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Title

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Permalink https://escholarship.org/uc/item/6wk0x2hg

Journal Journal of the History of the Behavioral Sciences, 57(1)

ISSN

0022-5061

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Publication Date 2021-02-01

DOI

10.1002/jhbs.22055

Peer reviewed

eScholarship.org

DOI: 10.1002/jhbs.22055





Guns, germs, and public history: A conversation with Jennifer Tucker

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Abstract

In this wide-ranging conversation, historians David Serlin (UC San Diego) and Jennifer Tucker (Wesleyan University) discuss the role of material culture and visual media in shaping how museums communicate histories of science and technology. Tucker describes recent a public history project focused on 19th-century histories of firearms and gun regulation in light of contemporary debates about the Second Amendment "right to bear arms." Serlin and Tucker conclude by speculating about possible curatorial directions for a future public history exhibit focused on the social and cultural impact of the COVID-19 pandemic during 2020.

In March 2020, in the midst of the global lockdown from the COVID-19 pandemic, one of the institutions that announced that it might not survive the economic downturn was the Edward Jenner House Museum and Garden in Gloucestershire, England. The Jenner Museum honors the work of the scientist who, in the 1790s, injected local farmers and himself with the "cow pox" (smallpox), thus ushering what would become the era of the vaccination—the word itself derived from the Latin for "cow."

The irony of the museum devoted to history of the world's first vaccine being closed by a global pandemic without a viable vaccine was not lost on Jennifer Tucker, an associate professor of history and of science and society at Wesleyan University and cochair of the editorial collective for the *Radical History Review*. Tucker has an active interest in public history; among other things, she has been involved in a project focused on recovering the 19th-century history of gun regulation and its omission from contemporary debates about the Second Amendment "right to bear arms." She is also interested in the political and curatorial possibilities of exhibiting material objects drawn from the long history of science and technology. Tucker holds an MPhil in History and Philosophy of Science from the University of Cambridge, where she was a Marshall Scholar, and a PhD in Science, Medicine, and Technology from Johns Hopkins University.

David Serlin spoke with Tucker via Zoom in May 2020.¹

David Serlin: How did you become interested in public history given your training in history and philosophy of science, a discipline not usually identified with public history?

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Jennifer Tucker: I guess I was interested in public history before I knew what it was. I loved going to museums, but as someone who grew up in the Midwest I also became interested in public history by going to the state parks around the country. One example that comes to mind is a family trip to the Great Plains State Park in Oklahoma, which is basically a large field covered with salt. It doesn't really look like much when you show up there. We used glass jars to scoop up salt and bring them home with us. I also came to understand that there were many layers of history in that state park. It was a place where people of the Osage Nation had had their hunting grounds. Later, during World War II, it was used for military operations to practice strafing and visitors can still find these traces of these World War II practice runs. Those are the kinds of things that made state parks seem like an incredible resource for public history.

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David Serlin: That's an interesting perspective. For many people, the practice of public history has been associated with marginalized communities, social movements, and cultural practices organized around the public sphere. For you, the state or national park systems are also mediums of public history, bringing together question of public space and public access with the natural world. Although you've mentioned some human presence—Native American tribes, the military—you're also describing a form of public history that includes but long predates the Anthropocene and does not necessarily rely on human actors.

Jennifer Tucker: Yes, it's possible then to see multiple forces of history, including geographical and environmental ones, in that "place of knowledge." The photographer Richard Misrach and landscape architect, Kate Orff, in their collaboration for their book *Petrochemical America* (Misrach & Orff, 2014), use the word "throughlines" to describe the reciprocal influences of nature, and human and nonhuman animals, within that kind of ecosystem. Take for example Misrach's photograph of an empty sugarcane field. About this image, he said, "We started to think about this very simple photograph in many different dimensions—going back in time and understanding that this was a former indigo plantation that then became sugarcane, and although it was empty today was once teeming with slave labor and then with plantation workers." Their focus is the chemical corridor in Louisiana, an area of heavy chemical industry since the late 19th century. Their photos show scenes of industry built on, and among, living communities with their own histories—and the mixture of humans, industry, and animals. Their goal, as they describe it, is revealing the complexity of environmental systems and stories embedded in the landscape; or, searching for "throughlines" (Misrach & Orff, 2012). They also sought to learn of 'stories about zones around the world that are now going through the same cycle of extraction-based industry, waste, displacement, and resistance, whether in the Nigerian Delta, or the rice fields and fishing grounds of Myanmar.

A lot of my current research is at the Catalyst Science Discovery Centre, which occupies a former tower on the site of a 19th-century chemical factory in Widnes, Cheshire, near Liverpool. It's a reminder that all of our communities have an opportunity to literally make history by remembering and reflecting on the legacies of our place's complex layers and heritage. It also offers a rare opportunity to reflect momentarily on a place with a significant part in the history of the world's second industrial revolution; on the determined people who made their lives there; and on the complexity of environmental systems and stories that are embedded in the landscape—long after their physical traces have mostly disappeared (Tucker, 2018).

David Serlin: Is there a project that you're working on right now that relates to public history?

