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Qualifying Exams, Fall 2020
Question 2

Prompt

The relationship between technology and social change is an important theme across a wide variety of scholarship in Science and Technology Studies (STS). Choose nine books that you will use to explore this relationship and organize them into three different conceptual categories of your choice with 3 books per category.

Section 1: The intersection of Social/Experiential knowledges and Technology

The interactions of technology and society are complex, and one thing that my selected readings have in common is a shared understanding that technology does not have a simple causal relationship to social change. But social change can mean many things. Social change might refer to political changes, where society restructures itself to better represent its people (or the reverse unfortunately). Social change can mean shifts in the culture or widespread ideological attitudes, hopefully towards greater acceptance. These types of societal changes may be dramatic, such as a shift to a democratic government, or the finding that, after the happy ruling of Obergefell v. Hodges, a majority of Americans polled were in favor of marriage equality for LGBTQ couples[1]. However, social change can also occur on the level of the everyday and professional practices of human life, which necessarily exist in the social sphere because so much of human behavior is tied inextricably in our relations to each other. This view of social change is less glamorous (for lack of a better word), as these slow-building, individual changes aren't likely to occasion any headlines or passages in history books. However, the interpretation of social change as changes to the everyday behavior and practices of individuals in a society is most influenced by the technology available to the masses.

To home in on a more specific idea, I am interested in the idea of social conventions as they interact with or relate to technology use. I define social conventions as a collection of social practices,

[1] Ball, M. (2015, April 28). America Is Ready for Marriage Equality. The Atlantic. https://www.theatlantic.com/politics/archive/2015/04/america-is-ready-for-gay-marriage/391643/

heuristics, and tacit knowledges that are developed during social interactions between people, such as checking and responding to messages on Facebook (as depicted by danah boyd *It's Complicated* and Siva Vaidhyanathan's *Antisocial Media*), performing everyday nursing checks (as Bowker and Star depict in *Sorting Things Out*), or teaching basic computer skills to a class of elementary students in the kind of technological intervention (as Kentaro Toyama depicts *Geek Heresy*). I also see social conventions at play in my own field of quantitative science of science in the everyday decisions that scientists make about who in the lab will be listed as co-author on a paper and in what order. In these situations, social conventions represent the provisional rules that are developed and continuously renegotiated during periods of social change. As such, observations of social conventions become a powerful means of observing social change, particularly during a period where a new technology is adapted and absorbed into society. During this transitional period, there are no prior formal rules, and social convention becomes the arena in which the meaning and uses of the technology are defined, developed, and renegotiated among the stakeholders. As changes in technology open space for social change, the conventions that the social world develops to quickly interface with the technology will play a large role in the eventual outcomes of the intervention.

The introduction of apparently new technologies is also constrained by the expectations of the culture that shapes the paradigms of what innovations are desirable or even possible. Although technological innovations can play a role in shifting public thought and create and alter cultural norms of behavior around themselves, the social sphere of human relationships both with each other and with technology also shape technology. While all the authors of my selected readings see an influence of the social sphere with its attendant conventions, tacit and local knowledges, and adaptations that the people impose on the technology, they interpret this influence differently. This leads to the central question that informs the way I categorized the selected readings: do the authors see this relationship between social conventions and technology as a form of symbiosis, whether social either contributes to

or becomes a part of technological systems, or whether these conventions disrupt the functioning of technological systems.

