STAGES OF TECHNOLOGY

Performance and Production in the Tech Industry

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Abstract

Stages of Technology: Performance and Production in the Tech Industry investigates live presentations of emerging technology under late capitalism. Employing feminist theories and methods, the dissertation proceeds through a series of case studies, analyzing how the work of promotional presentation transcends tech industry labor hierarchies. I examine tech demos delivered by (1) corporate CEOs at the pinnacle of the industry who unveil products during keynote addresses, (2) founders of startups just getting off the ground who craft pitches for funding competitions, and (3) models hired to represent companies at tradeshows who debut new technologies on the show floor. Forging connections between media studies and performance studies, this research shows how corporate unveilings of new technologies establish product narratives; how investors evaluate tech startups' presentational aesthetics; and how the affective labor of tradeshow models creates the ambiance of tech exhibitions despite their exclusion from industry discourses of tech work. Across each of these studies, I argue that live performance shapes the meaning of emerging technology throughout its processes of production.

Live demos promise unmediated access to media technologies, while cultivating shared sensibilities among select groups of people in the same room at the same time. Through spectacles staged at tech conventions, companies negotiate cultural meanings of emerging technology in advance of its commercial circulation. These presentations variously provide discursive frames for technologies without clear cultural resonances or rearticulate familiar technologies by supplying them with new valences. By attending to the role of promotional spectacle at tech industry events, the dissertation shows how live performance legitimates the industrial imagination of emerging technology.

Résumé

“Mises en scène de la technologie: Performance et production dans l'industrie technologique” étudient les présentations en direct des téchnologies émergentes dans le cadre du capitalisme moderne. Employant des théories et des méthodes féministes, cette thèse est organisée autours d’une série d'études de cas qui analysent comment le travail de présentation promotionnelle dépasse les hiérarchies du travail de l'industrie technologique. J'examine desdémos technologiques données par (1) des PDG d'entreprises leader de l'industrie qui dévoilent des produits lors de discours d'ouverture, (2) desfondateurs des jeunes startups présentant leurs idées durant des concours de financement et (3) des mannequins embauchés pour représenter des entreprises durant des salons professionels lançant des nouvelles technologies pendant leurs évenements . En formantdes liens entre les études médiatiques et les études de la performance, cette etude montre comment les dévoilements d’entreprise des nouvelles technologies établissent des récits à propos des produits; Comment les investisseurs évaluent l'esthétique de présentation des startups technologiques; Et comment le travail affectif des modèles de salon crée l'ambiance de l'exposition technologique malgré leur exclusion des discours industriels du travail technologique. Dans chacune de ces études, je soutiens que les performances en direct façonnent le sens de la technologie émergente tout au long de son processus de production.

Les démonstrations en direct promettent un accès immédiat aux technologies des médias, tout en cultivant simultanément les sensibilités partagées entre certains groupes de personnes dans la même salle. Grâce aux spectacles organisés dans les conventions technologiques, les entreprises négocient les différentes significations culturelles de la technologie émergente avant leur circulation commerciale. Ces présentations fournissent soit des cadres discursifs variés pour des technologies qui sont sans résonances culturelles claires, soit des réarticulations de technologies familières en leur apportant de nouvelles valences. En étudiant le rôle des spectacles promotionnels dans les événements de l'industrie technologique, cette dissertation démontre comment les performances en direct légitiment l'imagination industrielle de la technologie émergente.

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Preface

This dissertation is a work of original research by the author. Field research conducted as part of this project received ethics approval from the Research Ethics Board of McGill University, files 157-1014 and 417-0415.

Preliminary findings of the research detailed in Chapter 2 appeared on *Antenna*, published by the Department of Communication Arts at the University of Wisconsin-Madison. See Li Cornfeld, "Disrupt San Francisco: TechCrunch Puts Startups Onstage," *Antenna*, September 30, 2015, http://blog.commarts.wisc.edu/2015/09/30/disrupt-san-francisco-techcrunch-puts-startups-onstage/.

Portions of Chapter 3 are in process for publication with *Feminist Media Studies*. See Li Cornfeld, "Babes in Tech Land: Expo Labor as Capitalist Technology's Erotic Body," *Feminist Media Studies* 18:1. (Forthcoming; available online first in March 2017): 26 manuscript pages, doi:10.1080/14680777.2017.1298146.

Introduction

Red velvet curtains hang over a white foamcore stage. A clock, fixed to the wall above the curtains, runs a countdown. *Seven minutes*.

An engineer wedges himself behind the curtains. In the narrow space, he clears the stage from the previous performance. *Five minutes*.

An audience gathers around the stage. Black netting, draped around the stage on all three sides, separates the audience from the performance space. *Three minutes*.

Backstage, the engineer cues up the music. A second engineer checks that all of their controllers are in order. *One minute*.

Spectators in the front rows reach for their phones. They open camera and video apps, then thrust the phones through the netting. *Showtime*.

The curtains part: a fleet of drones gleams in the light behind them.[1]

The first drone theater, erected by the Parrot drone company, took place at the 2012 Consumer Electronics Show. Now officially known as CES, the annual tech trade show has showcased Parrot's drone ballets ever since. Nestled into a second-floor corner of the Las Vegas Convention Center, Parrot's red-curtained stage makes explicit the theatrical frame of tech demonstration. Presentational spectacles, staged at industry events, invite audiences to collectively engage with the futures heralded by emerging technology. As the largest tech convention in the world, CES in fact encompasses multiple forms of theatrical presentations. During keynote sessions, billionaire CEOs address ballrooms filled to capacity. At pitch-off

[1] Parrot, "Parrot Bebop Dance" (CES, Las Vegas, January 8, 2015).

contests, aspiring entrepreneurs compete onstage in quests for prize money and industry adulation. And in the exhibition halls, companies stage spectacular demonstrations, in order to catch the attention of investors, distributors, and journalists roaming the show floor. Across each of these types of presentations at a range of industry sites, this dissertation will investigate how technology emerges through acts of live performance.

To prepare for the tradeshow, Parrot's engineers and marketers spend two to three months working in collaboration, devising an exhibition that always includes drones dancing to a musical score. The drones, that is, flit back and forth through the stage space, in time with the music. For the 2015 "Parrot Bebop Drone Dance," one of two numbers staged at that year's CES, Parrot commissioned an original electronic score. At various points during the number, the drones assembled mid-air for a kind of line dance; partnered off, in a series of duets; and executed complex group formations, like flying Busby Berkeley chorines. Behind the performance space, hanging down from the ceiling in a manner suggestive of flight, touchscreens featured video and information on Parrot products. Beside the screens, headphones rested on white stands, lined with fresh greenery. A stark departure from images of drones as technologies of desert warfare used in the U.S.-led war on terror, Parrot's display suggested, by contrast, lightness and lushness.[2]

The ballet itself re-articulates drones as innovative playthings, rather than as militaristic killing machines. All entertainment technology, Friedrich Kittler famously surmises, is an abuse

[2] See Lisa Parks, "Drones, Infrared Imagery, and Body Heat," *International Journal of Communication* 8 (October 30, 2014): 4; Peter M. Asaro, "The Labor of Surveillance and Bureaucratized Killing: New Subjectivities of Military Drone Operators," *Social Semiotics* 23, no. 2 (April 1, 2013): 196–224, doi:10.1080/10350330.2013.777591.

of military equipment.[3] Because militarized states invest in technological advancement during wartime, Kittler situates radio, film, and television as military technologies, redeployed by the media industries for entertainment purposes.[4] If, in our own historical moment, drone technology is on the cusp of a similar industrial repurposing, Parrot's dance routines show how live presentations at tech conventions work to normalize civilian "abuse." Kittler draws inspiration for the maxim from a German army commander who, upon learning that WWI trench crews had used "army radio equipment" to broadcast music and news, forbade any such "abuse of military equipment" from continuing.[5] Yet although Kittler's materialist approach to media rejects the application of "meaning" to technology as illusory, the very notion of "abuse" in this foundational anecdote shows how technological use depends on meaning.[6] More importantly, the edict illustrates how the meanings that accrue to emerging technology, rather than stem strictly from their technical affordances, arise through processes of social negotiation. Technology users (like the WWI trench crews) and regulators (like their commanding officer) each participate in shaping the meaning of emerging technologies. So too does industry itself. In other words, technology companies engage in social negotiation over the purposes and practices associated with their products, because the meaning of technology is not incidental but integral to its adoption.

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[3] Friedrich Kittler, *Gramophone, Film, Typewriter*, trans. Geoffrey Winthrop-Young and Michael Wutz (Stanford: Stanford University Press, 1999), 96–97.

[4] Ibid.; ibid., 128; Friedrich A Kittler, *Optical Media: Berlin Lectures 1999*, trans. Anthony Enns (Cambridge: Polity, 2010), 221.

[5] Hasso von Waddel quoted in Kittler, *Gramophone, Film, Typewriter*, 96.

[6] Kittler, *Optical Media*, 30.

In *Stages of Technology: Performance and Production in the Tech Industry*, I argue that live performance functions as one of the ways that industry negotiates the social meaning of technology, early in its emergence. The dissertation studies theatrical spectacles staged by a range of workforces involved in the introduction of new technologies: (1) Corporate CEOs who unveil new products during keynote addresses; (2) startup founders who craft product pitches for funding competitions; and (3) models hired to present new products at tradeshows. These case studies show that labors of performance transcend industry labor hierarchies: leaders of major corporations, founders of small companies, and temporary workforces all engage in promotional spectacles that set the cultural tone of technology's emergence. My research demonstrates how corporate unveilings of new technologies establish product narratives; how investors reward sophisticated presentational aesthetics at competitions ostensibly focused on technology and finance; and how the affective labor of tradeshow models creates the ambiance of tech exhibition despite their exclusion from industrial discourses of tech work. Critical attention to these promotional spectacles shows how media and technology industries, in anticipation of user agency, prompt particular understandings of new technologies through live, theatrical performance. More than just spin, a public relations effort to apply an appealing gloss to something with an obvious or objective meaning, these presentations variously provide discursive frames for technologies without clear cultural resonances or rearticulate familiar technologies by supplying them with new valences. By attending to the role of promotional spectacle at tech industry events, this dissertation shows how live performance legitimates the industrial imagination of emerging technology.