Jennifer Tucker: Currently, I am doing research for a book about the heavy chemical industries in 19th-century Britain, examining topics such as labor and scientific innovation. One thing I'm interested in is how photography was used both to record the effects of industrial waste and hazards, and was itself a product of the chemical industry and a form of chemical waste (Tucker, 2019a).

For me, this project has become a way of looking at old alkali and modern landscapes, the role of history and heritage in contemporary representations of the stories of the Victorian chemical industry and its legacies. And small independent museums, like the Catalyst Science Discovery Centre, are very interesting sites for thinking about the ways that places connect communities and how local institutions shape what gets remembered and what gets forgotten (see Figures 1 and 2).



FIGURE 1 Exhibit featuring sculpture of Victorian-era chemical worker at the Catalyst Science Discovery Centre, Widnes, England. Photograph by Jennifer Tucker (ca. 2019). Reproduced by permission [Color figure can be viewed at wileyonlinelibrary.com]

Today the region around Widnes is still a major manufacturer of chemicals, and there are ongoing efforts to try to clean up the physical, polluting traces of the industrial past. At the same time, as a historian, I am trying to excavate those traces for my book. In the photographic documentation of specific places and pollution-events, we see resources for a broader social history of the region, and one that uses photography as a means to explore how photography offered both a new form of political speech and a new way of imagining Britain's place in the industrial world.

David Serlin: It's interesting that you had these formative experiences of the "natural" world and, through state parks, saw hundreds of millions of years of development; and then, as you've gotten older, you began to focus on



FIGURE 2 Wood engraving (by Harry Piffard) of a chemical worker poisoned by chlorine gas during alkali manufacture, originally printed for Robert Harborough Sherard, *The White Slaves of England* (London, 1897) and later used in magic lantern lectures, ca. 1900. Lantern slide image reproduced courtesy Martyn Jolly [Color figure can be viewed at wileyonlinelibrary.com]

translating those experiences into your historical work on chemical industries or photography or other technologies that allowed you to navigate, or measure, or quantify data from the "natural" world. It's as if you were trying to figure out how to translate the natural world, the phenomenological world, through technical or disciplinary languages. There's something about studying science and technology that seems, for you, to bridge what piqued your interests years ago and where you wound up professionally many years later.

Jennifer Tucker: Yes—I suppose it's a recognition that the history of ideas or the history of knowledge is not just something that comes out of people's heads. It's about the relationship between practice and theory that is so critical to thinking about knowledge production. And this connection between practice and theory is also at the heart of public history: wanting to understand objects and ideas by developing a set of techniques or tools for thinking critically about society, historical change, and the different knowledges that make places meaningful both personally and as part of larger stories.

In graduate school, my advisors worked with museum collections. Robert Smith is a historian of astronomy and spaceflight who created exhibitions at the Smithsonian's National Air and Space Museum in Washington, DC; Jim Bennett, one of my advisors at Cambridge, is an authority on the history of scientific instruments and the previous director of both the Whipple Museum of the History of Science in Cambridge and, later, the History of Science Museum at Oxford. Using the museum's collections, he teaches students how instruments work and what difficulties were faced by historical users of those technologies. Bringing mathematical instruments into the story of navigation in a hands-on way like this is a way to think about the different kinds of knowledge that were required of ordinary people on a ship. Learning about and actually handling 16th-century navigation instruments became a way to learn about the intellectual worlds of sailors and to understand what they were up against in trying to figure out: How do we navigate to where we want to go?

You could think about it as a question that many museums are always asking. Museums are interested in putting theory about the social together with telling stories and collecting artifacts, especially those stories and artifacts that aren't necessarily being collected or told in some of the bigger museums. The group that worked on the District Six Museum in Cape Town is a great example. It is a museum that grew out of a community effort to tell the story of District Six, a vibrant multiracial neighborhood of working-class people that was forcibly segregated during the 1970s by the apartheid regime. The museum is reclaiming that space through counternarratives to the larger national museums and by including community exhibits and projects (Rassool & Slade, 2013).

David Serlin: Can you tell me a bit about your public work on the 19th-century history of guns and its relationship to current debates around the Second Amendment and the "right to bear arms"?

Jennifer Tucker: In 2016, I organized a conference of historians, legal scholars, and museum curators on the topic of the contested legal history of the Second Amendment, which led to a book which came out last year titled A Right to Bear Arms? The Contested Role of History in Contemporary Debates on the Second Amendment (Tucker, Hacker, & Vining, 2019). The conference, "Firearms and the Common Law Tradition," held in Washington, DC, was cohosted by the Smithsonian Institution's National Museum of American History and the Aspen Institute. It brought together historians on opposing sides of the Supreme Court's 2008 Heller decision which, for the first time in its history, interpreted "the right to bear arms" as an individual right, rather than a collective one.

It was one of the first times that the historians and legal scholars involved in the debate over the Second Amendment exchanged their views face-to-face, with precirculated papers. The inclusion of historians who study the use of firearms across a range of historical periods (early modern England, colonial America, frontier west, etc.) was unusual in such a gathering, as was the participation of several curators of historic firearms collections in the UK and North America. By bringing these people together (many for the first time) it informed historians about the legal stakes of the topic and also ensured a place in the discussion for historians who work on this topic—and to encourage more research.