I have categorized three general attitudes among the authors about the relationships between technologies and infrastructures and the social conventions that their participants develop as they navigate them:

1. Social conventions **break** technologies
    - *Geek Heresy* by Kentaro Toyoma
    - *Anti-social Media* by Siva Vaidhyanathan
    - *Fordlandia* by Greg Grandin
2. Social conventions **build** into the technology
    - *Sorting Things Out* by Geoff Bowker and Susan Leigh Star
    - *From Counterculture to Cyberculture* by Fred Turner
    - *Shock of the Old* by David Edgerton
3. Social conventions **supplement** technology
    - *It's Complicated* by danah boyd
    - *Technofeminism* by Judith Wajcman
    - *Addiction by Design* by Natasha Schull

Between these three categories, the first perspective assumes a stronger tension between social convention and technology, where the social conventions that users establish around the technology has the danger of completely undermining the intended function of the technology. Within this category, Kentaro Toyoma's *Geek Heresy* and Siva Vaidhyanathan's *Anti-social media* warn against the potential of social uses of the technology that the designers had not envisioned disrupting the work that the technologies had been designed to do. Both Vaidhyanathan and Toyoma are looking from the perspective of the designer. They pay particular attention to the motivations behind the technology and identify the persistent space between these often idealistic visions and their actual implementation. Greg Grandin's *Fordlandia* is also in this category because although he maintains a greater narrative distance from Henry Ford, the designer of a proposed rubber plantation in the Amazon basin, he too discusses in depth the many ways that the ill-fated designs of Henry Ford were undermined by his lack of social and contextual knowledge of the Amazon Basin and the people who lived there.

The other two perspectives both believe in a more harmonious relationship between technologies and the social conventions that inform their use. However, the main difference is whether the social conventions are seen as an element within the process for creating and solidifying the technological infrastructure that interact with, in the "building into technology" category, or whether social conventions about the technology use can remain distinct from the technology, in the supplementing technology category.

Between these two categories, the **building** category tends to contain the historical studies within my selection. Are social conventions simply standards that haven't been formalized yet? This category answers yes. Within this category, *Sorting Things Out* by Bowker and Star takes centerstage, as the authors are concerned with the definition and accretion of the categorical systems that structure daily life in a variety of fields and arenas. Bowker and Star show the ways that standards are transformed from informal matters of social convention into formal rule-based classification systems, and they discuss and explore the benefits or costs within that process. They pay particular attention to the ways that these classification systems that they explore are always historically situated, and are built additively over multiple iterations where present systems overlay the extant systems with all their baked-in historical precedents. Turner's *Counterculture to Cyberculture* also seeks to identify and capture social mores among the cybernetic and commune communities that hardened into the bedrock belief in Silicon Valley that personal computing is connected with freedom. With Edgerton's *Shock of the Old,* I explore how this perspective can be applied to thinking about invention and innovation because Edgerton argues that invention is as socially situated additive conglomerations of the informal practices and strategies of the people who actually use the technology in their everyday life.

In the last category, and in the second category that identifies a kind of synergistic co-construction between technology and social convention, the theoretical, and ethnographic works occupy the stance that social conventions can form a **supplemental** layer which people use as they

interface with the technology. In this perspective, the social conventions can make an additional layer that users can rely on to add additional flexibility and nuance to their dealings with the technology, which makes the technology more useful and able to be integrated into their lives in a meaningful way. The distinction here from the **building** perspective is that the layer of social conventions is there as an end in itself, and not as an intermediate step on the way towards incorporating the social convention into the formal structures of the technology. In this way, although it leaves less durable traces in the form of infrastructures of physical artefacts that the historians study, the ethnographic approaches of direct observations of social interactions and interviews with those who navigate and negotiate these conventions is very well-suited to observing these kinds of social conventions. In their view, this social layer is valuable because it remains flexible, and better able to accommodate the usual complexities and uncategorizable elements of human interaction. danah boyd's *It's complicated* exemplifies this perspective, as it demonstrates the many complex social mores teens develop and deploy for injecting nuance into their social media use and for adjusting the otherwise inflexible systems of social media to better cater to their interests and needs for control over their social lives. Wajcman details the dialectic where the kinds and uses of technology are informed by the existing gender relationships within the social world. *Addiction by Design* by Natasha Schull also represents a vision of a collection of social conventions and mores, that while they layer on the user experience of gambling machines, are not necessarily formally inducted into the structure of the gambling machine. However, Schull's portrait shows that the distance between the formal, documented rules and construction of the gambling machine with the socially developed personal conventions surround their use takes on a darker dimension: the gambling industry is maintaining this distance as a means to keep themselves swathed in plausible deniability about the effects and social consequences of their gambling machines. Schull's depiction shows that the layer of social conventions around the gambling machine may not only be constructed by their users, but also be deliberately guided by the designers.