The Parrot drone ballets provide an especially illustrative example of how companies make implicit claims about technologies' social implications and market value through

performance. Employing spectacular methods of live engagement to rearticulate a technology, the Parrot drone ballets align with principles set forth by one of the earliest guides to tradeshows and exhibitions. Published in the United States in 1968 by the Association of National Advertisers (ANA), the handbook defines corporate exhibition as a "medium" not only for "selling" but also for "the communication of ideas."[7] Choreographed through months of planning by a team of engineers with a fleet of drones at their disposal, Parrot's dancing drones demonstrate not how a typical user might engage with the product, but that a device widely understood as a technology of destruction contains untapped creative possibilities. Moreover, as an elaborate demonstration of technological novelty, the ballets attract immense attention on the crowded tradeshow floor. By amassing crowds of investors, distributors, and journalists to behold the spectacle, together as a collective audience, the ballets point to an expanded commercial future for a technology more closely associated with war than with whimsy.

If an exhibition is a medium, as the ANA proposed in 1968, its mode of communication is rooted in live performance. "An exhibit is not a three dimensional advertisement," cautions the ANA. Rather, it advises companies to regard exhibition as a medium for "direct contact" with convention-goers."[8] With italics for emphasis, the handbook pronounces: "*Live demonstrations or audience participation are the prime requisites of a good show*."[9] Put a different way, the ANA sees these sites as valuable because of the connections that companies can forge with prospects through live engagement, and encourages exhibitors to stage spectacles that exploit the

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[7] Donald Goodale Stewart, *Trade Shows and Exhibits: A Handbook on the Creation, Execution, and Evaluation of Trade Shows and Exhibits as Marketing Tools* (New York: Association of National Advertisers, 1968), iii.

[8] Ibid., 1.

[9] Ibid., 37.

affordances of the live encounter. Even as the midcentury manual has long since gone out of print, the principles of exhibition it set forth have become standard corporate practice. Echoing the ANA handbook's remarks about the differences between advertising and exhibition, an Adobe executive recently told me that the company's annual conference, a multi-million dollar affair, is "different from a Super Bowl commercial" because it enables the company to launch products in front of "people who are there." At tech showcases, *live demonstration* provides the "people who are there" with a sense of unmediated access to media technology. Since Adobe began hosting annual conferences a decade ago, the size and scale of the events have grown increasingly larger and more elaborate, part of an industry-wide trend in live spectacles hosted by media and technology organizations. This dissertation looks at some of these events in order to analyze the role of live performance in the rollout of emerging technology.

In writing about *performance* at these sites, I focus on live acts of theatrical presentation. As concepts, theater and performance have related but distinct intellectual histories. "Derived from the Greek word for seeing and sight, *theater*, like *theory*, is a limiting term for a certain kind of spectatorial participation in a certain kind of event," observes Joseph Roach. "*Performance,* by contrast…embraces a much wider range of human behaviors," including performances of the everyday, where distinctions between performer and spectator are blurred.[10] Under Roach's framework, the conferences and tradeshows studied here involve both theatrical performance as well as performances of the everyday. First, as networking events, they function as the latter: business networking requires particular performances of the self, in which

[10] Joseph Roach, "Culture and Performance in the Circum-Atlantic World," in *Performativity and Performance*, ed. Andrew Parker and Eve Kosofsky Sedgwick (New York: Routledge, 1995), 46. Original emphases. In critical practice, these terms sometimes overlap, particularly historically, as in Erving Goffman's application of theatrical frames to everyday social interaction. See Erving Goffman, *The Presentation of Self in Everyday Life* (New York: Anchor, 1959).

participants "perform" their professional identities while observing and responding to the social performances of those around them. At the same time, as sites of spectacular presentation, tradeshows and conventions also involve performance in the theatrical sense: product unveilings, pitch presentations, and tradeshow exhibitions each constitute "certain kinds" of theatrical events, with explicit distinctions between performers and spectators.

The spectacular presentations staged at these events receive regular coverage in both popular press and business news outlets. Yet few critical studies of emerging media address these spectacles, perhaps reflecting a reluctance to ascribe substantive import to acts of promotion. By contrast, the interpersonal modes of performance required by professional life have attracted critical attention at least since C. Wright Mills' midcentury sociologies of the American middle class. More recently, as I will discuss in a moment, scholars from a diverse range of fields have theorized professional networking events, including tradeshows and conferences, with attention to performances of the everyday.[11] Performance functions as a useful frame through which to consider sites of labor in part because, as Roach argues, "it frequently makes reference to theatricality as the most fecund metaphor for the social dimensions of cultural production."[12] However, at industry conventions where companies introduce new technologies, theatricality is more than metaphorical. Here, I apprehend promotional presentation as acts of theatrical performance in order to theorize live spectacle as part of the cultural production of media and technology.

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[11] C. Wright Mills, *White Collar: The American Middle Classes* (Oxford: Oxford University Press, 1956); Hans Heinrich Gerth and Charles Wright Mills, *Character and Social Structure: The Psychology of Social Institutions* (Harcourt, Brace, 1953). For a study of corporate performance culture analyzed through performance studies frames, see Jon McKenzie, *Perform or Else: From Discipline to Performance* (New York: Routledge, 2001).

[12] Roach, "Culture and Performance in the Circum-Atlantic World," 46.

In terms of *production*, I analyze the commercial development of media and technology, situated as cultural commodities. Cultural production, in Pierre Bourdieu's sense, entails the interplay of individuals as well as institutions, all wielding varied degrees of power, rather than from singular autonomous creators.[13] Although Bourdieu's chief concerns center on aesthetic traditions in literature and art, these frameworks likewise apply to the contemporary production of media and technology. For instance, in theorizing the contemporary media industries, Jennifer Holt and Alisa Perrent approach "culture and cultural production as sites of struggle, contestation, and negotiation between a broad range of stakeholders," which include, "not only sectors of industry and government but also 'ordinary people' (e.g., media users/consumers/viewers.)"[14] Following Holt and Perrent, we might say that tradeshows and conferences serve as literal sites of negotiation among this first category of stakeholders. Tech conventions attract professionals from a broad array of sectors involved in the industry. The products on display at these showcases belong to the companies that exhibit and demo them. Through presentation, these companies appeal to the professional audiences at the show for their participation in the production process. They may seek partnerships with investors, distributors, manufacturers, or companies developing products in other categories. From tradeshow exhibitions to pitch presentations, before commodities circulate in commercial markets, their production frequently hinges on the ways in which they are articulated through live performance. The conversations that follow these performances can involve financial negotiations or debates

[13] Pierre Bourdieu, *The Field of Cultural Production: Essays on Art and Literature*, ed. Randal Johnson (New York: Columbia University Press, 1993), 29–31.

[14] Jennifer Holt and Alisa Perren, eds., *Media Industries: History, Theory, and Method* (Chichester: Wiley-Blackwell, 2009), 5.

over technical standards; the performances themselves propose products' cultural meanings. These negotiations shape the products that "ordinary people" use, consume, and view.

Companies with the power to leverage lucrative partnerships can more forcefully propose social applications and set technical standards. Indeed, for David Hesmondhalgh, the Bourdieuian tradition illuminates contemporary forms of cultural production in that it "links dynamics of power in the cultural industries with questions of meaning."[15] Or, as the Adobe executive told me, "putting together a big event, bigger and better than anywhere else," establishes a company's position as a "thought leader." In other words, elaborate spectacles both articulate meanings of emerging technology and also signal a company's industrial authority. What Hesmondhalgh describes as "the structured nature of making symbolic goods, and the way that the social making-up of the rules surrounding such activities is hidden from view, or misrecognized," underpins the theatrical performances staged at tech conventions, which ascribe meaning to emerging products through industry convention.[16] These performances are conventional in both senses of the words: they take place at sites of cross-sector convergence and they establish cultural norms among the tech industry insiders in attendance.

Finally, the *tech industry* is itself an industrial articulation. In both popular and professional discourses, the tech industry is taken to be a self-explanatory business sector that produces technology. In North America, at least, the tech industry is roughly synonymous with Silicon Valley. Both terms first emerged in the 1970s, alongside the beginnings of commercial

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[15] David Hesmondhalgh, *The Cultural Industries*, Third edition (London: Sage Publications, 2013), 50.

[16] David Hesmondhalgh, "Bourdieu, the Media and Cultural Production," *Media, Culture & Society* 28, no. 2 (March 1, 2006): 216, doi:10.1177/0163443706061682.

computer production that took root in northern California.[17] Today, computers occupy a prominent place within the tech industry; CES, where Parrot stages its drone ballets, sees its highest number of registrations from attendees who work in computer hardware and software.[18] However, they make up less than 15% of the show's total attendance, which has climbed to more than 175,000 people each year. Officially, the tech tradeshow encompasses 20 official categories, ranging from "3D Printing" and "audio" to "vehicle technology" and "wearables."[19] The scope of product categories recognized by the annual gathering of the global tech industry indexes the economic and cultural rewards that accrue to companies identifying as part of "tech." Venture capitalists, seeking investments with rapid growth potential, increasingly identify technology with scalability, which makes business owners in search of funding eager to articulate their enterprises as tech companies. At the same time, media outlets regularly cover new tech ventures as heralding future social trends, lending a cultural cache to fields that define themselves as tech sectors. Moreover, the wide array of industry verticals that participate at CES indexes the desirability of cross-sector partnerships in an era of heightened industrial conglomeration, as when a car company partners with an audio company, or a social media company buys a virtual reality company. Foregrounding "technology" as the industry's primary organizing principle both occludes cultural distinctions between different product categories and rearticulates their

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[17] While "Silicon Valley" has, from the beginning, been the more popular term, both have appeared in published books with increasing frequency over time. See "Google Ngram Viewer," accessed June 11, 2017, https://books.google.com/ngrams/graph?content=Silicon+Valley%2Ctech+industry&year_start=1800&year_end=2008&corpus=15&smoothing=7&share=&direct_url=t1%3B%2CSilicon%20Valley%3B%2Cc0%3B.t1%3B%2Ctech%20industry%3B%2Cc0.