The event also included a workshop with museum professionals representing historical collections of firearms. I think that historians of technology and museum curators have something to offer but are not always included in the debates over guns. As a historian of science and technology I am aware that changes in technology (the shift

from flintlocks to AK-47s, a doubling of the velocity of bullets, and so forth) are often overlooked in debates about the past. The Heller decision specifically rejected the idea that the Second Amendment only protected flintlocks, but it also accepted that restrictions on private ownership of fully automatic weapons (machine guns) were acceptable.

David Serlin: Who attended this workshop? I imagine that not many of these folks have spent much time in the same room, let alone working together on a common theme.

Jennifer Tucker: The curators who attended the workshop came from several museums including the Cody Firearms Museum at the Buffalo Bill Center of the West in Wyoming, the Smithsonian's National Museum of American History, the Autry Museum of the American West in Los Angeles, the Yale Center for British Art, and the Royal Armouries Museum in England, among others. A round table conversation in which these curators shared their thoughts about public history on guns was published by *Technology and Culture* (Tucker et al., 2018). A curator from the National Rifle Association (NRA) Museum also participated in the discussions, though he withdrew from the published round table.

Some of the questions that we explored were: How do firearms differ from other types of material culture in relation to their own historical contexts, and in how they are understood by museum visitors (and curators)? Do museums permit or encourage critical research? What can be done to improve museum/researcher relations? What is the place in firearms museums of the depiction of gun violence? How do museums give insights into history that differ from the accounts available in books? The curators were asked, for example, to select an object or picture from their collection that in their view best expressed the current controversy over the Second Amendment.

The enthusiastic engagement of the curators in the roundtable convinced me that the historical study of gun technologies merits more attention than it currently receives. The study of guns and their social and cultural practices is a perfect example of the importance of inserting the study of technological developments into the history of politics and society. After the seminar, several of the curators formed a nonprofit association of firearms history museums and historians to continue the conversation, which they invited me to join as vice president. Nationally, I think museums can be places to get conversations going that might not happen in other contexts.

David Serlin: In a way, what you're describing with the multiple voices that are making claims on, or at least trying to offer different narratives about, gun rights and the technology of the gun is also true for many public history sites. Many mainstream historians and curators are often taught that their job is not to be too "present," not to shape things too much. Just present the facts. So when people say to you, "I'm not interested in debating gun laws or the Second Amendment; my only interest in the gun is as technology," it's because they've been professionally trained to believe that technologies doesn't have politics—precisely why Langdon Winner published his groundbreaking essay, "Do Artifacts Have Politics?" 40 years ago (Winner, 1980). The idea of neutrality is itself a kind of political fiction that people participate in to avoid having to be seen as political.

Jennifer Tucker: Many museums with firearms collections don't exhibit them for a variety of reasons, partly because they don't want to court controversy. The Smithsonian, for example, has not had a public exhibition about the history of firearms for at least 25 years. As far as I'm aware, there is no museum devoted to a critical analysis of gun violence. The Royal Armouries in Leeds, England is one of the few museums that shows the impact of bullets on the human body (using gelatin models). They have one room showing statistics of gun violence worldwide.

On the other hand, the questions that firearms collections raise are similar to the kinds of issues that *all* curators of technology museums face. How do we make old objects interesting? How do we display and provide historical context for technological artifacts (in this case, as one curator put it, "racks and racks of guns") in a way that will appeal to both enthusiasts and the general public? What stories can be told with material artifacts that cannot be narrated without them? How do visitors imagine the past? This is what makes history museums an interesting example of what the sociologists of science Susan Leigh Star and Jim Griesemer once called (in relation to natural history museums) "institutional ecology" (Star & Greisemer, 1989).

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David Serlin: This makes me think about one of the central tenets of museum studies: objects may or may not tell their own stories, but the placement, arrangement, and organization of objects can impact what stories are told and help distinguish one narrative from another (Anderson, 2012; Globus, 2011; Gurian, 2004; Kirshenblatt-Gimblett, 1991).

Jennifer Tucker: Yes! And maybe in that respect the exhibition and public history interpretations of firearms in American history are similar to any other historical narratives. Diverse audiences in history museums have different reactions and opinions on guns. For example, recently I commented on a script for a newly-renovated exhibition of firearms at the Cody Firearm Museum in Wyoming. Even in those conversations with other curators and historians, there was a wide spectrum of opinion not just on guns but on which histories and contexts are relevant. You could look at guns in the context of broader histories of commerce and advertising, or of science and innovation, or of sport, labor and even design and fashion; or you could interpret them in reference to the harsh realities of gun violence, colonial wars, mass shooting, domestic violence and injuries (see Figure 3).

