about race that are baked into our systems, and what it means

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to have an uncomfortable conversation about race in any context, but especially this one.

I have a wonderful colleague who is a scholar of color, and he said in reference to Zoom, "My home used to be the only place where I did not have to encounter white people. And now white people are in my house several times a day." And likewise, some people in this Zoom room may not have people of color in their home. Maybe they never have, or maybe not very often. So one question that presencing brings up is, are we in fact able to have the kind of uncomfortable conversation about race in the absence of bodies?

I don't think it's worth having any conversation about race unless it's deeply uncomfortable. I'm in a department of ethnic studies so that's what we do. However, these questions about technology don't enter in, because, as Asif was saying, it's not part of our field that technology is circumscribed in such a narrow way. However, it's then not called technology; it's called culture. So to speak to this question about what dangers lurk in diversity efforts, as Chakanetsa was saying, anti-racism is the new social justice, is the new silver bullet. It seems that today, diversity efforts are primarily geared at not getting sued.

I've spent most of my career talking about digital embodiment and why there's so much investment in things like the metaverse (which, as you know from the last twenty years, is just a different name for what was called cyberspace; in the '90s it was also called virtual reality) toward the same end, which is to make race less uncomfortable for white people.

Here's one example: there's a metaverse-serving company called Mursion that has raised more than $35 million and has ninety-five employees. It specifically creates Black and female avatars that sound "precisely like the people that you encounter at work, and with whom you may have negative interactions," according to their chief technology officer! This becomes critically important when issues of race, gender, and age matter to the simulation. Their cofounder writes, "There is so much nuance in interpersonal communication, especially in stressful circumstances. At some point we may not need humans." Now that's something we've heard before! "But for the foreseeable future, we're depending on our simulation specialist to deliver the cognitive empathy that AI can't do."

So I ask, can we in fact have the uncomfortable conversation about race we need to have in the absence of bodies, in the absence of accountability? In the absence of physical embodiment? Especially as, at this moment, the deniability that the corporate world needs is being built in the form of Black, brown female avatars that are mostly played by white people. The idea is that you don't know because you don't *need* to know, you're not *supposed* to know.

Chandra: One of the things I've always liked about the history of technology is the wildness, the wild thinking that is at play, particularly at SHOT. I am

thinking about what Suzanne Césaire and Jack Halberstam had to say about wildness—about the powerful unsettling delights of going and being wild.

As Asif was talking, I started to think about junior scholars of color being heard. I started to wonder whether wildness is safe. When we're at conferences, let's say, bouncing around our wild thoughts, playing with ideas that may or may not have a future life in scholarship, what is responsibility?

Let's talk about the politics of citation. When we leave such conferences and whatnot, what it is we're doing—*especially* to junior scholars of color—when we go about our business, have ideas, and create scholarship without checking who our sources are. What are we doing when we don't cite the very people (and it's usually people of color) who did the labor in the rooms where "our" ideas started? I think a lot about Black erasure, the constant erasure of Black women from the very work that eventually becomes the next hip thing in the discipline. Or about Black silencing, the ways in which it is unsafe at times to speak about what we are thinking or to share an idea we are playing with. I feel like I can't play anymore, because there are all these thought thieves running around.

I think we need to talk about what is happening with our wild, wild thinking. A *white*washing of the ideas happens during conferences. What is the responsibility that white scholars have when it comes down to holding these thought thieves accountable? I think it's amazing that sometimes I can say one thing, and that thing is met with a "yeah okay cool" and dismissed. And a white guy can say almost the exact same thing, and it is picked up, and you would think it was like the newest, most brilliant thing ever. And I'm like, wait but I just *said* that. I said it, and I left it *open*, so that we could *think* together about it. And now I can't even think with y'all, because it's not safe.

I just want to put that out there as we think about getting dirty and epistemic racism, getting dirty and doing the work. And not just talking about it, but *actually* starting to look at who's up in your bibliography. Who are you citing? Where's it coming from?

