

Symposium on the History of Technology: Past, Present, and Future
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Comments on Technology and Culture

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Before I start, I want to ask how many of you have ever had a student in a class who spent the first half of the class, the first semester, sitting in the back row saying absolutely nothing and then -- and then the kicker -- then they hand in their essay for their midterm exam, and they are a full grade ahead of anybody else in the room? That was Dave Lucsko.

And also I want to tell a story about Roe and Dave which I don't think Dave would know about, but I do. I was reminded of it because I retired recently, and I had to clean out my office, which was an exercise in throwing a lot of things into recycling containers. And finally, I came to something at some point, and it was a letter, typed with a postage stamp on the envelope, from Roe. It was the day that David defended his dissertation.

And Roe stopped that day and he wrote, typed out a letter to me and to my colleague Gus Giebelhaus and wanted to let us know how much David had shined. I think that says a lot about Roe. And I kept the letter and the note. Thanks for sending him our way, Roe, and thanks for sending us the thanks.

And thanks for having me down. You all didn't know there was a Georgia Tech-MIT axis, but there is.

So. I have a caveat, and that's to say that I promise, I swear, I did not rewrite my talk after the morning sessions. I'm not going to explain the details, but there exists a strange resonance in what I'm about to say with some things which were said this morning, right from the get-go.

So, with that out of the way, let me get started.

So, “the history of technology, past, present, and future, 15 minutes.” It sounds like a qualifying exam question from Hell. And it sure makes me glad I ended up at Delaware and not MIT. (That’s not true.) Anyway, then I said, how do you get a hold of this? And somehow I went back into my old shell, and what emerged was the engineering student that I was. So I said I know what I’ll do. I set out methodically. I’m going to take stock of the journal of record today by examining the current issue or issues and then compare it with an issue from, say, 1977. Then I’m going to see what’s up, then and now, what’s changed and continuity, you know, basics of history. That was my research agenda.

And I’ll get back to that eventually and things I learned. But first I need to suggest why 1977. The automobile was perhaps lurking in my mind, but it wasn’t. And I’ve got to confess that 1977 was not a random choice. I was not being scientific. There were fingers on the scale. And what they were, were these. On a personal note, 1977 was the year when I turned 21 years old, added a history major to my one on bioengineering, and set my sights on graduate studies in the history of technology.

That meant -- it meant at that point -- a trip across the country from my native California to a program located somewhere along Amtrak’s northeast corridor. And I want us to just think about the discipline in that. If you were a California kid like me, that was the lay of the land. Fortunately, I had a fiancée who was admitted to Hopkins, so I knew I was coming East anyway with a companion.

Anyway, I set my sights on the East, and I ended up at Hagley. But during my interview visit there, which was in March of 1978, I was introduced briefly to a visiting scholar, Roe Smith. And Roe had very nice things to say about the Hagley program. Thank you. It’s done me well. But this was the world at the time. This is when the MIT students in the crowd were waiting for the mechanism to be able to work with Roe and earn their degrees. I didn’t have time to do that. I needed to get down to business at that point.

So anyway, there are personal reasons for choosing 1977 just as I think there are personal reasons for most of the things that we do. But we often hide behind the guise of professional distance. I increasingly think that we’re better off revealing some of our motivations and our personal motivations.

Okay, but the real reason I went to 1977 was I was cheating entirely, because as a graduate director for my students, I’ve long considered 1977 to be the year of -- just a miraculous year in the publication of a stunning array of foundational books in our field. Here’s a very much abbreviated list, but still it’s a good one.

Winner, *Autonomous Technology*; Kevles, *The Physicists*; Noble, *America by Design*; Chandler, *The Visible Hand*; Smith, *Harpers Ferry Armory and the New Technology – The Challenge of Change*. (He gets a subtitle for reasons that will become apparent.) Now, if we included works from 1976, we could add Post, *Physics, Patents, and Politics*; and Kasson, *Civilizing the Machine*.