It reminds me of the work of Peter Howlett and Mary Morgan about public facts. They say that facts are everywhere; they are part of the stuff of public life as much as the way we talk to each other as individuals. But which facts travel—and travel well—depends not only on their character and ability to play useful roles elsewhere but on how they are packaged, labeled, and accompanied across difficult terrains and over disciplinary boundaries and museum walls (Howlett & Morgan, 2010). When I'm doing research on 19th-century law or crime, only a tiny number of us fight over what was going on in the 1870s. In the case of the Second Amendment debate, the stakes are high and the arguments can be fierce and unlike anything that we really prepare for when we become historians. Those of us who study science and technology are trained to try to find out: What do people believe? How and why do they assemble facts in a certain way? Even if we don't necessarily agree, we think it's important to find out. Historians of science like studying controversies because they bring to the surface a lot that's otherwise latent.

Just as I want to understand how people in the 19th century staked out competing positions on scientific controversies, such as evolution, as a historian I'm interested in finding out how popular, as well as legal, views on gun technologies are changing. The Second Amendment right that some people are claiming when they're at a state capitol carrying rifles while protesting a quarantine lockdown is an understanding of the Second Amendment that would have been incomprehensible to the federal courts before 2008. It's not the way founding-era Americans understood or interpreted the Second Amendment (Blocher & Miller, 2018; Tucker, 2019b). It would be great to see more historians engaging in the public history of guns and multiplying the stories about the past.



FIGURE 3 NRA Firearms Museum (pictured in background), Founders Ranch, New Mexico. Photograph by Single Action Shooting Society. Reproduced by permission [Color figure can be viewed at wileyonlinelibrary.com]

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David Serlin: Although we might be embarrassed to reference them, creationist museums, such as the Museum of Creation and Earth History in Santee, California, function in an interesting parallel with the NRA-sponsored museums you're describing. We might be opposed to what they represent but, in fact, they are trying to call into question the presumptions of many mainstream historical narratives—even when their target is evolutionary biology or gun rights rather than whether or not George Washington ever told a lie. I'm not at all suggesting that they're doing the same work; but if we were to create a taxonomy of places that question the museum as an institution and as a presumptive medium of expertise and truth-telling, sites like the Museum of Creation would be part of the same taxonomy as many public history sites.

Jennifer Tucker: That's a good reason for why I believe more historians should work with museums on the issue of firearms: to create spaces for a greater variety of histories and voices, and to bring guns out of a narrow circle of special interest museums for gun collectors and enthusiasts into the broader mainstream of public history. Gun rights organizations, and especially the NRA, have a strong presence in the public history of guns, in part due to the way that licensing and safety of guns works for accredited museums. And the NRA has three museums, with more in the planning stages. It also makes films and curates exhibits that try to align to a gun rights narrative to an American national narrative. The NRA is a much more visible presence in the telling of the public histories of guns than other history and technology museums in the US (see Figure 4).

Simply ignoring the history and impact of guns in American society is not a solution. It recalls the memorable quote by James Baldwin: "Not everything that is faced can be changed; but nothing can be changed until it is faced."

David Serlin: I think what you're pointing to is that part of the goal of public history, or part of what public history offers, is attention to the possibilities of the multiple contexts or multiple narratives in which a technology or object exists. To make an exhibit about "The Gun that Won the West" is to omit that guns have one more than meaning, not just now but in its own time. The gun as an object may have its own agential life, as feminist materialists like Karen Barad and others have argued (Barad, 2007). At the same time, guns always have a social and cultural life into which they're embedded. They aren't agents that act on their own accord. They are always connected to individuals.

Jennifer Tucker: Often, history is interpreted through a narrative of threats and how society faced them down; that's a point that Jared Diamond raised in his widely-discussed book, *Guns, Germs, and Steel* (Diamond, 1997). Today we see frequent performances of "armed citizenship" in which individuals or groups of Americans brandish guns in public as a symbol of taking control of their own safety in what they perceive to be an increasingly

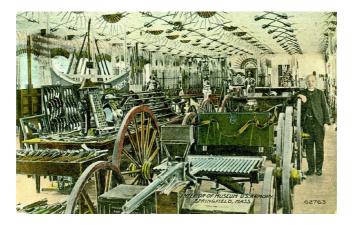


FIGURE 4 "Interior of the US Armory Museum, Springfield, Mass." Postcard, ca. 1910. Image reproduced courtesy National Park Service, Springfield Armory National Historic Site [Color figure can be viewed at wileyonlinelibrary.com]

dangerous world. Claims about the historical past are frequently used to legitimate such behavior, and to shape state and federal laws regulating civilian gun possession and use.

The so-called "warrior training" of law enforcement officers is another example. Law enforcement officers are increasingly trained to cultivate a "warrior mindset" which spins a narrative where police are heroes fending off danger at every turn, even if that means killing civilians. Using billions of dollars' worth of equipment that local police departments have received since the 1990s through a special arrangement with the US Department of Defense, police are taught military-style tactics that teach police officers to be afraid: shoot first, think later. Yet the more military weapons police have, the more likely they are to use them, leading to more—and more lethal—police violence (Schrader, 2019).