All of the selected readings provide valuable perspectives on the relationship between social change and technology. I have focused on how the authors view the interaction between new technologies and existing social conventions and how they shape each other through changes in social behavior, cultural mores, and everyday practices of how users interact with technology.

Section 2: A Guided Tour of the Reading list

In the following section, I will describe the varied interested in the authors during these books, and what useful ideas I found in them. Also, as a matter of methodology, the subjects of the work and the methods used to study them also informs the conclusions of these books.

Kentaro Toyoma's Geek Heresy speaks from his own experience in the non-profit sectors of tech that too many technological solutions for social problems neglect to understand the context of the social conditions before introducing their technological intervention. He identifies what he calls the law of amplification, which states that technology can only amplify the social conditions that are already there. For example, if there's a strong social infrastructure for education, the addition of a technological intervention, like laptops will give already great teachers new tools to do great teaching, but in cases where the teaching is poor, the addition of laptops will not help because the students will not have adequate direction for using them for schoolwork. In Siva Vaidhyanathan's work, *Antisocial Media*, he presents an accessible accounting of the negative effects of social media that have been identified across various academic fields. Vaidhyanathan argues that although Facebook and similar social media companies were built with more or less innocuous goals, the social dynamics on these sites interacted with the technological constraints in really deleterious ways that amplify false information and powerful emotions and which sort users into ideologically-aligned filter bubbles. Where others discuss Fordism in the context of Henry Ford's highly successful work in the United States, in *Fordlandia*, Greg Grandin picks up his historical analysis of Henry Ford at a point where Ford attempted to export his successful

strategies of business in America into starting a rubber plantation in the Amazon Basin. In this way, Gradin's exploration of Fordism has the benefit of getting a stronger insight into Fordism as it disintegrates in the heat of the Amazon rainforest.

In Bowker and Star's *Sorting Things Out*, they draw attention to classification systems, which create a functioning infrastructure for organizing and clarifying the messy social processes of the world. Bowker and Star work by examining several in-depth historical case studies of the creation, maintenance, and effects of several classification systems, including the disease classification, nursing practices and the apartheid system of South Africa. In these examples, they show that classification systems entrench existing social norms and that categorization systems are always historically situated, having been constructed by additively from an accretion of useful rules constructed in the context of actual work practices or social norms. Next, in *From Counterculture to Cyberculture,* Fred Turner asks how computing technology transformed from a site of anxiety over dehumanization in the clutches of bureaucracy to the utopian tool of personal liberation. To do this, Turner uncovers and details the various linkages between cybernetic scientists and the counter-cultural movements. He studies their literature and philosophies, but he also takes a few cultural artefacts from these movements, namely Stewart Brand's Whole Earth Catalogue and the geodesic dome, as objects of study, and as an entry point into examining the movement's attitudes towards computing and information systems. Shock of the Old is David Edgerton's fascinating pushback on heroic narratives of progress pushed forward by brand-new earth-shaking technologies, and Edgerton concerns himself with questions about what Invention actually is, and what technologies are actually important. Edgerton takes a use-based approach to discussing technological significant, arguing that the important technologies are those that are in wide usage that are often older technologies that are so integrated in the fabric of society that they appear mundane: things like bicycles, corrugated iron, horses, and the radio. Furthermore,

Edgerton argues that the focus on newness also erases poor nations as sites where technologies are developed and used and erases the inventiveness of people living in those nations.