Gabrielle: Yes! And then ask, who else could you be learning from? How do you keep that brain of yours constantly open? We're supposed to do this as intellectuals, but many of our institutions discourage real openness. This is especially true at elite U.S. universities, where tenure is premised on getting good letters from faculty at other elite places, often the very faculty whose work you may be challenging (or dismissing, or ignoring). Such institutions often accompany this stance with a heavy dose of self-delusion. They insist they're encouraging openness and remain willfully blind to the extent to which they're actually circumscribing thought by putting work in preexisting buckets, especially at tenure time. These sorts of practices lead to tame thinking and actively inhibit or marginalize wild thinking (I love Chandra's phrase!). Which, in turn, leads to the downward spiral that we've been talking about.

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As we were turning our live conversation into a written dialogue, I witnessed some striking examples of issues raised by Lisa and Chandra. We began by downloading our session's Zoom closed-caption text, which I then edited by referring to the recording. As we saw during the live session, this CC technology is not calibrated for global English, for accents and idioms from places other than societies where Anglophone settler colonialism is living its dream. Yet the CC does splendidly well with upper-class accents from the imperial mother ship. Sure, CC makes errors with all accents. But the difference in error rates was dramatic—we're talking orders of magnitude. (My personal favorite was CC's rendition of Chakanetsa's "Bruno Latour," below, as "granola to.")

This is analogous to the difficulty Zoom had with Black faces against virtual backgrounds. I was in weekly meetings with a Black colleague last year; she went through dozens of virtual backgrounds in an effort to find one that didn't display her with large parts of her face missing—which, as we know, is part of a long history of photography being calibrated for whiteness.

The errors went beyond this. In a couple of instances, the CC technology failed to capture entire sentences. The most grimly ironic of these errors rendered Chandra's first utterance of "Black erasure" with a flat-out racist locution. It completely dropped the phrase that immediately followed ("the constant erasure of Black women from the very work that becomes eventually the hip thing. Or Black silencing."), instead leaving the racist locution on screen. Talk about proving the point!

I can immediately hear the objections. CC drops stuff all the time; that was just a coincidence; you're reading too much into a tech glitch. To which I say (standing on the shoulders of the many who've been arguing this for years), the whole point is that these issues are *systemic*. As many scholars have argued, including Lisa, algorithms aren't autonomous. People design them, and in doing so, they typically take white faces and white speech as normative. Black faces and speech are afterthoughts, things that need "accommodations" in the "basic technology," as though Blackness itself was a disability. With designs like these, experiences of racism don't require individuals to target you with their racism, because white supremacy is built in from the start.

Chakanetsa: I just wanted to add to what Chandra is saying. We are supposed to slave our way through Bruno Latour and Thomas Kuhn and all these ancestors: white ancestors of white traditions. Then that becomes canonized as STS. Nobody ever cites our work. When it's cited, it's in a very flimsy way. A snippet, talking about things that are so banal and stupid.

Nobody really gets to the substance of what we are saying. It's at such a level that it's violating, and I'm almost like, please stop quoting my work. OMG! It's the kind of academic insult you find if you check very carefully. Even in the African context: look at how many African scholars have been cited by a white writer of Africa. The number is so miniscule compared to

the white writers (the "Africanists," or those who study us, the Africans). Then Google Scholar does its algorithmic magic, and lo and behold the bibliometric measure of *impact*, measured in citations, without regard to the meanings of impact of those studied.

To me, the politics of bibliometric impact doesn't mean much. It's worthless because it depends on how many networks of white folks you have who will cite your work. It has *nothing* to do with the impact whatsoever! If your networks read no books, or can't afford them, sorry, you have no impact!

And we know that when you teach a class with a white colleague, or if a man is teaching with a woman, the evaluations are not likely to be the same. Don't listen to me; look at the data. It's the same when you coauthor something. Sometimes to the extent that you find even if the white colleague is the last author among many, and you are the first author, you're not cited—they prefer to cite that white (or white-sounding) one.

I have never understood the epistemic violence of manuscript review in which I am asked to cite a white writer of white things, who has never been to Africa, whose concept I am forced to start from in order to theorize an experience of mine that they are completely alien and oblivious to, which I have been since before my birth. I have never understood it; why are we doing this? Why are we teaching our students in the introductory class on all these white people from Fleck to Popper, all these nice names that you find to be recognizable, but never anything from anywhere else?

Look at the introductory courses. All of them are trying to tell you that anything you think is technology or science in your own traditions is just a fable in fiction. Never happened. This is *the* technology. It's asking us to commit suicide to our own identity and be reborn as white people. This is the violence we are committing when we do what we do.