In a similar way, with the arrival of the COVID-19 pandemic, we see an interesting contrast between something that's microscopic but also folded into the trope of the enemy against whom we are "waging war." It reminds me how, when the discovery of bacteria was first presented to the wider public in the late 19th century through the medium of richly-illustrated newspapers and magazines, artists used the visual iconography of colonial warfare, with all of its attendant racist imagery to instill a picture of the bacillus in the minds of their readers. Bacteria were portrayed as a mass of unindividuated African warriors, arrayed to fight against a few individual phagocytes and leukocytes who were portrayed, in contrast, as white soldiers of the Empire. The virulent racism is visible to us today, although not perhaps in the way that the original artists intended.

David Serlin: The invisibility and intangibility of the coronavirus, for some people, stirs up anxieties that urge them to project their fears of viral contagion through the image of the outsider or the stranger, a recurring trope that scholars like Georg Simmel and Zygmunt Bauman have observed since the 19th century (Bauman, 1991). The foreigner, the immigrant, the alien, the deviant: the stranger is always the feared transhistorical site of social breakdown. And this is only further fed by the spatial and material ambiguity of the coronavirus's transmission through "droplets" or particulates—as opposed to something more concrete, such as the way HIV is passed through blood or semen, or how SARS was traced to eating civet cats.

Jennifer Tucker: That's what would make curating an exhibition about the coronavirus an interesting challenge: how would representation work? Unlike other pandemics, it doesn't produce the visible buboes of the bubonic plague, or the visible lesions of Kaposi's sarcoma of AIDS. We don't know who among us has it or anything about it, so we're left with models and microphotographs.

David Serlin: This makes me think of the organization Visual AIDS, which began in 1988 and is one of the largest repositories of visual art, photographs, 35 millimeter slides, or photojournalism of the AIDS crisis. Since the beginning their goal has been to collect everything AIDS-related they could get their hands on. They have numerous projects, but one thing they do is invite guest curators to put together an exhibit or at least put visuals into some narrative framework. Their collections are the raw data out of which you can generate the exhibition you want. And by doing so, they're shaping the public history of AIDS. Such an approach is not like in the old days when the mandate of the museum or the archive or the library would be to collect or accession dozens or hundreds of examples of objects, like shells or skulls, after which historians and curators would judiciously select some for exhibition (Fabian, 2010). Of course, some of this has to do with storage—where are you going to put more skulls? —but in the digital era are there any constraints to how much one can collect? It's not that one approach is better than the other, but they do speak to different senses of urgency.

Jennifer Tucker: What you said about putting visuals into a public health narrative reminds me of how, in addition to visual artists, medical anthropologists can also help us to imagine a possible exhibition about COVID-19. Last year, I attended a great conference organized by a medical anthropologist, Christos Lynteris at the University of St. Andrews in Scotland. Christos leads a project that is looking into the epistemology, ethics, aesthetics, and politics of epidemic imagery. He and his team are studying visual narratives of epidemics around the world: images, emotions, and history writing as well as the political aspects of epidemic imaging. I think his research is exciting and offers some really key insights about the current pandemic and its effects (Lynteris, 2019).

Lynteris introduced the term "epidemic photography" to refer to the visual field of epidemics. As he shows, photography has long been used to portray human suffering in the course of epidemics and efforts to alleviate it, following well-established humanitarian visual tropes. It also has been used to portray a range of practices and technologies of epidemic control: disinfection, hygienic burials, quarantine, and the ubiquitous use of Personal Protective Equipment in the course of tracking, examining and containing patients and contacts. He also studies how maps, diagrams, graphs, scientific illustrations, video and film have been used in conjunction with photographs in media coverage of epidemics such as SARS in 2002–2003, the swine flu pandemic scare of 2009, the Ebola epidemic in West Africa in 2014–2016, and the ongoing crises of the Zika virus and the novel coronavirus.

Lynteris also showed that antiepidemic masks as we know them today were invented in China more than a century ago during the Chinese state's first effort to contain an epidemic by biomedical means. The masks then—as now, he argues—weren't just an effective prevention device. They also were an excellent publicity tool for proclaiming China's position as a modern scientific nation. Newspapers across the world in 1911 featured shots of the new face mask, which looks much like the white paper version we know today. Cheap, easy both to manufacture and wear, and for the most part effective, it was a triumph. When the Spanish influenza struck in 1918, face masks were readily adopted (see Figure 5).

Understanding epidemics not simply as biological events but also as social processes is key to their successful containment. In February 2020, Lysteris published a piece in the *New York Times* about what he called "the social life of masks" by asking: "Why Do People Really Wear Face Masks During an Epidemic?" (Lynteris, 2020). He writes that it is not only to fend off disease, but also to show that they want to stick, and cope, together under the bane of contagion.

David Serlin: While we're talking about the semiotics of wearing (or not wearing) masks, how do you understand the temporal convergence of the global COVID-19 pandemic and the social and political transformations, both in the US and abroad, inspired by the brutal murder of George Floyd? Both the pandemic and the protest movements make clear how material artifacts like masks and technologies like phone cameras are ancillary to social movements and our understanding of human behavior under such adverse conditions (Tufekci, 2017).