[18] Veris Consulting, "Attendee Audit Summary" (Arlington: Consumer Electronics Association, 2015), 7; ibid.

[19] Vault Consulting, "Attendance Audit Summary" (Arlington: Consumer Technology Association, 2016), 3.

social significance in terms of technological development. In writing about the tech industry, I look to some of its high-profile gatherings as cultural sites where industry insiders converge to negotiate the products, and product categories, that will drive the future of the field.

Although companies involved in the tech industry exist all over the world, Silicon Valley continues to be synecdochic for the tech industry. Major tech corporations that lead the industry, such as Apple, Google, Facebook, and Netflix, all have headquarters in the San Francisco Bay Area. Hardware and software production, internet search engines, social media networks, and film and TV subscription services each represent a different vertical—and each of these, just a portion of the verticals that comprise the tech industry. The U.S. trade organization that represents the industry cited leadership in social media companies as well as car makers and sharing economy platforms when, in the fall of 2015, it adopted the name Consumer Technology Association (CTA). Up until that point, it had been the Consumer Electronics Association, however, as CTA President Gary Shapiro explained at a press conference announcing the name change, *technology* more suitably aligned with the expansion of a field increasingly "based around the internet" as well as "wearables."[20] The CTA owns and operates CES, and although the signature tradeshow, which enjoys a global reputation, would not undergo a similar name change, Shapiro urged reporters to refer to it only as "CES," because references to "electronics" rather than "technology" would not clearly reflect the exhibition.[21] In other words, the very capaciousness of the term "technology" enables it to articulate a broad array of product categories as a single economic sector. That singularity gives the tech industry economic power and cultural capital. For instance, besides running one of the largest tradeshows in the world,

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[20] Gary Shapiro, "Press Conference" (CES Unveiled New York, New York, November 10, 2015).

[21] Ibid.

some of the CTA's primary activities include lobbying congress for the relaxation of regulatory measures unfavorable to the industry and establishing technical standards for industry-wide adoption. As the trade group's ranks have swelled, so too has its negotiating power.

When the history of the formation of the industry we now call "tech" is written, the annals of the Consumer Electronics Show might be a good place to start.[22] First held in 1967, the tradeshow featured what was then known as home-entertainment: radios, record players, televisions, and tape recorders.[23] The proliferation of product categories on display at CES today partly reflect the expansion of technological development in the twenty-first century, however the 1960s saw its own period of burgeoning technological innovation. "Considering the name Consumer Electronics Show," remarked the *Radio-Electronics* trade journal, "we expected a lot of other kinds of equipment: garage-door openers, burglar alarms, and even solid-state appliances. Not so."[24] However, exhibitors interpreted the limited product categories at the show

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[22] Although a historical study of the "tech industry" as such does not yet exist, indications of its formation exist in histories of the computer industry and labor ethnographies of tech work cultures. See Alice E. Marwick, *Status Update: Celebrity, Publicity, and Branding in the Social Media Age* (New Haven: Yale University Press, 2013); Gina Neff, *Venture Labor: Work and the Burden of Risk in Innovative Industries* (Cambridge: MIT Press, 2012); Thomas Streeter, *The Net Effect: Romanticism, Capitalism, and the Internet* (New York: New York University Press, 2011); Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: University of Chicago Press, 2010); Andrew Ross, *No Collar: The Humane Workplace And Its Hidden Costs* (Philadelphia: Temple University Press, 2004).

[23] Most of the products on display at the first CES would today be categorized by the tradeshow as part of its audio product division, which reflects the show's roots in the National Association of Music Merchants (NAMM), where most early exhibitors had previously shown their products. In a declaration of industrial independence, the first CES was held in New York and specifically scheduled to coincide with the NAMM show in Chicago, forcing conference-goers to choose which show to attend. A fuller history might examine this history alongside the roots of other verticals which the tech industry now encompasses.

[24] Unnamed exhibitor quoted in "First Consumer Electronics Show," *Radio-Electronics*, June 1967, 57.

as an asset. "For the first time, we have a show of our own," one of the 100 or so exhibitors who had reserved space at the show told *Radio-Electronics*, "one in which we can see the people…directly concerned with our segment of the home-entertainment field."[25]

Although this dissertation is primarily concerned with articulations of the contemporary tech industry, rather than with its historical formation, *Radio-Electronics*' coverage of the inaugural CES is instructive for three key reasons. First, beyond making clear that uncertainty over the product categories indicated by "consumer electronics" has plagued the show from its inception, the trade journal's professed confusion illustrates how titles given to emerging market sectors are acts of industrial articulation, with room for negotiation. Second, it suggests that, if the 20 separate product categories now recognized by CES reflect contemporary advances in technological development, so too do they reflect shifts in industrial ideology. Where the first CES sought to define a newly emerging sector by limiting the kinds of products on display, today the trade organization defines itself as an umbrella group for an ever-increasing number of verticals involved in technical production. Finally, the trade journal's coverage of the first CES points to how a tradeshow, where members of an industry assemble to network and display their wares, serves as a site through which an industry begins to form.

The very concept of a tradeshow – a site where companies show their trade – makes plain the utility of spectacle to capital. Indeed, the "trade" in "tradeshow" is often taken to indicate the act of selling.[26] However, at many industry conventions, few direct sales take place. Instead, exhibitors' objectives center on establishing and cultivating business relationships, which they

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[25] First Consumer Electronics Show, 57.

[26] Michael Andreae, Jinn-yuh Hsu, and Glen Norcliffe, "Performing the Trade Show: The Case of the Taipei International Cycle Show," *Geoforum* 49 (2013): 193, doi:10.1016/j.geoforum.2013.07.003.

accomplish by *debuting* products for prospective partners, rather than by selling them. The etymology of "tradeshow" in fact accounts for this industrial focus: both halves of the compound word come from nouns, not verbs.[27] Strictly speaking, a tradeshow is a show of trade—or, less awkwardly, an exhibition of commercial goods. Throughout the dissertation, I examine multiple forms of exhibitory spectacle at industry showcases devoted to the introduction of commercial technologies. This research furthers a history of critical attention to such events, detailed in the next section.

Critical approaches to spectacle and exhibition:
Tradeshows and tech demos

When Walter Benjamin writes of the "phantasmagoria" of the nineteenth century, he describes an aesthetic transformation of objects as well as people, places, and experiences into commodities, a version of Marx's commodity fetish that operates through spectacularity.[28] Not coincidentally, Benjamin links this process to commercial exhibition. Looking to the Parisian arcades of the nineteenth century, Benjamin describes expos as "places of pilgrimage to the commodity fetish," which "open a phantasmagoria which a person enters" and "surrenders to its manipulations while enjoying his alienation."[29] However, if we look beyond world's fairs and instead turn critical attention to commercial spectacles closed to the general public – industry tradeshows and conventions – they tell a somewhat different story about the utility of spectacle to capitalist industry. There, it serves not only as an object or accessory of consumption but also

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[27] "Trade Show, N.," *OED Online* (Oxford: Oxford University Press, 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/423023.

[28] Walter Benjamin, *The Arcades Project*, ed. Rolf Tiedemann, trans. Howard Eiland and Kevin McLaughlin (Cambridge: Belknap Press, 2002), 14.

[29] Ibid., 7.

as the means of production itself. Attention to these sites shows the role that spectacle plays in cultivating business partnerships, inspiring industry norms and standards, advancing product prototypes, and establishing an industry's cultural practices.

Identifying performance as part of a landscape of promotional technics used to bring products to market, this project accords with heightened critical attention given to promotional culture more broadly. In the decades since Andrew Wernick first identified promotion as the dominant cultural condition of late capitalism, "the extension of promotion through the all the circuits of social life," has received much critical study.[30] These studies look far beyond the realm of advertising, with which promotions was historically associated. Where "promotional practice," in Aeron Davis's summation, was historically "driven primarily by the selling of goods and services," in recent decades, "practices of promotion have spread and come to influence society more generally."[31] *The Routledge Companion to Advertising and Promotional Culture*, for instance, includes sections on "everyday life," "social institutions," and "identities."[32] While these studies track the movement of promotional logics from consumer culture into culture writ large, this dissertation looks in the opposite direction. That presentational spectacles regularly take place at sites where different sectors converge suggests

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[30] Andrew Wernick, *Promotional Culture: Advertising, Ideology and Symbolic Expression* (London: SAGE Publications, 1991), 188.

[31] Aeron Davis, *Promotional Cultures: The Rise and Spread of Advertising, Public Relations, Marketing and Branding* (Cambridge: Polity, 2013), 1.

[32] Matthew P. McAllister and Emily West, eds., *The Routledge Companion to Advertising and Promotional Culture* (New York: Routledge, 2013). See also Gerald Sussman, ed., *The Propaganda Society: Promotional Culture and Politics in Global Context* (New York: Peter Lang Publishing, 2011), which begins with "the media" and then moves onto "public culture," "global hegemony," and "the state." See also Melissa Aronczyk and Devon Powers, eds., *Blowing Up the Brand: Critical Perspectives on Promotional Culture* (New York: Peter Lang Publishing, 2010), which includes a section on citizenship and another on the public sphere.

promotional performance shapes not only the ways that companies interact with consumers but also how they present themselves to other companies. In order to show the entrenchment of promotional logics in industrial production processes, I examine the promotional performances that take place when companies present themselves to one another, as part of the nexus of industry sites where products in production are showcased.

Until recently, these industry showcases garnered little attention outside of business discourse. Despite its industrial prominence, for instance, CES received minimal critical attention until 2007, when a group of cross-disciplinary scholars selected the show as a site of an experiment in collective research, dubbed "swarm scholarship." CES, writes Julian Kilker, constituted a provocative research site because "Las Vegas tradeshows…have not received in-depth research attention, and only the rare journalist attempts more than promotional coverage."[33] While most of the publications that emerged from the experiment focus on the efficacy of the research methodology rather on CES itself, these studies nonetheless identify the tradeshow as a rich site for critical research.[34] As Joy Pierce puts it, the tradeshow offers scholars "a remarkably intensive yet all too brief glimpse into not only the means through which

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[33] Julian Kilker, "Exploring a New Methodology: Background, Planning, and Lessons from the 2007 Tradeshow 'Swarm' Project," *Social Identities* 15, no. 4 (July 1, 2009): 436, doi:10.1080/13504630903043808.