Gabrielle: I wager that a lot of women in this audience recognize what you're saying about citation practices, and the expectation that they'll pay homage to white male thinkers (the ones who made the establishment in Euro-America what it is). I have a personal example that speaks to Chandra's point about "thought thieves." Outside STS, people who write about technopolitics typically cite only Timothy Mitchell; among those who do cite me, most do so only in the footnotes, where they give the 2009 (second) edition of my book, masking that the first edition appeared four years before Mitchell's book. The result is that there are many scholars out there who honestly believe that my use of technopolitics derives from Mitchell's. Because we're all supposed to behave as "modest witnesses," I have refrained from discussing this in public for fear of seeming petty. (Though I confess having succumbed to immodesty on a few occasions, when young men with poor citational practice have, jaw-droppingly, asked for my patronage in the form of advice, or a reference letter, or a blurb for a book they insist was "inspired" by my work even though they don't cite it. This girl has her limits.)

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But let's not deflect the conversation away from race onto the now-more-comfortable subject of gender. I just hope the analogy and example can help bring the point home and show how personal it can become. White women can transpose their experience with gendered citational politics, then think about how much more violent these become with each layer of excluded identity. *That's* what Kimberlé Crenshaw and others mean by intersectionality. For Crenshaw and her colleagues, intersectionality isn't a vanilla designation for the fact that we all sit at a crossroads of varied identities. That's the whitewashed version. Rather, intersectionality offers a way of talking about how oppression (bio)magnifies when you add layers of *minoritized* identities atop each other.

Asif: I really appreciated Chandra's and Chakanetsa's comments about the politics of citation and how insidiously it works when you are cited for something utterly trivial and there's no engagement with your work.

And I think this is part of a system that is in fact built into this discipline, but probably history or any humanities discipline in general, the way in which citation works as a kind of check-off. We checked off this work or that work of the nonwhite scholar, and therefore we don't have to engage further. This gets me to the larger issue of the function of what I think of as "gestural politics" of scholarship, the token gestures that are built into our discipline and our profession, that function as a kind of checklist of acknowledgments while nothing fundamentally changes.

There's this whole discourse about late-stage capitalism and how it encodes dissent into its functioning. The work of the late Mark Fisher, particularly his *Capitalist Realism*, has really helped me think through this notion, that one of the features of our type of capitalism is that dissent against it, especially in epistemic terms, is actually part of the system. It is, in fact, encouraged. Capitalism *depends* on a kind of formalistic dissent because it reinforces the illusion of plurality of opinions, a "marketplace of ideas," while enacting zero changes in the structural order of power. This often manifests itself in the bureaucracy of critique—discussions, roundtables, white papers, resolutions, committees, and so forth. Such a system allows us to celebrate the democratic norms of our community (or society) while avoiding true change, or in some cases dismissing action toward substantive change, as "disruptive" or "violent" and "a threat to stability."

Likewise, when we talk about racism in our discipline, actively speaking out and identifying what it is, that's actually part of what sustains the existing norms that constitute the unequal and exploitative aspects of the system, because it allows us the *illusion* of dissent. The gestural protest, "Yes, we're talking about anti-racism, blah blah blah. After all we have a panel at SHOT to talk about racism!" This allows a real-world illusion of free exchange of ideas. We can pat ourselves on the back and continue to prop up the system, because we've talked about anti-racism. This is not just

the system accommodating its critics. In fact, the system actually depends on such critique to continue to propagate in its encrusted form without any substantive change.

I think you noticed some reluctance on the part of some of us to participate in this panel because of this sense that this would just be one more cog in that wheel. I'm not saying this as an act of surrender so that we give up. I'm just saying this as a cautionary note: speaking out against all of this within SHOT's existing structure may actually strengthen that structure, because now it can check this off and go on about its business.

Gabrielle: That's an incredibly important warning, one we absolutely must heed carefully. SHOT needs to see this conversation as a launch pad, not a destination.

Edward: I just wanted to pick up on something that Chandra mentioned because I love her idea about wildness. It strikes me that it pairs beautifully with the comments from Chakanetsa and from Asif as well. On one hand, it's important to realize that panels like this are a great start. But they can never be enough. They have a performative quality, but they don't change anything in and of themselves.