Jennifer Tucker: Just as a future museum about the pandemic should include discussions of technology, it's also pertinent for us to ask, as it relates to the current efforts to dismantle structural racism, what does it mean for conversations about racism, inequity and justice to be mediated technologically? What's unspoken or assumed? And what it might mean to think critically about the role of technologies in social movements? How are technologies (of policing, of communication, etc.) deployed and what are their wider contexts including those of law, capital, media, political organizing, and so forth?



FIGURE 5 (*Out)breaking News*, an art project featuring a surgical mask comprised of headlines from the influenza pandemic of 1918 and the current coronavirus outbreak. Photograph by Elia Hunt. Reproduced by permission [Color figure can be viewed at wileyonlinelibrary.com]

Another thing that has struck me about the current protests against racism and police brutality in the wake of the senseless murder of George Floyd is how technologies are rendering racism visible on phones and TV. The portrayal of protests over different media formats is, in different ways and with different effects, rendering state violence against black and brown people more visible. The other thing is how technology is being used to build networks and coalitions. The Black Lives Matter movement developed through Twitter and Facebook as a means by which to build networks of allies and new coalitions that form the first major 21st-century social movement to combat racism in the US (Tufekci, 2017).

From the debate over the access of photographers and journalists to protests in major cities, to the way that activists are sharing information and support via social media, to the archiving of protest materials using new digital platforms, I'm reminded of something that Bijan Stephen wrote in *Wired*: "Any large social movement is shaped by the technology available to it and tailors its goals, tactics, and rhetoric to the media of its time" (Stephen, 2015).

After the death of Freddie Gray in police custody in Baltimore in 2015, Aaron Bryant, one of the curators at the National African American History Museum in Washington, DC, began gathering artifacts and photographs. In that moment, he was thinking about what will survive, what will get disposed of, and what might be the interplay between collections and noncollections. It makes me think me of an editorial that the reporter Graham Bowley wrote in the *New York Times* entitled "In an Era of Strife, Museums Collect History as it Happens" (Bowley, 2017).

David Serlin: That's true but, historically speaking, precuration collecting has been the central enterprise of the museum. Being able to isolate the tangible physical object, like a piece of steel from one of the World Trade Center buildings, is a modern version of collecting a piece of the cross or the withered finger of a saint. But it's a very different enterprise than curating with something specific in mind. Recognizing that this moment *needs* to be collected while at the same time deferring whatever choices you make for its curatorial presentation for a later date—those are two very different sensibilities. The latter turns the museum into a kind of engine for thinking about public history, which public stories need to be collected and preserved (Brier & Brown, 2011).

Jennifer Tucker: That's a good point. Think about, for instance, an exhibition based on an anniversary. How does a museum memorialize the anniversary of an event, which is really an ontological question about what memory is and whose is valued and who owns it? Through the act of collecting and exhibiting objects, museums make an intervention into the chronology of what counts as history (Serlin, 2006). This is no different from an archive or an institution building a collection of physical objects related to the events of 9/11, or even more recently assembling a photographic archive of life during the coronavirus crisis.

Large museums are proactive sometimes, but smaller museums have been doing this for a long time and may be better positioned to work with community groups and local activists. They have often thought of themselves as "rapid response" collectors who were responding immediately to events.

This might seem like a quirky analogy, but it reminds me of how the young woman who later would become famous as Madame Tussaud, the waxworks museum proprietor; during the Reign of Terror after the French Revolution, she would sculpt wax models of the heads of people who were executed at the guillotine. She put them on public display, first in Paris and, later, on tours across Britain and eventually, in her permanent London establishment on Baker Street.

David Serlin: Madame Tussaud's, at least in its earliest incarnation, was also kind of a "living newspaper" that was attuned to the news of the today: they would create a new wax figure for a new Member of Parliament, or a political scandal, or a murder, or a new cultural sensation. Tussaud would use the space of the museum to respond to historical events that were happening at that moment. Of course, there were permanent exhibits on British history, but there were others that were constantly updated as a kind of precursor to this idea of rapid response collection (Pilbeam, 2003; Serlin, 2014; Tucker, 2017).

The urgency that some museum professionals feel, the notion that we are living through a special moment, is a very particular sensibility that comes out of the social upheavals of the 1960s and the turn to thinking about museums as political institutions. That was not always the case for museums or curators. The destruction or

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deinstallation of statues in response to the legacies of institutional racism would rarely if ever have been taken up by museum professionals 50 years ago.

Jennifer Tucker: One thing that might be interesting for us to imagine in terms of the objects related to a possible future public history of the COVID-19 pandemic is how quantitative information is being circulated to the public now: the body counts, maps, charts, bar graphs, animated diagrams of breath, and so forth. The language of "flattening" or bending the curve has been picked up by climate change activists. Then there are the objects: the blue gloves, the chalk tracings on the sidewalk that mark out where we should locate ourselves in order to put 6 feet of distance between us and the person next to us. These are gestures that remind me of the outlines of bodies made during a crime investigation. So I would hope that any public history exhibit would address full-on the economic and racial disparities that are made even more visible by the coronavirus.