[34] D. S. Conley, "Writing Like a Flock," *Social Identities* 15, no. 4 (July 1, 2009): 447–61, doi:10.1080/13504630903043816; Krista E. Paulsen, "Ethnography of the Ephemeral: Studying Temporary Scenes Through Individual and Collective Approaches," *Social Identities* 15, no. 4 (July 1, 2009): 509–24, doi:10.1080/13504630903043865; Lawrence Mullen, "Swarm Methodology: The Consumer Electronic Show, Contagion, and Visual Data Collection," *Social Identities* 15, no. 4 (July 1, 2009): 463–76, doi:10.1080/13504630903043824; Kilker, "Exploring a New Methodology"; Todd Jones, "Swarm Scholarship and the Fundamental Epistemology of the Collective Method," *Social Identities* 15, no. 4 (July 1, 2009): 495–508, doi:10.1080/13504630903043857; D. E. Wittkower, "Method against Method: Swarm and Interdisciplinary Research Methodology," *Social Identities* 15, no. 4 (July 1, 2009): 477–93, doi:10.1080/13504630903043832.

consumer technologies attempt to position their goods in a crowded marketplace, but also the producers' attempts to shape and reshape the socio-cultural signifiers surrounding these products."[35] Just a few years later, dancing drones would illustrate this point—as will multiple product presentations discussed throughout this dissertation.

The swarm scholarship project coincided with newfound critical attention to tradeshows more broadly. In a concurrent sociology of the fashion industry, for instance, Lise Skov writes of "the gap between the importance ascribed to fairs by fashion world members and their almost complete invisibility in academic analysis."[36] Her identification of tradeshows as "an overlay of different purposes and types of encounters, including trade, networking, and knowledge creation and dissemination," aligns with recent research in a variety of disciplines that have begun to apprehend industry showcases as sociocultural sites.[37]

In addition to the swarm study of CES and Skov's study of fashion fairs, tradeshows have begun to acquire some prominence among critical geographers as "temporary nodes that connect the global political economy."[38] At the same time, a variety of "temporary nodes" of industrial exchange have gained attention from film scholars, as part of the "industrial turn," in cinema and

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[35] Joy Pierce, "Giraffes in Zebra Skins: Researchers as Spectators at a Consumer Electronics Trade Show," *Social Identities* 15, no. 4 (July 2009): 427, doi:10.1080/13504630903043790.

[36] Lise Skov, "The Role of Trade Fairs in the Global Fashion Business," *Current Sociology* 54, no. 5 (2006): 764.

[37] Ibid., 765.

[38] Harald Bathelt and Nina Schuldt, "Between Luminaires and Meat Grinders: International Trade Fairs as Temporary Clusters," *Regional Studies* 42, no. 6 (2008): 855. See also Andreae, Hsu, and Norcliffe, "Performing the Trade Show"; Harald Bathelt and Ben Spigel, "The Spatial Economy of North American Trade Fairs," *Canadian Geographer* 56, no. 1 (Spring 2012): 18–38, doi:10.1111/j.1541-0064.2011.00396.x; Glen Norcliffe and Olivero Rendace, "New Geographies of Comic Book Production in North America: The New Artisan, Distancing, and the Periodic Social Economy," *ECGE Economic Geography* 79, no. 3 (2003): 241–63.

media studies, and the emergence of production studies, which assumes that, contra Hollywood production hierarchies, diverse forms of industrial labor jointly shape production. John Caldwell, for instance, looks to events that "facilitate 'inter-group' relations" between different segments of Hollywood as central to its cultures of production.[39] Caldwell advocates critical attention to tradeshows, in particular, in that they enable the formation of partnerships necessary to production while also serving as events where "practitioner groups suspend the day-to-day grind of work in order to collectively reimagine a common future or contested present."[40] He identifies such events as crucial but under-theorized sites of production precisely because, "by imagining—and showcasing—industrial possibilities on a liminal/corporate stage," they foster development outside the bounds of film studios.[41] A corollary process takes place in the tech sector, where industry showcases shape the production of technologies more readily associated with corporate labs or startup garages.

Tradeshows are but one industrial site examined by media industries studies. Caldwell, for instance, identifies "forms of symbolic communication *between media professionals*," at events that range from "technical bake-offs" to "how to make it in the industry panels."[42] Similarly, Charles Acland advocates critical attention to cross-sector conferences, regularly

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[39] John Caldwell, "Cultures of Production: Studying Industry's Deep Texts, Reflexive Rituals, and Managed Self-Disclosures," in *Media Industries: History, Theory, and Method*, ed. Jennifer Holt and Alisa Perren (Chichester: Wiley-Blackwell, 2009), 203.

[40] Ibid., 206–7.

[41] Ibid.

[42] Ibid., 202–3. Original emphasis.

called summits, "as though these are exercises in peacemaking among traditional combatants."[43] Arguing that scholarly attention to such sites illuminates the labor of naturalizing cross-sector media standards, Acland devotes particular attention to CES, where he locates a Hollywood-themed conference track, with specialized panels and presentations, as part of a rise in entertainment media and technology summits held multiple times a year. "Each iteration," he argues, assembles what industry agents are talking about *and* what industry agents *should* be talking about. A prevailing sense of privileged access to "what's next" pervades the panels and presentations."[44] These observations show that a tradeshow is but one spectacular mode of shaping the industry's sense of its future; conference panels and presentations constitute yet another.

To make sense of industry showcases, studies across each of these fields turn, at times, to texts foundational to performance studies. In theorizing the "liminal/corporate stage," Caldwell's production studies monograph draws on Victor Turner's theory of liminality, ritualized periods of creative generation outside the bounds of everyday life, in order to examine professional rituals as fecund sites of production."[45] Although liminal performance is ultimately of limited use to Caldwell, whose chief interest is not "the imaginative conditions of Turnerian performance" but the institutional powers that *precondition* them, his performance frame persists at the level of

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[43] Charles Acland, "Consumer Electronics and the Building of an Entertainment Infrastructure," in *Signal Traffic: Critical Studies of Media Infrastructures*, ed. Lisa Parks and Nicole Starosielski (Urbana: University of Illinois Press, 2015), 255.

[44] Ibid. Original emphasis.

[45] John Caldwell, *Production Culture: Industrial Reflexivity and Critical Practice in Film and Television* (Durham: Duke University Press, 2008), 108.

rhetoric: "Who scripts the industrial theater staged in these worlds?"[46] In both cases, what Roach calls "the social dimensions of cultural production" gain saliency through theatrical metaphor.[47]

Where Caldwell looks to anthropological performance, Skov turns to sociological performance. Theorizing the networks of buyers and suppliers established through tradeshow participation, she bases her analyses in Erving Goffman's "dramaturgical metaphors," which sheds light on the relational dynamics of tradeshow exhibitors to one another.[48] Most explicitly, geographers Michael Andreae, Jinn-yuh Hsu, and Glen Norcliffe propose "a preliminary theorization of performance at trade shows," which draws on numerous theories of performance in order to theorize the tradeshow as a cultural site.[49] They, too, invoke Turner to theorize the liminality of tradeshows, and Goffman to argue that, "many of our daily activities are culturally inflected and consciously performed."[50] Their documentation of performance at the tradeshow likewise includes Richard Schechner's theory of "restored behavior," performance that repeats previous acts, which frames their discussion of convention-goers' familiarity with the tradeshow circuit.[51] So too do they look to restored behavior in order to understand the "backstage activities" that go into devising an exhibition, including "advance work on sound and lighting, on the appearance of a trade booth, on the make-up and dress of performers, on preparing scripts

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[46] Caldwell, "Cultures of Production: Studying Industry's Deep Texts, Reflexive Rituals, and Managed Self-Disclosures," 108.

[47] Roach, "Culture and Performance in the Circum-Atlantic World," 46.

[48] Skov, "The Role of Trade Fairs in the Global Fashion Business," 766.

[49] Andreae, Hsu, and Norcliffe, "Performing the Trade Show," 193.

[50] Ibid., 193; 195. "Liminal performance" and "everyday performance" are, by definition, antonyms, though both in this case describe performances that take place as forms of social interaction rather than as spectatorial displays.

[51] Ibid., 195.

and prompts, and on the presentation of the products themselves."[52] In addition, they base their contention that "new products shown at trade shows may initially have an unstable identity" but that "through performance, an identity may be established," in Judith Butler's theory of performativity, the notion that meaning and identity accrue through acts of performance.[53] As these observations suggest, the authors reference what I am calling theatrical performance, that is, spectacles staged for designated spectators, as well as a broader sense of performance which entails multiple forms of social interaction (although their analysis rests more heavily on the latter). By "connecting performance theory with the economy," the geographers situate a site of commerce as a site of culture.[54]

Building on each of these studies of performance at industry showcases, my research looks at how the performance practices of these events constitute acts of cultural production. At the same time, as I discussed earlier, the dissertation focuses on spectacular presentation, which means that it concerns not only performance and performativity, which underpins any social interaction, but also theater and theatricality.[55] In other words, I am concerned not only with social or behavioral performance but also with the how the theatrical properties of the spectacle shape the production process. Here, I follow Josette Féral's contention that theatricality arises

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[52] Ibid., 196.

[53] Ibid., 195.

[54] Ibid., 193.

[55] Like performance, theatricality has its own history of metaphorical application to a range of social practices. As Tracy Davis and Thomas Postlewait surmise, "to some people, it is that which is quintessentially the theatre, while to others it is the theatre subsumed into the whole world." Here, I use the former sense of theatricality in order to distinguish the spectacles staged at tradeshows and conventions from the interpersonal and behavioral performance that also characterizes these sites. See Tracy C. Davis and Thomas Postlewait, eds., "Theatricality: An Introduction," in *Theatricality* (Cambridge: Cambridge University Press, 2003), 1.

from the theater's practices of representation. "The spectacle is the vehicle," argues Féral, for theatrical transformation, which "points out that signs and objects, displaced from their habitual context, signify differently."[56] Through the representational space of an exhibition, for instance, drones may signify balletic artistry.