It's easy to read danah boyd's *It's Complicated* as a work of mythbusting about teens' relationship with online media and platforms: myths like teens are addicted to social media, social media is crawling with predators, teens don't care about privacy and are careless about posting things online. However, while boyd addresses these concerns of adults, she's more interested in describing the kinds of complex relationships that teens have with online spaces and she gives real respect and attention to their sophisticated reasons for spending time online and methods for maintaining their self-presentation online in the unstructured spaces "networked publics" that boyd notes are in short supply for modern teens. As boyd predominantly uses interviews with teens, boyd's work is squarely an ethnographic account, and one of impressive scope and ambition. In *Addiction by Design*, Schull works to tease apart the many apparent contradictions of machine gambling and reassemble them into a coherent portrait that explains its capacity to keep people playing to the point of compulsion. Central to her argument is the articulation of the way that gamblers become so focused on the machine that they ignore both eternal stimuli and the presence of their own bodies during gameplay. Furthermore, she describes how the design of the casinos, the odds, and the gameplay all work to facilitate the entry of the players into this flow state and to maximize the time on device. Judith Wajcman's *Technofeminism* is a theory-based work as she begins with an overview of and feminist thought about Technology through Haraway's cyborg. Wajcman finds that the utopian and dystopian modes of thinking about technology suffer from gender essentialist thinking about men's or women's relationships to technology writ large are no longer tenable or accurate. Instead, Wajchman follows Haraway's vison of women as a cyborg, whose body is both natural and technological to posit that gender and technology are a mutually shaping relationship, a perspective she calls the "technofeminist framework." Wajcman argues that the

uses of technology for women are highly contingent on the social context of those technologies, and that the uses of technology is not necessarily good or bad, liberatory or oppressive on its own.

Section 3: What do Social Conventions bring to the Technological?

Social Conventions Break Technologies

Framing the first category as social conventions breaking technology and technological systems invites a somewhat pessimistic reading. While each of the authors included in this category, Kentaro Toyoma in *Geek Heresy*, Siva Vaidhayanathan in *Antisocial Media*, and *Fordlandia* by Greg Grandin, are thoughtful and insightful, there is in fact a strain of pessimism through each of their works. Each of these books depicts some kind of grand ambition to improve the world using a technology or system at the center of the effort, but then depicts the frustration of the slow movement towards social progress. In Vaidhyanathan's case in *Antisocial Media*, Facebook, which was envisioned as a way to facilitate better interpersonal connection, both between friends and strangers, was eventually undermined until it became a cesspool of disinformation, angst, and squabbling. In *Geek Heresy,* Toyoma uses his experience from the tech nonprofit sector to identify and explore the patterns between the failed tech initiatives to do good in the world. And in *Fordlandia*, Greg Grandin tells the tale of Henry Ford's ambition and hubris in his desire to transplant the perfect city of Americana into the Amazon rainforest for the benefit of all. Of these three works, Toyoma in particular is an insider and is more closely aligned with the subjects that he critiques than the other researchers, so his arguments against the veneration of technology as an agent of social progress carry more of a sense of repetitive irritation that he sees the same mistakes over and over.

However, for all these authors, the issue is more about the inability of those implementing technology to accurately and reasonably take account of the social conditions of the environment into which they are attempting to introduce their technology. While all these authors demur from arguing

that technology itself carries the seeds of its own destruction, implicit in their argument that by failing to engage properly with the social world, the desired innovations of technology will either fail to gain a foothold, in the cases of Fordlandia and the nonprofit interventions Toyoma describes, or collapse into an accidentally malevolent mess, a la Fordlandia or Facebook. These works warn that one would do well to tread carefully amidst the social conventions that users or participants develop in response to these technologies because these social conventions can become at odds with the smooth functioning of the technology.