David Serlin: So if you wanted to curate a public history exhibit about "what happened" during the spring and summer of 2020, would you collect everything you could get your hands on, or would you precede with a fixed idea of a narrative: "The point of this exhibit is to show economic and social disparities preceded the arrival of COVID-19 but which the pandemic threw into stark relief?"

That's why I like thinking about the lives of objects; they offer the promise of an exhibitionary form that does not automatically reduce social experience to only one kind of story. For instance, I've noticed that my local newspaper in San Diego has been featuring real estate ads prefaced by the phrase "we're all in this together," followed by listings for houses and apartments that only a slim minority of the population could ever afford. There's something deeply cynical about using a communal ethos developed during a time of crisis as a way of selling real estate.

Maybe one of the things that an exhibition about the experience of COVID-19 could show is its effect on social ritual or habitus. For instance, it is quite amazing that, for a brief moment, the directive to "shelter-in-place" or "lockdown" seems to have united the world through some awareness of the limitations of habitus or routine. Of course, there are stark differences within countries and within communities. So you might want to self-consciously contrast the museum's exhibition of these common themes or routines against those of other exhibitions so as to avoid the kinds of fantasies of universal humanism found in Edward Steichen's *The Family of Man* exhibition (1955) at the Modern Museum of Art: "Here's a family from China with their new baby, here's a family from Ohio with their new baby, so we're all the same" (Steichen, 1986; Turner, 2012).

Jennifer Tucker: When you just mentioned The Family of Man exhibition of photographs, it reminded me of that exercise that the astronomer Carl Sagan and his colleagues did when they assembled the "Golden Record," a collection of sounds, diagrams, and images, for the Voyager II mission in 1977 (Scott, 2019). They reached for inspiration to Esarrhaddon, king of Assyria from 681 to 669 BCE, best known for rebuilding Babylon. Esarhaddon wrote his own praises into the bricks and stones of the city for posterity. Likewise, Sagan and his team tried to compile a representation of the evolution of the human and natural environment on earth, as much as was possible in a collection of 118 images. Sort of a "deep history" project. The Golden Record was launched into interstellar space in a hopeful appeal to expand the human spirit, and to make contact with extraterrestrial intelligence.

Their final selection was a mélange of 1970s scientific and popular photographic visual culture: images from Edward Steichen's 1955 Museum of Modern Art exhibition in New York as well as *National Geographic* illustrations; scientific photographs of DNA, human anatomy, the planets, and animals; and photos that came from the United Nations. It was a time capsule for the future. But as I recall the committee steered away from anything controversial (war, disease, crime, poverty) by saying "We decided the worst in us needn't be sent across the galaxy." They avoided any political statements or images that might seem "hostile to recipients." It wasn't a documentary: They meant it to be a picture postcard: a vision of a harmonious and multicultural planet to which, for Sagan and his team, humanity should aspire.

David Serlin: These questions of visual representation make me think about other forms of representation, namely the focus on social distancing that has emerged as the *rem non grata* of the pandemic. Part of my forth-coming book, *Window Shopping with Helen Keller*, deals with historicizing touch and tactility outside of its medical

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framework and putting it back into some kind of social or cultural framework (Serlin, 2012). We know historically about warnings to parents against the developmental effects of too much physical affection on children by behaviorists like John Watson and, later, the ill-advised experiments by Harry Harlow who tried to understand the effects of little or no touching by alienating and torturing baby monkeys (Harris, 1984; Vicedo, 2013). But how about the meanings of touch right now, especially as a violation of personal space and vector of transmission during a pandemic? In a public history setting, how might we convey the effect of the COVID-19 pandemic on rituals like the laying-on of hands in a hospital or hospice setting, or in funeral rites or mourning? Or in a moment when even people who are committed and/or monogamous relationships are warned about forms of touching? Could these phenomena be communicated effectively in an exhibition space without actually using the medium of touch? (see Figure 6).

Jennifer Tucker: One reason why the pandemic is so frightening is that it haschanged how we touch. One person who thinks a lot about the elusive social and psychological impacts of touch in relation to familiar phenomena such as disease, war, conservation, and survival is Lynn Johnson, a photojournalist and educator (Johnson, 2020). I've been thinking a lot about Lynn's work as we've been talking about the representation and its limits.

Currently, Lynn is working on a visual story about the pandemic which she calls "Pandemic Diaries." One of her photographs is of a nurse in charge of doing COVID-19 testing at a hospital in Washington State, near where the COVID outbreak in the US began. Lynn points out that the nurse has an identity, a history of education and service; but, in this image, she is a symbol of measures taken against COVID-19 which, at that time, was especially wrapped in mystery and fear. Her armor, comprised of several layers of net and mask, would protect her body; but what about the layers of trauma that battered her psyche as she took care of patients in the ICU? Lynn sees a risk with iconic news photographs that in making human beings into metaphors and symbols, it is all too easy to forget that people are living "out there," in real time–layers of lived experiences that we, as viewers, will never know and can never understand. This is one reason why the material and affective gestures of COVID-19—the masks, the gowns, the eyes looking deeply into or away from tragedy–are so profound.