Although tech demos rarely receive sustained critical analysis, they make regular appearances in histories of emerging media—some of which attend specifically to the role of theater and performance. Lisa Gitelman, for instance, looks closely at early phonograph demos, where "exhibitors made incongruous associations between well-known lines from Shakespeare and Mother Goose, between talented musicians and hacks like Edward Johnson, between animal and baby noises and the articulate sounds of speech."[57] Writing about the same exhibitions, Jonathan Sterne argues that since "the point was to demonstrate that the technology *could* reproduce sound" ostensibly any sound would have demoed the technology's functionality. However, in order to introduce the technology to audiences unfamiliar with it, "early 'performers' of sound reproduction helped listeners help the machine reproduce speech" by developing a repertoire of recognizable recordings.[58] In other words, these presentations successfully demonstrated the technology not only because of the device's technical capabilities but also because of the theatricality of the presentation.

The theatricality of the demo also provided audiences with frameworks for negotiating the cultural status of the phonograph. These presentations, argues Gitelman, cued audiences to

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[56] Josette Féral, "Foreword to Special issue, 'Theatricality,'" *SubStance* 31, no. 2 (2002): 11–12, doi:10.1353/sub.2002.0025.

[57] Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge: MIT Press, 2008), 35.

[58] Jonathan Sterne, *The Audible Past* (Durham: Duke University Press, 2003), 251. Original emphasis.

"laugh at the appropriate moments, recognize impressions, and be in on the joke. They could participate together in the enactment of cultural hierarchy."[59] In using performance as a means of guiding audiences to "draw and maintain their own distinctions,"[60] nineteenth century phonograph exhibitions are striking examples of what Féral describes as the core of theatricality: "a series of cleavages (inscribed by the artist and recognized by the spectator) aimed at making a disjunction in systems of signification, in order to substitute other, more fluid ones."[61] In other words, theatricality hinges on audience recognition of the representational practices employed by the spectacle, which propose new meanings for the objects and actors' onstage. Thus, at phonograph demonstrations, the theatricality of the demo provided audiences with new ways of perceiving a machine.

Tension between technical demonstration and theatrical showmanship vexed scientists of the electronic era. Carolyn Marvin's study of technical exhibition in the late nineteenth century documents early experts in electricity for whom "cheap dramatic effects" constituted an offence against the scientific order.[62] A contemporary variation of these concerns can be found in critical frustration with what Wendy Hui Kyong Chun describes as "theory that fails to distinguish between demo and product," an elision pejoratively referred to as "vapor theory."[63] Geert

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[59] Gitelman, *Always Already New*, 35.

[60] Ibid.

[61] Féral, "Foreword to Special issue, 'Theatricality,'" 10.

[62] Carolyn Marvin, *When Old Technologies Were New: Thinking About Electric Communication in the Late Nineteenth Century* (Oxford: Oxford University Press, 1988), 56.

[63] Wendy Hui Kyong Chun, *Programmed Visions: Software and Memory* (MIT Press, 2011), 20. For critiques of vapor theory see Peter Lununfeld quoted in Geert Lovink, *Uncanny Networks: Dialogues with the Virtual Intelligentsia* (Cambridge: MIT Press, 2004), 235–36; Alexander R.

Lovink, credited with popularizing the term, laments critical iteration of "neologism and sales talk" in studies of digital media. Mindful of these concerns, here, I regard the tech demo as neither a neutral description of the technology in question nor as superficial advertising. Rather, I seek a more nuanced understanding of the implications of the demo for the product on display.[64] My aim is not to elide distinctions between the demo and the product, but rather to put them into relation by analyzing the demo as a component of production. This research thus aligns with Chun's reclamation of the "vapory." Acknowledging that critical attention to digital media divorced from its social promise "has been crucial to the rigorous study of new media," she cautions that inattention to the vapory qualities of software can in fact over-determine critical understanding of emerging technology.[65] Where Chun engages in a rigorous study with the "soft" technics of software, my research here engages with promises of emerging technology that are still less technical, but no less subject to interpretation. Following Gitelman's influential definition of media as "socially realized structures of communication, where structures include both technological forms and their associated protocols," I identify the demo as one site in which these protocols take shape, ahead of a product's commercial circulation.[66]

To cue social understandings of emerging technologies, even ostensibly technical demonstrations regularly employ theatrical devices (albeit not usually on the scale of the faux-

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Galloway, *Protocol: How Control Exists After Decentralization* (Cambridge: MIT Press, 2004), 17.

[64] Lovink, *Uncanny Networks*, 235.

[65] Chun, *Programmed Visions*, 21. See also her insightful parenthetical: "if you take the technical definition of information seriously, information increases with vapor, with entropy."

[66] Gitelman, *Always Already New*, 7.

manifestations of spirits that so alarmed early electricians).[67] Consider, for instance, the most famous demo in media history: Douglas Englebart's 1968 conference presentation introducing the modern computer, including the computer mouse, word processing, and networked interactivity. By multiple accounts, audience members left the demo feeling forever changed.[68] Canonized as "The Mother of All Demos," the extensive scholarly attention heaped on the Engelbart demo speaks to the central role that demos play in the emergence of new technologies. "Most historians and theorists focus on the content of Engelbart's work," observes Chun, who counters that "the rhetorical devices used in his texts and the semiotics of his demo are crucial to understanding the seductiveness of his vision of interactive interfaces, a vision that many derided as insane."[69] For Chun, the visual imagery, discursive frameworks, and cultural memory of the Engelbart demo count among technology's vapory influences.[70] Analyzing these aspects of an ostensibly technical demonstration, Chun concludes that the Engelbart demo "has been so 'life changing' not simply because of the technology it featured, but also because of the images and visions of interconnectivity it established."[71] In other words, researchers who attended the conference came to understand new possibilities of computing in part through the spectacle staged by the demo, which invited audiences to view the technology as Engelbart did.

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[67] Marvin, *When Old Technologies Were New*, 60.

[68] Thierry Bardini, *Bootstrapping: Douglas Engelbart, Coevolution, and the Origins of Personal Computing* (Stanford: Stanford University Press, 2000), 138–42.

[69] Chun, *Programmed Visions*, 81.

[70] Ibid.

[71] Ibid., 85.

Performance characteristics of the Englebart demo surface in other media histories, as well. Indeed, even scholarship more concerned with what Chun terms "the content" of the Engelbart demo makes claims based on its performative stylistics. For instance, Lev Manovich's media history of software analyzes "the sequence of the demo," in order to show that Englebart moved most rapidly through "the set of tools which make the computer into a more versatile typewriter."[72] The theatrical characteristics of the Engelbart demo likewise factor into cultural histories of computing, as when Thomas Streeter analyzes the emergence of the computer as an interactive device by theorizing spectatorship. "In the standing ovation that concluded the presentation," argues Streeter, Engelbart's audience members "could know, they could *feel,* that there was a community of others who shared their convictions."[73] Streeter thus argues that demo derived its power not only by proposing that the computer could signify interactivity, but also by establishing "a shared meaning" among those in attendance.[74] To borrow Féral's terminology, this emerging meaning of the computer, "inscribed" by the artist/scientist and "recognized" collectively by the spectators, gave the demo its power.

A separate lineage likewise attests to the ways that performance girded the Engelbart presentation: its adaptation into opera, titled *The Demo*.[75] Devised by composer/performers Mikel Rouse and Ben Neill, the music theater piece plays video footage of the complete 1968 demo, set to a live performance of a score that calls for a chorus, keyboards and electronic samples; the singers chime in with Engelbart's recorded voice as he demos the computer, his

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[72] Lev Manovich, *Software Takes Command* (New York: Bloomsbury Academic, 2013), 72.

[73] Streeter, *The Net Effect*, 42.

[74] Ibid.

[75] Ben Neill and Mikel Rouse, "The Demo" (Opera, 2015).

words transformed into a libretto. In interviews ahead of the opera's 2015 premier, Rouse specifically cites the computer demo's innovative incorporation of media into live performance as inspiration for the adaptation.[76] In other words, what media researchers, with a few exceptions, have largely seen as incidental, the performance artists recognize as foundational: the performance that brought the trailblazing technologies to life.

By looking specifically at live introductions of technologies, this dissertation evidences the significance of live presentation in the cultural production of technology. Moreover, it shows that live performance occurs at multiple points in technology's emergence, and takes a variety of forms, which shape the emergence of technology in particular ways. In order to better understand not just that performance regularly shapes the introduction of new technologies, but to understand how it does so, I study tech industry performance practices across multiple sites, outlined below.

Structure of the dissertation:
Research methods and chapter breakdown

Inspired by production studies' call for media researchers "to look up and down the food chains of production hierarchies," the dissertation moves through three, multi-pronged case studies.[77] It proceeds by first looking "up," at the sensational product launches of Steve Jobs, perhaps the most celebrated business leader of recent history, who famously kept Apple's

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[76] John Markoff, "The Musical 'The Demo' at Stanford Recreates the Dawn of the Digital Age," *The New York Times*, March 25, 2015, sec. Music, https://www.nytimes.com/2015/03/26/arts/music/the-musical-the-demo-at-stanford-recreates-the-dawn-of-the-digital-age.html; Kyle Vanhemert, "The Most Epic Demo in Computer History Is Now an Opera," *WIRED*, March 30, 2015, https://www.wired.com/2015/03/epic-demo-computer-history-now-opera/.