Vaidhyanatha's take-down of the social media technologies as agents of progress is less forgiving than the other works, but at the same time, perhaps he is least forgiving because it seems his expectations were higher; in many ways, *Anti-social media* is idealistic in its portrayal of the motivations of the people behind the social media companies. I question the implication that the dominant social media companies of today were idealistic to begin with—their expressions of idealism seems like more of a marketing ploy considering the fact that Facebook started as a webpage for users to rating the attractiveness of women in Harvard's sororities. In this respect, while I accept Vaidhyanathan's arguments about Facebook's many flaws, I would argue that Facebook seems to be continuing in the pattern it started in, harvesting attention and data from its users under the guise of providing a service.

As a historian, Greg Grandin maintains a bit more distance from the subject matter of the book, taking a wary outlook to Ford's ambitions for Fordlandia from the beginning. Ford's attempts to implement things like "a suburb" of houses with white picket fences in the Amazon rainforest takes on the pall of the absurd, as Ford tried to transplant the visuals of America into a place where these things have absolutely no connection at the local level. For example, the kinds of suburban clapboard houses that Ford wanted to build in the name of progress aren't "more advanced" than the thatched structures what were already built locally--in fact, the assumption that clapboard houses should be built is laughable because they are entirely unsuitable to the humid hot climate, where thatched roofs are

cooler and more durable. In a way, the founding of Fordlandia is also a kind of pre-packaged intervention that Kentaro discusses. Ford was certain that his idea of wholesome values were applicable everywhere. Toyoma sees an almost intractability of social conditions, such that the intervention of the technology has little ability to change the established patterns of behavior; social conventions around the technology will only amplify what was being done already before the technology appeared. Rather, real social change comes from better social infrastructure. In the cases that technology helps, it helps because the real stakeholders who understand the situation are fully empowered to do the social and locally situated things they need to do, and they bring in the technology in ways that amplify their work. The common thread between the pessimism of these three works is centered around how technology can fail when social conventions aren't accounted for.

Social Conventions Build into Technologies

The next three readings are concerned with the social conventions that become powerful or useful enough that they are documented and solidified into technologies. This can occur by being technology being inducted into a conceptual system, as with the classification systems in Bowker and Star's *Sorting Things Out*, or by being implemented within a material technology, as Fred Turner discusses in *From Counterculture to Cyberculture* and David Edgerton discusses in *Shock of the Old*. This distinction between the conceptual interests of Bowker and Star and the material technologies of Turner and Edgerton, while useful, is also something of a technicality, as I find that both the material and the immaterial technologies are still subject to the same building through social conventions process that these authors depict in this category. Even material technologies are undergirded by the socially derived conventions that push these technologies into widespread use and that create heuristics and guidelines that inform people how they should be used.

The big question that Turner addresses in *From Counterculture to Cyberculture* is how computers went from being seen as a dehumanizing force to one of personal liberation. Turner depicts the ways that although Brand et al. had come of age during the time that computers were represented as a bureaucratic dehumanizing force, the ideas of cybernetics informed their viewpoint and their search for a less dystopian vision of what computing could be. Turner's book describes the cultural history of the counterculture movement, the commune movement, cybernetics, technologists, and the rise of personal computing. He compellingly argues these are all linked with a common set of operating philosophies and with a number of players who played major, overlapping roles in all of these groups and movements.

Bowker and Star also discuss how the classification systems they are interested in are built additively. As new social conventions are proven useful, these once-heuristics become standardized and formalized until they are also part of the technological system. Whether they are specifically built into the technological system, included as new features in technology, or implemented as a standard for the practices of engaging with that technology. For Bowker and Star, classification systems count as technology, and this is convincing because the categories that Bowker and Star describe have been constructed to do some kind of work. The Whole Earth Catalogue that Turner describes as central to Steward Brand's Whole Earth movement also had categories. These categories were the ways that the whole earth catalogue ordered and enacted its once nebulous ideals into a sturdy information system, where the material artefacts necessary for their vision of self -sufficiency were tangibly accessible. However, we should not overlook the ways that the Whole Earth catalogue only worked because it was developed in practice through the work and networking of the Stewart Brand set with the commune movement. The whole earth catalogue represents radical self-sufficiency as something that is accessible through technology, and while it presents a vision of all the necessary elements of modern life rationally categorized and arranged into a well-defined guide to building a civilization from scratch that anyone

can use. But this knowledge contained within the catalogue had been accreted over time as conventional best practices for homesteading, within the context of a social movement.