And so, I love the idea of putting in place precisely the kinds of structures that create the support we need to truly transform the discipline, to open it up, to begin to radically question the kinds of practices, the kinds of subjects and places that support that kind of work at the center of our discipline instead of on the fringes.

Gabrielle: Maybe this is a good time to turn to questions about alternatives. How can we move beyond the current situation? Not that we're done talking about race: I'm not saying, "Hey, we did it, yay, now we can move on." But since talking is never enough, what else should we be doing beyond continuing these conversations?

Chakanetsa: [Sighs, deeply.] I don't know. In SHOT, I am very careful not to do these things because the experience I've had is very alienating. It's like you are operating on the fringes, just trying to clothe this nice big white frog and make it look beautiful. And yet you *feel* the structure of violence: every time there is a panel, you look at it and you don't belong.

So, I'm careful not to do that. There is a sense of foreboding that warns a graduate student who is trying to do what drives them—what they are passionate about, why they came to study technology in their own cultures—a sense that "If I say this, I'll get into trouble. Nobody will give me a tenure-track job." That's the feeling. I was fortunate to have faculty that really encouraged me to think on the borders of STS and Africa, to really take African ideas and makings seriously. It doesn't happen everywhere. So one of the first starting

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points is, how do we deliver a graduate curriculum that *enables* our protégés? Because they are the future! We are on our way out!

My vision for the history of technology and STS in general is to create transhemispheric thinking, in which we are no longer loyal to meanings that are hemispherically defined or limited. Western-centric, South-centric: allow the totality of our knowing to come to a kind of parliament of knowledge, a commonwealth of knowledge, in which we come to conversation without a first-among-equals or a referee—the hierarchy that might say, "This is technology or else I'll shoot you" (by which I mean your career).

The idea, always, is to look for solutions that transcend cultures, and to accept that cultures survive as genes, as societies because they were able to surmount challenges. And that surmounting challenges doesn't simply require tacit knowledge or some tinkering or happenstance. It comes in view of something upstream, cosmological: a capacity to think/to know/to apply/to learn through doing that cannot be packaged à la Latour's actor network theory or Thomas Hughes's systems or Donna Haraway's cyborgs. No! These scholars have spent little, if any, time in the South. So forget them. These are not mere semantics; to "be" is deeper, it means seeing, feeling, knowing, and making from. To write from the sensibilities and relevance of "there," not simply mobilize "there" as fodder for the theory of "here."

Let students think in the registers that emanate from their local nonwhite cultures. They don't have to find commensurate categories. Absolutely not! Unshackle these kids; set them free. I'm talking here to fellow faculty: do not do this, you're destroying students.

When I was in graduate school, we didn't talk about climate change much. But these kids will be talking about a planetary issue, no longer world issues. Dipesh Chakrabarty talks about this in his new book. It's planetary now! This hemispheric thinking, this monosyllabic thinking, this very arbitrary top-down view of what the technological is: it's not going to wash! Let's just be clear about this.

Are we to say that the cultures of scientific thinking and technology thinking that made this world unsafe from climate change can now be counted on to somehow, miraculously, save us all from the catastrophe that they created if left alone? It is a fact that white anthropology, science, and engineering variously conceived, agitated for, enabled, and built the colonial project and its racist infrastructures; are we to assume that they are the right knowledge systems to create anti-racist, decolonial, or noncolonial futures? For me, the answer is NO. We need to assemble the multiplicities of our expertise and ways of seeing, into a transhemispheric dialogue. And within that space, offer classes and platforms capable of informing our students from wherever they are.

Some of us are already doing this in the Global South Cosmologies and Epistemologies Graduate Super-Seminar (with Geri Augusto, Walter Mignolo, Dilip Menon, Carl Mika, Gloria Chacon, Oyeronke Uyewumi,

Shadreck Chirikure, Minakshi Menon, and others). The course starts with the Global South because our conversations have tended to insist on the Western and white as obligatory conceptual passage points; we engage the West, put it in its proper place, on our way to a worldwide, transhemispheric conversation. I'm not talking about something in the future. I'm talking about something that can be accessible to students right now. SHOT and other bodies have the capability to work with us to create such a platform.

Gabrielle: Transhemispheric seminars and many other insights in there! Let's go through one more round of ideas for what we should be doing. Lisa, will you start us off?