[77] Ibid., 20.

products carefully guarded secrets until unveiling them during packed conference keynote addresses. It then looks "down," to prototype demos led by founders of companies just getting off the ground, presentations I locate at the "Startup Battlefield" of the TechCrunch Disrupt conference series. A high stakes pitch-off contest, the Startup Battlefield attracts companies with neither the financial capital, nor cultural import, nor business record of the corporations at the pinnacle of the industry. Finally, the dissertation returns to CES, the tradeshow formerly known as the Consumer Electronics Show. Analyzing the work of tradeshow models, women hired to wear eroticized costumes as part of tech exhibitions on the show floor, this last chapter looks at a workforce usually considered outside of the industry's hierarchies altogether. Individually, each of these chapters explores the role that live performance plays in shaping the emergence of technology; collectively, they evidence the ambiguous valuation ascribed to live performance under the late capitalist ideologies of the tech industry.

My methodological approach to this research employs what Caldwell terms a "cultural-industrial" analysis, which integrates multiple registers of information in order to enhance critical understanding of industry through qualitative research.[78] Cautioning that industry is "texturized" rather than transparent, Caldwell advocates that industrial discourses and disclosures "should first be approached as performance, as trade 'stagings,'" which requires that researchers ask themselves, "How have the disclosures in your research sector been scripted? What conventions or trade genres inflect the information you find?"[79] These guidelines are delightfully relevant to this dissertation, given its explicit focus on how trade stagings are shaped

[78] Caldwell, "Cultures of Production: Studying Industry's Deep Texts, Reflexive Rituals, and Managed Self-Disclosures," 203.

[79] John Caldwell, "Para-Industry: Researching Hollywood's Blackwaters," *Cinema Journal* 52, no. 3 (2013): 163, doi:10.1353/cj.2013.0014.

by industry conventions, which I here take to mean both organized conferences as well as cultural codes. More broadly, I employ these guidelines by situating the presentations that I study within information culled from a diverse array of industrial and cultural sources.

I base this research, first, on twelve tradeshows and tech conventions that I attended between 2015 and 2017 in Canada and the United States. Three of these events – TechCrunch Disrupt SF 2015 and CES 2015 and 2016 – became central case studies of the dissertation. Occasionally, the dissertation contextualizes these events with reference to other conventions where I conducted research. In analyzing these events, I draw on presentations of new technologies that I saw demoed on convention stages and in exhibition hall booths. At each of my research sites, I conducted semi-structured interviews with people whom I met at the events, which likewise inform this research. So too do I account for industry perspectives by looking to "grey media" of tech industry discourse, including industry reports and surveys, classified ads, and advice pieces published on industry-affiliated blogs and websites. Additionally, I examine product launches and exhibitions both historical and contemporary through their media documentation. I also look to media coverage of these events as indications of the cultural reception they enjoyed, as well as to broader media coverage of emerging technologies and the companies that produce them.

To apprehend the product launch as a theatrical event, the dissertation begins with Apple, a company perhaps better known than any other for staging dramatic product unveilings. *Chapter 1: Product Launches and Live Performance* is a close study of two tech demos: the 1984 introduction of the Macintosh, which humanized the machine by making it into a performer, and the 2007 unveiling of the iPhone, which drew on the intimacy of live performance to present a device that promised to enhance communication. Unlike the subsequent chapters, which draw on

primary research, I base the analysis of this first chapter in archival footage of these two demos as well as other launch events in Apple's history.[80] I draw on media documentation in part because Apple keeps access to its product announcements heavily restricted (the exclusivity of these events is a key theme of the chapter). However, the difficulties of gaining access to these events notwithstanding, I focus on these two historical demos because of the cultural prominence of the technologies they popularized; both demos illustrate how performance cues new ways of thinking about the products on display. To show how the demos engaged in renegotiation of the technologies they presented, I situate the demos within extensive media coverage devoted to Apple, which includes popular coverage of the company and its products, business texts devoted to its management practices, and publications devoted to its technological development and design processes; I also consult biographies of its leadership and books and blogs that circulate among the company's fan cultures.

Forging connections between media studies and performance studies, this first chapter shows how attention to live performances of media technologies provides opportunities to rethink the relationship between media and performance. First, by inviting multiple forms of live spectatorship, among those present in the room as well as among those watching remotely, and by courting press attention across a range of media platforms, Apple product launches suggest variation in audience unity theorized by media studies literature on live "media events." At the same time, this study intervenes in performance studies' "liveness debates," which assume that live performance is antithetical to capitalist circulation, if only to the extent that it can maintain its distinction from media forms. By looking at how live performance vitalizes emerging

[80] Apple makes footage of many of its product announcements available as iTunes video downloads and compilations circulate on internet fan archives; I am especially indebted to EverySteveJobsVideo.com.

technologies on the cusp of their commercial release, this chapter illustrates the utility of live performance to capitalist circulation.

With *Chapter 2: Conferences and Contests*, the dissertation shifts focus to performances that take place earlier in the production cycles of emerging technology. To investigate promotional performance throughout the technological production process, I locate the chapter at the TechCrunch Disrupt conference series, a series of networking events for startup founders and venture capitalists. With particular attention to the Startup Battlefield pitch-off contest, this chapter investigates the theatricalization of tech industry business practice. Here, I draw on presentations that I observed when I attended the fall 2015 iteration of TechCrunch Disrupt, in combination with media documentation of other iterations of the conference; I also draw on pitch-offs held at conferences where I have conducted additional research. To supplement my observations, I look at popular media coverage of these events, industry audits, and blogs where pitch-off contest alumnae, venture capitalists, and other members of the industry dispense advice to their peers.

This chapter investigates how negotiations over the product categories and companies that constitute the future of the tech industry take place in part through the tech industry's performance cultures. Beginning with a study of conference culture, I look at how live events forge social cohesion and how the performances that take place onstage at conferences both reconstitute and reshape cultural norms. With particular attention to intersectional identity and industrial hegemony, this chapter investigates the inclusions and exclusions of the tech industry made manifest by the conference.

From there, the dissertation's final chapter engages with gender and sexuality in promotional performance through analysis of the tradeshow model workforce at CES, the annual

tech tradeshow where Parrot debuted its balletic drones. *Chapter 3: Booth Babes and Expo Erotics* investigates perhaps the most prevalent kind of performance on the tradeshow floor, sexualized spectacles featuring women hired to present new technologies and represent the companies exhibiting at the show. I base this research on my observations of exhibitions staged at CES 2015 and 2016, as well as on interviews I've conducted with women who work the show. This chapter examines controversies over booth babes that rage on tech industry blogs and in popular media, putting disavowals of the practice into tension with job calls that advertise the positions. Admittedly, the young women tasked with staging these presentations are not generally categorized as tech industry employees. Here, I look to their ubiquity at the world's largest tech exhibition in order to argue that inattention to the role of live performance in shaping the production of technology enables the tech industry to undervalue the feminized, sexualized workforce that stages the spectacles.

Focusing on an under-recognized tradeshow workforce, this last chapter theorizes the eroticized labor of tech exhibition on multiple fronts. First, I look at how the precarious work of tradeshow models accords with feminine forms of labor that go undervalued under capitalism in general, and in the tech industry, in particular. At the same time, I situate booth babe labor within a larger history of eroticism that frequently contextualizes the emergence of new technologies. In closing, I analyze corporate uses of sexuality under late capitalism by apprehending booth babe performance as a form of promotional technics through which models embody the companies they are hired to represent.

Across these three studies, I look at promotional performance in different strata of the tech world: a business leader at the pinnacle of the industry, founders of newly formed companies, and an expo workforce relegated to the outskirts of the industry's labor hierarchies.

At each site, these theatrical acts cue particular understandings of the technology on display. Importantly, these performances never provide *more* than cues. That audience members may not, in Féral's terms, recognize the meanings inscribed in the presentations is well documented in media studies of audience reception. The influence of industry on the cultural meaning of media texts, in Stuart Hall's influential formulation, is "*dominant*, not 'determined.'"[81] While reception studies has traditionally focused on audience interpretation of entertainment media, media technologies are likewise subject to user interpretation. "If media are sites for experiencing meaning," asks Gitelman, "are experiences of meaning more rightly produced than determined and imposed? How might production in this case include the ordinary people (who experience meanings) as well as the multinational industry, notwithstanding such a dramatic disparity in their power?"[82] With these questions as a starting point, the following chapters proceed by asking Gitelman's questions without bracketing the disparate degrees of power wielded by industry and users. That is, I look at the work undertaken by industry to inscribe meaning in advance of a product's commercial circulation.

A reception studies approach to tradeshow exhibition would expand the research that I have conducted here by accounting for the agency of "ordinary people" who bring their own interpretations to bear on the products they encounter. For example, this research might look at how audience members of the Parrot drone ballets interpreted the spectacle, and whether and how the various interpretations of software engineers, hardware designers, investors, buyers, distributors, marketers and press then shaped public attitudes toward drone technology. Such a

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[81] Stuart Hall, "Encoding/Decoding," in *Culture, Media, Language: Working Papers in Cultural Studies, 1972-79*, ed. Stuart Hall et al. (London: Routledge, 1991), 134. Original emphasis. Féral's discussion of inscription and recognition echoes Hall's articulation of encoded and decoded meaning.

[82] Gitelman, *Always Already New*, 8–9.

study would no doubt be useful to exhibitors in deciding how to allocate resources for their displays; it would also provide a rich critical counterpoint to my research of the work of staging these spectacles. As Holt and Perren argue, echoing Gitelman, cultural production entails "struggle, contestation, and negotiation" between industrial sectors and "ordinary people" alike.[83] Research of nuance and variation in how audience members with different professional roles in a range of business sectors interpret the spectacles staged at cross-sector conventions would further illuminate this complex industrial terrain. Similarly, a study that puts user understandings of emerging technology into tension with its prior presentation at industry sites would almost certainly uncover points of contestation.

However, as discussed earlier, different stakeholders wield disparate degrees of negotiating power. Although new technology often appears to promise users an opportunity to experiment with products' uncharted purposes, the promotional spectacles staged at industry conventions shows that companies actively work to shape the cultural connotations of emerging products well before they reach users. In investigating these acts, I draw attention to these spectacular labors, which cultivate the meanings to which users respond. While cultural production necessarily involves struggle, contestation, and negotiation, Hall's identification of dominant meaning underscores the power differential through which their contestation operates. Discursive domination, for Hall, depends on "the 'work' required to enforce, win plausibility for, and command as legitimate a *decoding* of the event within the limit of dominant definitions."[84] This dissertation investigates the work that industries undertake to manage these discursive meanings. Through spectacular presentation, the meanings of emerging technology take shape.