Edgerton also grapples with figuring out how to assess significance for technologies in similar ways, but while Turner and Bowker and Star prioritize technologies that played important roles in enacting ideologies of the social worlds they were adopted into, Edgerton focuses more directly on use. Edgerton describes how significance is commonly understood, focusing on *new inventions that changed the world*, and he argues that the popular understanding of significant inventions is a kind of publicity feedback loop, where people ascribe significance to big inventions that are talked about a lot as significant. This feedback loop that does not actually capture significance at all and does not capture the technologies that people widely use. For Edgerton the significance of technologies flows from their actual usefulness in the lived experiences of the greatest number of people. As such, technologies are inextricable from their social and cultural use, and even constitutive of that technology's use as infrastructure within that society. The social practices and informal innovations that people create with technology at a local level is more important to Edgerton than its purported formal use, and these local uses and knowledges that have been built up in a social context actually quickly become integral to the use of the technology.

As part of their discussion about how actual use within different social groups and contexts, Bowker and Star also create and discuss the concept of boundary objects. Boundary objects can be material or conceptual, and they are points of connection between different communities that may have radically different worldviews, motivations, and interests. The use of a boundary object that each community can interact with allows those communities to work together with each other without needing to share definitions or the same understanding of what the boundary object is. In this way, boundary objects could be understood as having different conventions surrounding their usage within the different communities that use them. Although the boundary object itself remains the same as it

crosses between communities, the social conventions governing its use in each community can create considerably different end uses for the object. Edgerton's coinage and discussion of creole technology, the recombination and reworking of initially imported technologies to serve local uses, presents an interesting resonance with the boundary objects. Edgerton makes the firm stand that Creole technologies are a more accurate representation of what invention is because creole recombination is the predominant mode of invention. Creole invention happens all over the globe particularly in poor countries that have traditionally been dismissed from the popular vision of technological nations. As boundary objects can exist simultaneously in varied social contexts, Edgerton's creole technologies which are transplanted and adopted by a new community share a similar interested in the idea of technological transplantation. However, Edgerton's creole technology contributes the idea that the new society which adopts the technology will also make their own additions and modifications to the technology.

One of the common themes between all three of these works is their meditations on the invisibility of the technologies and systems after they have become formalized. Edgerton argues that many of the technologies that make life run smoothly are old technologies that have becomes so common and readily used that they have been integrated into the infrastructure of daily life and are no longer noticed. Turner also points out that that he has to work harder to excavate the previous view that computers were manifestations of bureaucratic, dehumanizing oppression because the rhetoric of personal computing has become so very entrenched in the assumptions of modern life. In fact, from Bowker and Star's discussion, the invisibility of these systems (until they break) indicate that these systems are an infrastructure that is so essential to the smooth functioning of our lives that they become invisible.

This isn't to say that the social conventions inevitably become technology; we should not assume that the endpoint of every social convention is some kind of new, formal rule. On the contrary,

social conventions may well never be adopted into the formal set of rules or classifications. In this perspective, the development of social conventions around technology is part of an iceberg of rules both formal and informal, tacit and explicit, and the informal rules that are the most useful, whatever that means, become added into the system of formal rules. As Bowker and Star in particular emphasis the additive, historical nature of the systems of classification. Within this category, which I've previously mentioned have a strong correspondence to historical-style work, the emphasis is on systems of rules that are additively developed. So in this case, the answer that the "building" group give to the question of where the technologies and infrastructures of formal rules come from, would be the social conventions that are developed over time. This may be a result of the stronger historical focus in these works.