In addition to Post's book coming out that year was his exhibit that he basically authored in the Smithsonian Castle on Technology in America. It was reviewed in *Technology and Culture*. You [Roe] helped with the review, by the way.

Now, it's quite a list. Chandler won the Pulitzer. Smith was a finalist. The OAH awarded him its prestigious Turner prize. I know how hard it is to earn a Turner prize because I was on a committee that chose the Turner prize winner once. Now, anyway you cut it, it's impressive.

So in contemplating that year, I dug a bit and probed a bit deeper into the lives of these authors, cheating a little bit. And I discovered something. Two things jumped out at me. One was the age of the authors. Aside from Chandler, who was born in 1918, all of these authors were born between 1939 and 1945. They were part of that small birth cohort of the Second World War, which cultural historians have shown to have exerted a profound influence upon the sixties and the seventies. The cohort served as something like an advance guard of the Baby Boomers. (I was born in '57, right at the center of it.) You can look all these people up and find them with their birthdays.

And one of the places that this thesis of the sixties being led by this group of war-time folks is rock stars. Every other month of late, we have had rock stars turning 80. So don't look them up now. You can do that later, but it's there, this chronology. And so somehow in my musings, I have come to think of these 1977 and '76 authors as HoT rock stars. They didn't know they were doing it, but they were setting examples.

Now, the question then I would ask is, what boat were these pioneers rocking? What were they doing? And now I recall Ruth Cowan this morning. And I decided what was very stark to me is that they were deeply engaged with the world of work and the institutions around which work was organized. Chandler largely ignored such matters. That was his contribution, implicitly presuming that the rise of corporate mass production generated a benevolent affluence whose benefits were widely shared across the populace.

The tumult of the sixties and seventies had seemingly just passed him by, washed over him without making the slightest impression. So it washed past him. But meanwhile, Smith was on the ground. Smith, our guy, was on the ground. You were on the ground in Harpers Ferry. You were on the ground in Springfield. And you were focusing on events on the ground. And you

were developing a really rich, complicated portrait, but accessible, of the transition to industrial production.

Well, you gave technology a central place – “the new technology.” You captured the complexity of the encounter with mechanization as suggested in the all-important subtitle, “the challenge of change.” In this view, technology was not inherently beneficent. It could be threatening and disruptive, in the old pejorative sense of that word. I was talking about him to a colleague who we listened to after one of the morning sessions. And I say technology is always disruptive to at least some people. This is the good, bad, nor is it neutral Kranzberg law. It’s always disruptive to some people. It’s threatening.

The other thing that Roe pointed to is that technology could be received quite differently in one place or another. At Georgia Tech, one of the core readings is Roe’s book in our History of the South class, because it tells us so much about the South, its character and engagement with technology.

And thus, in his book culture mattered and culture operated at both local and national levels. What impresses me is how Smith, while engaging pressing issues of the day and issues of interest to the wider historical community, also spoke to issues of relevance to the larger population of the U.S. He presented historians of technology with a model and avoided many of its pitfalls. He did not, for instance, draw a dichotomy between innovation and use, a pet peeve of mine.

He granted technology some agency. It posed challenges. But he avoided determinism. He considered both private and public domains, local and national concerns. He weighed what policy and economics might contribute, both as factors animating his historical actors and as potential tools of explanation among the social sciences, while making clear their limitations.

These became hallmarks of his subsequent scholarship, most notably in the co-authored U.S. history textbook, which is an extraordinarily rich book. I reviewed it at length for *Business History Review* and described it as the most substantive U.S. history textbook out there, with pioneering research in political economy. The only problem is it was asking a little bit too much perhaps from the reader, the students. But it’s a wonderful book to have when you’re teaching an introductory course or giving a lecture the next morning after a night of thinking about something else. It’s a very useful volume, which is what textbooks are good for, I think.