David Serlin: There is something in all of this that reminds me of the first decade of the AIDS crisis, for sure. But there's also something about the jarring contrast between the invisibility of a virus and itseffects on our senses that seems both very contemporary and ancient at the same time (Classen, 2012; Ott, 1996; Smith, 2008; Tomes, 1999).

Jennifer Tucker: I agree. The pandemic has certainly heightened our awareness of nonvisual sensory responses: from the loss of smell and taste as a potential index of infection, to the presence or absence of social and natural sounds—from ambulances to birds—as signs of the lockdown. It goes back to the question of seeing and unseeing and what's visible or invisible.



FIGURE 6 Cindy Holland, a nurse at Whidbey Health Medical Center in Coupeville, Washington, dons protective layers of net and mask before she administers COVID-19 tests at the center's drive-up clinic. Photograph by Lynn Johnson (2020). Reproduced by permission

David Serlin: Right. There are all of these sensory effects as well as avoidance of sensory encounters that, once taken for granted, are at the center of both social and epidemiological concern. And, to your point about domesticity, during lockdown home baking was probably at an all-time high. Probably not since the 1970s has there been so much homemade bread.

Jennifer Tucker: The whole culture of lockdown, if one can call it that, made me think of those 1970s projects focused on do-it-yourself or anticommercialism like *Firefox* or *The Whole Earth Catalog* or *Diet for a Small Planet*, or even homeschooling (Turner, 2006).

David Serlin: As in the 1970s, many of these are reinventions of the social in response to a time of crisis: cocktail parties and book parties and graduation ceremonies online. And as with other aspects of do-it-yourself culture, we saw how people circulated instructions for making their own masks or making machines, like respirators, using 3D printing technology. That also seems very much like the 1970s—reacting to the absence or incompetence of local or government agencies and sharing instructions on how to make your own masks—or at least a 1970s disaster film (Zaretsky, 2018).

Jennifer Tucker: Don't forget all of these online tutorials, not just for cooking or baking or making masks but for sharing survival strategies. Things are being pulled up from the past in terms of comfort food, pantry foods, one-pot casseroles. There's a whole genre of home-cooking programs on YouTube featuring interviews with an older generation that lived through the Depression: How do you feed people on a limited budget? How do you preserve food in a time when you're not sure what resources will be around?

David Serlin: The 1970s does seem more and more like a very powerful touchstone for interpreting the culture of the COVID-19 pandemic—that could make a very interesting curatorial framework for an exhibition. Might we also include radical or at least skeptical critiques about science and technology that emerged during the late 1960s and for much of the 1970s (Bell, 2017; Murphy, 2012; Nelson, 2011; Schmalzer, Chard, & Botelho, 2018)? Traditionally critiques of scientific expertise came from the left: challenges to technocracy, the military-industrial complex, nuclear weapons, ecological damage. Now there are as many people on the right as on the left who are critical of science and technology, from climate change deniers to anti-vaxxers to those who claim that the coronavirus is a hoax. And some of these have produced weird alliances between activist groups that no one could have predicted even a decade ago.

Jennifer Tucker: The often unexpected alliances remind me of what was happening a lot during the social and political upheavals in late 19th-century Britain. There are interesting precedents for how these alliances reform and remap themselves under very different circumstances. You can also draw a straight line from the protesters "carrying" guns on the steps of government buildings demanding that state governors lift the lockdown at the height of the COVID-19 pandemic to the deep attachment of a guns-rights narrative to libertarian values.

David Serlin: This is why the rhetoric of "we're all in this together" has felt so hollow to me: not because the sentiment itself is disingenuous, but because of how its use conflicts so deeply with a national leadership that deliberately abandoned its central role at the beginning of the crisis. The outcries from people who feel that their liberties are being encroached upon by social demands—that wearing a protective mask is, like restrictive gun laws, an imposition on one's freedom—seem like something that could only happen in climate where people are encouraged to believe that they have no responsibility to each other. It was as if the Trump administration wanted to fulfill Margaret Thatcher's claim that, "there's no such thing as society. There are individual men and women and there are families. And no government can do anything except through people, and people must look after themselves first" (Keay, 1987).

Jennifer Tucker: And yet, in a way, the one thing that unites so many of these narratives is a powerful idea about the self. When do people feel like their self is being encroached upon, and when do they feel open and even committed to relaxing the boundaries of their self? What kinds of sacrifices are they willing to make for others? These questions transcend the medical story of the coronavirus. It reminds me a little of the questions that compel many historians of technology: how does a "bad" technology—for example, a clitoridectomy—connect with the larger social and political structures of the world? (For Susan Leigh Star, the quintessential example is the gun.)

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Conversely, how does a "good" technology-for example, carbon capture-connect to how we understand our selves in the world? The COVID-19 pandemic is not only a medical phenomenon but also a social and cultural one, raising powerful questions about the continuous negotiation between the individual and the social.

ENDNOTE

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¹ 1All in-text references inserted into this conversation appear in the References section at the end of this interview so that interested readers may do further exploration.

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How to cite this article: Serlin D. Guns, germs, and public history: A conversation with Jennifer Tucker. *J Hist Behav Sci.* 2020;1–15. https://doi.org/10.1002/jhbs.22055