Social Conventions Supplement Technologies

Social conventions may be for adding layers or nuance to systems that had been designed to be more standard. Wajcman, boyd, and Schull all have books that investigate the kinds of complex systems of social conventions around technology, and their interactions with the technology. This section will focus strongly on the ethnographic works of boyd and Schull, as Wajcman's work will be used to fill out the theoretical reading of the idea that social conventions interact with technology. However, one useful overarching insight from Wajcman the emphasis on the material experiences of the people interacting with technology. In this way, the people who develop their practices for dealing with the technology always do so from within the context of their lived experience.

For those authors who are interested in the social as supplementing the technological, they tend to see people's lived experience with the technologies layering onto the technology. The main pattern between these works could be read as: these technologies are actually somewhat simple tools, but the complexity and nuance and significance is something that the people who use them bring in. Schull is

interested in reconciling and explaining the lived experience of the gamblers in the context of their interactions with technology. For the gamblers, Schull depicts the social processes of gambling addiction as experiences through their bodies, within their circumscribed pathways dotted with different spaces for gambling. Schull includes the maps her interviewees draw of their daily routines and in her intimate descriptions of the experience of a flow state. The sensations of gambling addiction are difficult to describe to outsiders, and Schull devotes time and energy to accurately and respectfully portraying the complex calculus that gambling addicts employ while playing or while orienting their activities around gambling. There are complex rituals for selecting which games to play and which machines to use in which area of the casino, for putting money in the machines, for speeding up gameplay. Gambling addicts share the social awareness of what the experience of gambling is to the extent that they can viscerally recognize the same patterns in others. Similarly, danah boyd's *It's complicated* demonstrates the many complex social mores teens develop and deploy for injecting nuance into their social media use and for adjusting the otherwise inflexible systems of social media to better cater to their interests and needs for control over their social lives. For example, while there are few formal privacy protections in place for teens as social media profiles are "public by default and private by effort" teens have developed many complex informal strategies for exerting greater control over who sees what elements of their online personas. However, the really interesting thing is the ways that teens actually spin together and push forward the norms on the platforms they use that will work for them and their communities--varying levels of success with each of these, and continuously renegotiated. Much of what teens have to do online is to navigate the different contexts that go along with each platform--through its architecture as a social media site, and through the different groups that they encounter on each site.

In a like manner, both teenage internet norms and ritualized gambling behavior are challenging for outsiders to understand, but within each respective ingroup, the apparently baffling morass of rules has a clear logic to its regular users. There is a largeness both boyd and Schull depict about the social

conventions around both internet culture and gambling that they imply cannot easily be captured in their formal accounts, with each offering space through drawings, narrative accounts, and detailed accounts of interviews. These types of full universes of social and cultural norms surrounding the technologies of gambling machines and online social hangout spots do not necessarily require formal rules, nor would either of these types of social activities be helped by the standardization or formalization of their mechanics, in the view of boyd and Schull. boyd describes these strategies not in anticipation that they will ever be adopted or absorbed into Facebook's practices, nor does she expect that these strategies will remain viable in the long term—in fact, in boyd's introduction she acknowledges that the social conventions surrounding social media use are evolving so quickly that many of the particularities of her book will be out of date at the very time of publication.

The tacit knowledge of social convention and the personal and social experiences of gambling addiction are not frequently integrated into the technologies, whether virtual or physical, that these experiences coalesce around. However, even without an official record attached to the technologies of the gambling machine, the designers and purveyors of the casinos and the gambling machines can still unofficially cultivate just enough knowledge of these tacit social conventions in order to deploy them to devastating effect, even as they withhold the official record of these tacit knowledges off their official records. In this way, while awareness of these social conventions around gambling machines is present in both the populations of gambling addicts and the designers, these social conventions layered on the machine are experienced and enacted in different ways.