Now, eventually on my reading list, the obvious companion on graduate reading lists was Ruth Schwartz Cowan’s *More Work for Mother*. Although she was a member of the rock star generation, her work would appear a bit later than 1977. (There was, after all, more work for mother.) But the crux of Ruth’s argument was already on display in that 1977 issue of

Technology and Culture, in a report summarizing a conference held the previous year at Rose-Hulman University. (This was a very common feature of T&C during this period, reports of conferences and conferences that were not annual events but one-off conferences. You can learn a lot from reading the summaries.)

And at this one, it was a conference to address American technology, past, present, and future. (I'm not making that up. That was the title of the session.) And the conference brought together six speakers, three people I'll just call technologists, sort of public technologists, and three historians of technology who were asked to address the pressing technological challenges of the day.

The three historians were Ruth and two fellows, one named Tom, who suggested we might benefit from considering Thomas Edison's world, and another named Mel, who expressed a deep need to develop new institutions of governance capable of addressing the challenges posed by an age of enhanced democracy, communications, and unrestrained material abundance.

Ruth essentially reoriented the conversation by questioning the presumed universality, (i.e., gender neutrality), of automation and the benevolence of technology. That was a bold stroke, and it was borne of her commitment to comprehending and studying work, which I learned of and had confirmed this morning.

Now, the conference also fascinates me because in the opening remarks, which were reprinted in *T&C*, the host laid out a grim vision of the state of the world. Brace yourself. We've already had disasters, but here comes this phrase. I'm not going to quote directly. It's too long, but the appointed host and moderator set the tone by pointing to the concerns and the grim vision of the state of the world, which was not really the state of the world. It was really the state of the United States in the world.

And the moderator pointed to concerns about energy and the environment, a mounting cold war, and trouble in the Middle East, declining faith in government, and persistent inflation that seemed to be eroding the wage gains secured by once-powerful but since weakened labor unions. Sound familiar?

All of this was as background to a looming Presidential campaign featuring an unpopular technocratic incumbent, who's a favorite of mine, and a former actor.

Now what interests me is not merely the persistence of the perceived challenges, and their remarkable resonance with our own time. It's also the continuing desire of historians of technology to engage the broader conversation, as evident for instance in the notion of the Great Acceleration, through which the notion of a rapidly changing environment, particularly in the West, might be addressed. And we can see this effort and this desire by looking at Jamie's

presentation, which cites many of the authors who are at work in this, but also by the work that's going on in the study of seeds and agriculture.

And I would highly recommend in the current volume of *Technology and Culture* -- the Now part of my story -- an essay by Courtney Fullilove, whose book Jamie showed, on seeds as a long durée technology. Her analysis is a rich assessment of work that is multi-disciplinary, involving policy, involving scientists, involving cross-disciplinary partnerships within the university.

And Courtney's writing about it. There are many scholars who have been drawn into this. And the one I'm most familiar with is one we hired at Georgia Tech I'm very glad to say, Helen Anne Curry, who's in the Kranzberg professorship now. And the Kranzberg professorship is in excellent hands.

What I see is that amidst the struggles against the hard times, the sense of failure, this is a group with historians of technology taking the lead and addressing pressing issues of the time and being constructive and producing solutions. We're not there yet, but they are something that we should pay attention to and feel gratitude for.

I would say that there's always been a question within SHOT of whether SHOT can address such issues collectively, whether we can act as an organization to enter into these sorts of projects and how do we deal with the issue that many of these projects are national, not tied to nations, but we're an international organization. And I think that these people are working around some of those barriers through demonstration. So that's another reason I take heart in them.

And then the other thing I would say to people who say really historians should not engage in this sort of thing and it's better for them if they do, to just use their own voice and express through their own scholarship. I would say either way, either approach that's taken, a collective or an individual one, there's a model on how to proceed. And the model goes back to the Harpers Ferry book.

It's a model of how you speak to a larger issue, but you do it in a certain structured way and with attention to detail.