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[83] Holt and Perren, *Media Industries*, 5.

[84] Hall, "Encoding/Decoding," 135. Original emphasis.

Chapter 1:
Product Launches and Live Performance

A Macintosh computer, on top of a podium, hides inside a zippered bag. Steve Jobs, at an adjacent podium, wears a green striped bowtie. "You've just seen pictures of Macintosh," he tells the assembled audience of Apple shareholders, and then, breaking into a sly smile, he adds, "Now I'd like to show you Macintosh in person." The audience applauds as he pulls the computer from its bag, and again when he reaches into his breast pocket for a floppy disk, which he inserts into a small slit below the screen. As the stage lights dim and the screen lights up, the house falls silent. The Macintosh logo scrolls across the screen and *Chariots of Fire* begins to play over the theater's sound system. The computer cycles through images of its capabilities – multiple fonts, a spreadsheet, a chess board – which are projected onto a larger screen hung across the backdrop of the stage. "We've done a lot of talking about Macintosh recently," says Jobs, back at his own podium and leaning conspiratorially toward the audience, "But today, for the first time ever, I'd like to let Macintosh speak for itself."

Text appears on the Macintosh screen as a male, robotic voice speaks the words aloud. "Hello, I'm Macintosh," it says. "It sure is great to get out of that bag." The audience goes wild.[1]

The stagecraft with which Apple introduced the Macintosh computer to company shareholders in January 1984 would come to characterize its product introductions for decades to come, a practice now emulated throughout Silicon Valley. Variously referred to as product launches and product announcements, these events take place near the end of a new technology's

[1] Apple, *Steve Jobs Introduces the Original Macintosh - Apple Shareholder Event (1984)* (EverySteveJobsVideo, 2013), https://www.youtube.com/watch?v=YShLWK9n2Sk&feature=youtu.be.

production process, but before it hits store shelves (or, in the case of many digital technologies, app store databases). This chapter theorizes the relationship between liveness and mediation by analyzing the live performances of media technologies at Apple product launches. These events illustrate the role that performance plays in enlivening unfamiliar technology, imbuing it with a sense of vitality. They also show how live performance functions as a form of capitalist promotion, driving the circulation of commodities and imbuing emerging technologies with meaning ahead of their release.

Despite the conceit of the Mac demo, new technology cannot "speak for itself." First, its technological protocols must be learned before they can be used and understood. This is part of why new technologies are so often introduced via demo: the demo both shows off a new device's technical capabilities and also teaches prospective users how to operate it. Second, but just as important, new technology cannot "speak for itself" because its cultural relevance is not yet known; any interventions it will make in social practice can only arise following its adoption. There is no guarantee that a new technology will come to enjoy widespread circulation, and, in the event that it does, users may adopt it for purposes other than those imagined by its producers. New technologies, that is, carry indeterminate cultural meanings, which develop and transform through processes of social negotiation.[2]

By making technology appear to "speak for itself," the tech demo works to naturalize the corporate imagination of technology. Just as the demo shows audience members how to operate new technology, what Gitelman would call technological protocols, so too does it cue the "social, economic, and material relationships" that producers hope users will develop with their

[2] See Marvin, *When Old Technologies Were New,* 5: "New practices do not so much flow directly from the technologies that inspire them as they are improvised out of old technologies that no longer work in new settings. "

products.[3] Consider the case of the Macintosh computer. Famously, Apple modeled the Macintosh's aesthetics on the human face. Introducing a photography volume devoted to Apple product design, Paul Kunkel describes the physical form of the Macintosh as "designed to be 'friendly' at a time when most computers were not."[4] Friendly hardware, in the case of the Macintosh, meant humanizing the machine. By having the computer introduce itself live onstage ("Hello, I'm Macintosh"), Apple likewise personified a technology not (yet) understood as personal.

A team of about 100 Apple employees, led by Jobs along with industrial designers Jerry Manock and Terry Oyama, worked on the first Macintosh computer. However, in the same way that Jobs served as the Macintosh's interlocutor onstage at the product launch, narratives of the Macintosh's design process regularly situate Jobs as the singular vision behind its creation. "Even though Steve didn't draw any of the lines, his ideas and inspiration make the design what it is," Oyama told Kunkel, adding "To be honest, we didn't know what it meant for a computer to be 'friendly,' until Steve told us."[5] The line is telling, first, because it places cultural imagination as central to the computer's significance ("what it is"). Secondly, the line is remarkable for its robust citational after life. The quote that Oyama gave Kunkel for his coffee table book has since appeared in biographies of Jobs as well as books on computer history and on corporate management strategy.[6] Most importantly, the line centers performance ("Steve told

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[3] Gitelman, *Always Already New*, 7–8.

[4] Paul Kunkel, *AppleDesign: The Work of the Apple Industrial Design Group* (New York: Graphics Inc, 1997), 22.

[5] Kunkel, *AppleDesign*, 26.

[6] For biography, see Walter Isaacson, *Steve Jobs* (New York: Simon and Schuster, 2011), 192; Leander Kahney, *Inside Steve's Brain* (New York: Penguin, 2009), 78; for computer history, see

us") as the process through which technology gains meaning—and articulates that process as tantamount to its invention.

Any "great man" theory of invention entails acts of erasure, however that Jobs is remembered as a man who invented digital tech devices is particularly remarkable given that he had no engineering skills and never learned to code. In that sense, his leadership at Apple mirrors a trend in the creative industries, which attributes artistry to a managerial class tasked with the supervision of artists; here, management becomes the rightful domain for success in science, technology, engineering, and math. In an early critical study of the hagiographic outpouring that followed Jobs' 2011 death, from spontaneous memorials erected outside Apple stores to prepared remarks from world leaders, Thomas Streeter locates a typical tribute to Jobs in TED Conference curator Chris Anderson's claims that, "this single individual" [Jobs] gave us the original Apple, the Macintosh, and Pixar, and the iPod, the iPhone, and the iPad."[7] These remarks, Streeter quips, "are so distorting of the facts that under normal circumstances they would be unacceptable in an undergraduate essay."[8] Indeed, Apple's most breakthrough technologies, as with much industrial innovation, drew on the work not just of whole departments of Apple employees but also of earlier contributions made elsewhere. Perhaps most

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Tony Hey, Anthony J. G. Hey, and Gyuri Pápay, *The Computing Universe: A Journey through a Revolution* (Cambridge: Cambridge University Press, 2014), 156; for business management, see Jeffrey Cruikshank, *The Apple Way: 12 Management Lessons from the World's Most Innovative Company* (New York: McGraw-Hill, 2005), 30; for a dramatic interpretation of the quotation perhaps best described as "stupefied," see (hear?) the audio version of the Isaacson book read by Dylan Baker, *Steve Jobs*, MP3 (New York: Simon & Schuster Audio, 2013).

[7] Chris Anderson quoted in Thomas Streeter, "Steve Jobs, Romantic Individualism, and the Desire for Good Capitalism," *International Journal of Communication* 9 (September 30, 2015): 310.

[8] Ibid. In Streeter's analysis, these exaggerated narratives tell us less about Steve Jobs, the man, than about a late capitalist cultural investment in romantic individualism.

famously, the computer mouse popularized by Apple was developed by Douglas Engelbart at the Stanford Research Institute, and Apple's graphical user interface (GUI) developed at Xerox PARC.[9] That Jobs is nonetheless hailed as the inventor behind all Apple devices created during his tenure stems in no small part from his role at Apple product launches. By keeping Apple products carefully guarded secrets until the moment of their debut, and then announcing them at live events with much fanfare and media attention, Apple standardized a narrative linking a product's unveiling to its invention. These events established close ties between the company's products and what "Steve told us" they could do.

Although Jobs has been the subject of hundreds if not thousands of books published since the late 1980s, a full academic study of his work has yet to be written. This chapter is not that study. Its focus is less on how Apple product launches shaped the figure of Steve Jobs than on how these events shaped the future of Apple products. Following U.S. President Barack Obama, who paid tribute to Jobs for "making computers personal and putting the internet in our pockets," I focus closely (though not exclusively) on Apple's launch of the Macintosh in 1984 and the iPhone in 2007.[10] The Macintosh was not the first personal computer (which began appearing on shelves in 1975) and the iPhone was not the first smartphone (models of which had proliferated for a decade). Both, however, emerged relatively early, and both became industry standards: the Macintosh exceeded sales projections within its first hundred days on the market and would influence computer technology for decades to come; the iPhone quickly became the best-selling

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[9] See Bardini, *Bootstrapping: Douglas Engelbart, Coevolution, and the Origins of Personal Computing*.

[10] Barack Obama, "President Obama on the Passing of Steve Jobs," *Whitehouse.gov*, October 5, 2011, https://obamawhitehouse.archives.gov/blog/2011/10/05/president-obama-passing-steve-jobs-he-changed-way-each-us-sees-world.

smartphone on record.[11] In addition to popularizing new product categories, with both devices, Apple reimagined a form of technology. And, crucially for my purposes here, live events were key to each debut.

In the popular discourse that surrounds these events, "launch date" most typically refers to the date that a product goes on sale, rather than to the date of its public introduction, although, somewhat confusingly, a "launch event," where a product is unveiled to the public, can occur months in advance. Perhaps to avoid such confusion, in recent years Apple itself has moved away from calling its product unveilings "launches," preferring to call them "announcements." However, because "product launch" and "launch event" persist in the popular discourse that surrounds these events, I employ both terms here.