Lisa: Oh, it's so much easier to say what we shouldn't be doing than what we should be doing. I think there's some interesting conversation in the chat around the kind of cosmetic diversity that plagues a lot of different efforts and a really good question about how to create new forms of legitimation. You know, why are certain things legible? Because only certain people are allowed to be readers.

How do we make work from nonwhite scholars legible? Or why doesn't the kind of scholarship we make legible include them?

I think journals and organizations need to find different kinds of readers, so that's not really a direct answer. I know I personally don't have time to review more articles, that's for sure.

Gabrielle: I think that your comment speaks to some of what we heard at the opening plenary session on community-engaged research from Alesia Montgomery, who kept pushing us to think in structural, systemic terms. Yes, we have responsibilities as individuals. Obviously! I wouldn't want to minimize that. But that's not all there is to it. To reiterate, that's the whole *point* of the concept of systemic racism: that it's systemic, that it operates even without an evil racist charlatan behind the curtain (though let's be honest: there are plenty of those too). Structural, systemic, epistemic: to use a key term in our field, racism is *infrastructural*.

That means that we don't have one single target—ourselves, or the institution for which we work; rather, we have many targets. Hard choices must be made: we can't do everything at once, and many measures have and will continue to meet with resistance. But there's no waiting around for things to get better: we need to work on the systems that we engage with most closely, where we stand a chance of achieving improvements.

Asif: I'm fearful that whatever we do—let's say, within the confines of SHOT—the labor falls to the people of color, because, well, we're going to leave it up to you to figure it out and we'll just go away; when you've figured it out, then come and talk to us. You know, that's the way things have gone and I'm

fearful that would end up with little committees of . . . I'm not saying that we shouldn't try. I know that I've been the fatalistic one that we should just give up and go home. I want to be optimistic, but I'm wary of the same old solution.

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Edward: I like Chakanetsa's idea about transhemispheric collaborations. But I also think there's a lot that can be done locally.

As a very concrete practice, my research group has been inviting graduate students who are working on topics adjacent to ours or that can inform them, and we've paid them honoraria. It provides financial support and recognition for the work of the graduate student; and for the undergraduate research assistants, it exposes them to some of the most original and imaginative work being done in the field.

Another thing I've started to do at my institute is to create book manuscript workshops for racialized scholars and those working on underrepresented topics. The idea is to offer the spaces and some of the resources of my institute to support the development of these fields.

I was a little shocked at yesterday's [HSS] session on reparation and redistribution, which Dana Simmons organized. I expected many more department chairs to attend. These are the people best positioned to start the task of redistributing resources and effecting reparations. They weren't even in the room. I would encourage people to talk to their chairs, to suggest initiatives, even small ones. And I'd encourage racialized scholars to take on leadership positions if they have the chance. I think those positions hold the key both to the transhemispheric associations that Chakanetsa was talking about and to the more local transformations that Chandra was mentioning as well.

Asif: Well thank you. You know, I'm ready and I'm here to do the work. If that's possible. Yeah.

Chandra D. Bhimull is associate professor at Colby College, where she teaches in the Department of Anthropology and the African-American Studies Program. As an anthrohistorian, she combines archival and ethnographic methods and carries out her fieldwork in the Caribbean, Europe, and the transatlantic skies. Her first book, *Empire in the Air: Airline Travel and the African Diaspora* (NYU Press, 2017), examines the racial politics of flying. Among her other works are a coedited volume on transdisciplinarity and creative nonfiction essays about air culture and deportation flights. She is currently writing a book about race, sense, and scale.

Gabrielle Hecht is professor of history and (by courtesy) anthropology at Stanford University, where she serves as senior fellow at the Freeman Spogli Institute. Her new book, *Residual Governance: How South Africa Foretells Planetary Futures* (Duke University Press, 2023) examines the entwined residues of apartheid and mining in Johannesburg. Previous award-winning books include *Being Nuclear: Africans in the Global Uranium Trade* (MIT Press & Wits University Press, 2012) and *The Radiance of France: Nuclear Power and*

National Identity after World War II (MIT Press 1998/2009). She currently serves as vice president/president-elect of the Society for the History of Technology.