Social conventions are also helpful for hinting at the tacit social dimensions that cannot be stated or defined directly. However, sometimes the reason why these tacit social dimensions cannot be stated directly is that they are nefarious, as in the case of the gambling machines in Schull's *Addiction by Design*. As Schull interviews game designers and casino managers, the social conditions surrounding the gambling machines, with their addictive potential is an open secret or a carefully elided truth (to be

more direct) amongst the designers, casino managers and those who profit off them. While the technology of the machines themselves is constructed to appear to outsiders and monitoring agencies as relatively straightforward, the rest of the stuff around the machines is what really makes them addictive—the careful social engineering of the design of the casinos, the ergonomic seats, the carefully crafted human-based design features—but the makers of these machines keep going a kind of social firewall, as they insist that these more social elements, i.e. the addictions of the people at the machines, are actually separate from the technology itself.

Schull does not herself believe in the separateness of the social elements of gambling addition from the technological machines themselves, but her interest is in depicting the additive ways that the social conditions layer on the gambling machines to make these deadly conditions, while still allowing space for plausible deniability among the designers. In this way, it seems that power dynamics to acknowledge or ignore the social experiences of the users of these spaces will remain in play, as one of the moves for those who hold control over the technology or the platform can decide which, if any elements of the social conventions of its users will be formalized or reflected in the technology. In the case of the gambling machines, while some of the conventions, like the user preference for faster gameplay will be seized upon and implemented, the full accountability that the reason gameplay is being sped up in these subsequent iterations of gambling machines will be left unspoken, as a means of exercising power over the players.

Wajcman would argue that the meaning of the technology is constructed out of the ways that the actors in the real world use and interact with the technology. On the other hand, the potential of *Technofeminism* is a call to interrogate the interactions of technology with people of all genders to assess within the context of peoples lived experiences with technology to determine whether and to what degree the technology is helpful or not. Wajcman gives the example of how computing came to be seen as a masculine field, not because of characteristics of computing or of women or of men. Rather

because men who are predominant in the field have constructed the in-group identity of the hacker around themselves. Women who wish to enter the field have to resign portions of their identity to fit in, and they are not willing to do this. In Wajcman's view, it seems that social conventions are useful for lending additional flexibility to technologies and systems to bend them farther towards what the society actually wants. But the key insight then is that because technology and social conditions are co-constructing, while the appropriate employment of certain kinds of technology may affect the ability of those of all genders to move freely through the world. In this way, the uses of technology have the capacity to contribute towards gender equity, but not in a utopian way. In the more measured sense that technologies can ease time and material demands when the right kind of social will to work towards gender equity is in place.

Section 4: My Turn Toward Science of Science Metadata

I approach this question as someone who uses quantitative methods to study something that many (including me) believe is pretty damn social! Although I have these big datasets of empirical data about who published what and how often (etc.) the way to make sense of this data is to draw on what we know about how the interpersonal work of the research lab gets done. So I'm looking to this literature for useful ways to think through how to bring tacit knowledges about social conventions to bear in empirical research, and what pitfalls I need to be careful about when doing so.

Essentially my major belief is that while some mismatches between the data and the social experience of the people in the field is inevitable, it's possible and valuable to use some knowledge of the unofficial conventions that appear as subtle patterns in the data to bridge this gap. In this case, the idea that a strong knowledge of social conventions supplements the technologies of paper metadata collection and processing

I see myself as more part of the social conventions build into technologies set because social conventions about co-authorship and author order are more useful to me the more formal they get. As I frequently encountered in my research for question 3, there are lots of growing and solidifying social conventions about co-authorship. Some of these conventions are in the process of being legitimated. For example, contributor statements that describe the actual contribution of each author are awesome, and more journals are starting to require them. I want this. Also, alphabetical authorship is also becoming less common, which is good for me.