Edward Jones-Imhotep is director of the University of Toronto's Institute for the History and Philosophy of Science and Technology (IHPST). His research focuses on the historical intersections of science, technology, and modern culture. His first book, *The Unreliable Nation: Hostile Nature and Technological Failure in the Cold War* (MIT Press, 2017), won the 2018 Sidney Edelstein Prize. His current book project—Unreliable Humans/Fallible Machines—investigates how people from the late eighteenth to the mid-twentieth centuries saw machine failures as a problem of the self: a problem of the kinds of people that failing machines created, or threatened, or presupposed.

Chakanetsa Mavhunga is professor of science, technology, and society at MIT. His latest book, *Dare to Invent the Future: Knowledge in the Service of and through Problem-solving*, will appear in 2023 in the MIT Press Global South Cosmologies and Epistemologies Book Series, which he edits. His professional interests lie in the history, theory, and practice of science, technology, innovation, and entrepreneurship in the international context, with a focus on Africa. Chakanetsa joined MIT as a tenure-track assistant professor in 2008 after completing his PhD at the University of Michigan. He is the author of *The Mobile Workshop: The Tsetse Fly and African Knowledge Production* (MIT Press, 2018), *Transient Workspaces: Technologies of Everyday Innovation in Zimbabwe* (MIT Press, 2014), and the editor of *What Do Science, Technology, and Innovation Mean from Africa?* Chakanetsa is currently editing a second volume, *Everyday Design-MakerX: From the Margins to the Center*, which positions everyday life as a design-maker experience, with significant implications for design practice. He has also founded and convenes The Global South Cosmologies and Epistemologies Initiative, which offers an annual Graduate Super-Seminar cotaught across the world by a distinguished cast of Global South theoreticians and design-makers.

Lisa Nakamura is Gwendolyn Calvert Baker Collegiate Professor in the Department of American Cultures at the University of Michigan. She is the founding director of UM's Digital Studies Institute and has been writing about digital media, race, and gender since 1994. Her book, *Digitizing Race: Visual Cultures of the Internet* (University of Minnesota Press, 2007), won the Asian American Studies Association award in Cultural Studies. Most recently, Nakamura and other members of the Precarity Lab published *Technoprecarious* (MIT Press, 2020), which traces increasing precarity among populations disproportionately affected by the forms of inequality and insecurity generated by digital technologies.

Asif Siddiqi is professor of history at Fordham University, where he teaches and writes on the history of science and technology in the nineteenth and twentieth centuries, with a particular focus on communities and practices operating globally and under conditions of stress and scarcity. His most recent book is *The Red Rockets' Glare: Spaceflight and the Soviet Imagination, 1857–1957* (Cambridge University Press, 2010). His current work explores postcolonial space infrastructures in the Global South, the intersection between scientific expertise and large-scale incarceration in the history of the Stalinist Gulag, and the "normative" practices of scientific secrecy.

Bibliography

Baldwin, James. *The Price of the Ticket*. New York: St. Martin's, 1985.

Césaire, Suzanne. "The Domain of the Marvelous." In *Surrealist Women: An International Anthology*, edited by Penelope Rosemont. Translated by Erin Gibson. Austin: University of Texas Press, 1998.

Césaire, Suzanne. "Surrealism and Us." In *The Great Camouflage: Writings of Dissent (1941–1945)*, edited by Daniel Maximin. Translated by Keith L. Walker, 34–38. Middletown: Wesleyan University Press, 2009.

Crenshaw, Kimberlé. "Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics." *University of Chicago Legal Forum* 140, no. 1 (1989): 139–67.

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Du Bois, W. E. B. *The Souls of Black Folk*. 1903. Reprint, Oxford: Oxford University Press, 2007.

Fanon, Frantz. *The Wretched of the Earth*. Translated by Constance Farrington. New York: Grove, 1963.

Fisher, Mark. *Capitalist Realism: Is There No Alternative?* Winchester: O Books, 2009.

Halberstam, Jack. "The Wild Beyond: With and For the Undercommons." In *The Undercommons: Fugitive Planning and Black Study*, edited by Fred Moten and Stefano Harney, 4–7. Chico: AK, 2013.

Mills, Charles. *The Racial Contract*. Ithaca: Cornell University Press, 1997.

Nelson, Alondra. "Introduction: Future Texts." *Social Text* 71, vol. 20, no. 2 (2002): 1–15.

Woodson, Carter Godwin. *The Mis-education of the Negro*. Washington, DC: Associated Publishers, 1933.