The following sections draw on archival footage of Apple launches, press accounts of the events, and media documentation of Apple's product development process and corporate culture. Analyzing these materials according to critical conceptions of the relationship between media technology and live performance, I begin by considering how the product launch functions as a form of *live theater*, with attention to its production of spectacle and celebrity. By examining hierarchical access points that Apple provides to its live events, I argue that product launches reveal points of tension between liveness and mediation invisible in late twentieth century theory

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[11] For a company celebration of the Macintosh's first hundred days, see Apple, *Steve Jobs Presents the First 100 Days of Macintosh - Apple II Forever Event (1984)* (EverySteveJobsVideo, 2013), https://www.youtube.com/watch?v=CFnfUoT0PMM. By the end of the year, sales slowed considerably, though the Macintosh continued to set standards of personal computing; see Chris O'Brien, "How Steve Jobs' Macintosh Failed and Still Changed Computing," *Los Angeles Times*, January 24, 2014, sec. Business, http://www.latimes.com/business/technology/la-fi-tn-how-the-first-macintosh-failed-and-still-changed-computing-20140123-story.html. For a review of iPhone sales relative to other products, see Vince Calio, Thomas C. Frohlich, and Alexander E. M. Hess, "The Best-Selling Products of All Time," *247WallSt*, May 8, 2014, http://247wallst.com/special-report/2014/05/08/the-best-selling-products-of-all-time-2/.

of media events. I then return to the Macintosh launch, described above, in order to analyze how the demo used live performance to endow the machine with *animacy*, a sense of being alive, compounding the computer's technical design choices. Next, I turn to Apple's launch of the iPhone, where I look at how live performance makes technology into *vital* media, that is, technology capable of sustaining liveliness through mediation. Here, I situate the tech demo within performance studies "liveness debates" in order to illuminate the role of the live event in driving capitalist value. Finally, I consider liveness as a *promotional form*, situated within a broader landscape of promotional technics, including commercial advertising. Where commercial advertising operates as part of capitalist circulation, the live event is rooted to a particular moment. Product launches demonstrate how liveness functions as an integral part of the production process by transforming the lag time before a product enters the commercial market into a space of cultural anticipation.

Like pulling a rabbit from a hat:
The product launch as live theater

Steve Jobs, according to his official biography, "perfected the art of turning product launches into theatrical productions."[12] The bestseller, exhaustively compiled by Walter Isaacson, recounts a five-hour rehearsal held the night before the launch of the Macintosh at which Jobs tweaked and re-tweaked lighting and sound effects, agonized over his script, and

[12] Isaacson, *Steve Jobs*, 232. To the extent that Isaacson's book, which Jobs' invited him to write, contains a thesis, it is that Jobs possessed a "reality distortion field" that enabled him to get people to see the world his way and then defy reality by creating things the way he wanted them. It somehow never occurs to Isaacson that, if true, the greatest example of this thesis is his book.

eviscerated stagehands for failing to execute his vision.[13] Isaacson's celebration of Jobs as an inspired artiste and demanding prima donna receives fuller treatment in its Hollywood adaptation, the biopic *Steve Jobs* (2015), which excises hundreds of pages on Jobs' office management and boardroom negotiations, instead taking place entirely at Apple product launches.[14] Where the film mines the high stakes of a product launch and Jobs' signature showmanship for cinematic drama, it also underscores a social logic that identifies the Apple CEO's promotional performance with the cultural vanguard. If Apple's technologies revolutionize social life, the film upholds a cultural logic that identifies the product launch as a site of revelation.[15] In other words, it both dramatizes "the Steve Jobs playbook for making the introduction of a new product seem like an epochal event in world history,"[16] and it also accepts the construction, identifying Jobs as an idiosyncratic visionary who could – through the orchestration of a successful launch – compel new worlds into being.

This section examines Apple product launches as sites of spectacle. As the years went by, Apple's product announcements grew increasingly elaborate on a number of fronts. In terms of content, they eventually came to feature multiple product announcements (both new products

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[13] Ibid., 167–68. This is not a universal account: Andy Hertzfeld recalls that "Steve wasn't into rehearsing very much, and could barely force himself into doing a single, complete run-through." See Andy Hertzfeld, *Revolution in The Valley: The Insanely Great Story of How the Mac Was Made* (Sebastopol, CA: O'Reilly Media, 2004), 217. However, my point here is less about how many times Jobs in fact ran through the presentation (though I would like to know) but rather that the bestseller inscribes the event as a work of carefully produced theater. (Isaacson's account also reinforces his book's overarching narrative of Jobs' obsessive perfectionism.)

[14] Danny Boyle, *Steve Jobs*, Biography (Universal Pictures, 2015).

[15] A competing biopic released two years earlier presents a more traditional life story, yet it too foregrounds the demo as the means by which the computer becomes understood, through an early scene in which a dealer demands not just delivery of computer components but a demo of the device. See Joshua Michael Stern, *Jobs*, Biography (Open Road Films, 2013).

[16] Isaacson, *Steve Jobs*, 167.

and updated generations of existing ones) along with updates on Apple's internal activities and financial health. Stylistically, as the number of products launched at these events increased, Jobs began to share the stage with other designers and developers, acting as emcee as well as lead player. Indeed, these announcements eventually covered so much ground, it led to the genesis of Jobs' signature rhetorical move: "and one more thing." First uttered at the close of a 1999 keynote that Jobs ended by announcing that new desktop computers would be available in bright colors, the expression grew into an anticipated signal of ritualized excess.[17] To maintain an element of surprise and keep audiences on their toes, Jobs occasionally employed the device more than once at a singular event. For instance, 30 minutes into a 2006 presentation announcing updates to various iPod models and to iTunes – Apple's portable MP3 player and digital music store were then five years old – Jobs appeared to wrap up the event.[18] But when he added, "there is one more thing," the audience laughed knowingly.[19] No longer a surprise move, "one more thing" had become an expected convention of a launch. In the segment that followed, Jobs announced that iTunes would begin carrying digital movies, demoed the software on an iMac desktop, and introduced Disney CEO Bob Iger, who spoke in praise of the new cinema

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[17] Apple, *Steve Jobs Introduces Rainbow iMacs & Power Mac G3 - Macworld SF (1999)* (EverySteveJobsVideo, 2013), https://www.youtube.com/watch?v=NuCYHrSig94.

[18] Presenting updates to these two products in tandem made particular sense for an announcement centered on the ease of using iTunes to download digital content to Apple devices, where the files could be both stored and played, a system that Jeremy Wade Morris calls "the equivalent of combining a fridge, a grocery store, and the very dinner table on which the food is served." See Jeremy Wade Morris, *Selling Digital Music, Formatting Culture* (Oakland: University of California Press, 2015), 149, http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=1028682.

[19] Apple, *Steve Jobs Previews Apple TV (iTV) - Apple Special Event (2006)* (EverySteveJobsVideo, 2012), https://www.youtube.com/watch?v=ualWxQSAN3c&feature=youtu.be.

distribution model.[20] After Iger's remarks, Jobs again appeared to end the event, before adding that he had "one last thing," and proceeded to preview the streaming TV project that would eventually become Apple TV. He then formally summed up the whole of the event ("I can download content from iTunes and enjoy it on my computer, my iPod, and the big screen TV in my living room"), thanked the audience for coming, and began to make his exit. But he paused mid-step, raised his hand in the air as if just remembering something, and walked back center-stage. "But we do have one more thing," he said, and announced a surprise musical performance by John Legend, waiting in the wings.

A triplicate "one more thing" could only work every so often. Employed in 2006, it reinforced a sense of innovative excess at a time of rapid product development in the tech industry, causing expectations for new devices to run particularly high. Of course, the final "one more thing" in this case marked not a coming Apple product but, rather, Apple's professed relationship to artistry. "All this technology's amazing, but it really all comes down to artists, doesn't it?," mused Jobs from the stage, "Because if they don't create this content, then we haven't got anything to listen to or watch." By including a musical performance alongside demos of media technologies, the keynote presentation underscored the technologies' social meaning. Moreover, John Legend was no ordinary in artist; in 2006, as Jobs reminded the audience, Legend was fresh off wild success at the Grammys, including awards for "Best New Artist" and "Song of the Year." That a Grammy-winning artist who had just reached a peak of his career gave a private performance to attendees at an Apple product launch suggests, first, the

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[20] Ibid. Iger's fall 2006 Apple launch event appearance, in which he announced that Disney movies would be available on iTunes, was, in a sense, a reprise of his appearance from the year before, the year of the video iPod's debut, when he announced that Disney would make ABC television shows available via iTunes, the first broadcast network to do so. In between the two conferences, Disney bought Pixar, the animation studio that Jobs had founded after leaving Apple, and where he continued to serve as CEO until the company sold to Disney in 2006.

heightened degree of spectacularity that Apple product launches acquired over the course of two decades (the Macintosh's monologue, while charming, was not quite a fully-produced R&B performance) as well as an increasingly amorphous boundary between commercial and cultural events.

Max Horkheimer and Theodor Adorno's charge that industrially produced culture "merges with the advertisement" locates popular music's suitability to capitalist promotion in its conditions of production.[21] To identify the role of art in articulating commercial technology as culturally significant, however, we need not regard the use of musical performance at a product launch as indicative of artistic debasement any more than we need accept commercial technology as a work of art. What matters in this case is not just that a Grammy winner promoted a tech company (and vice versa) but that a live performance by a music industry star at the Apple product launch articulated a relationship between Apple's media distribution technologies, mainstream entertainment media, and artistic creation. By inviting Legend to perform at its event, Apple blurred distinctions between the launch and a concert, and, in the process, smoothed tensions between industrial relationships that might otherwise appear to have competing, or at least incongruous, interests.

It is a testament to the magnitude of Jobs' star power that he could share a stage with CEOs of other companies as well as music industry superstars and remain the focus of the press coverage surrounding Apple events. These presentations, like his media interviews and even his iconic black turtleneck, a uniform he adopted near the end of his career, underscore performance as a central tactic of business celebrity. A Gilded Age strategy for giving a human face to capitalist corporations, business celebrity, as Eric Guthey, Timothy Clark and Brad Jackson have

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[21] Max Horkheimer and Theodor Adorno, *Dialectic of Enlightenment*, ed. Gunzelin Schmid Noerr, trans. Edmund Jephcott (Stanford: Stanford University Press, 2007), 131.

insightfully demonstrated, relies on "a crowded industrial process which insists that industry is really just a matter of a few great individuals" made famous "by virtue of their own skills and exemplary characteristics."[22] Although Jobs appears in their study but briefly, tellingly, he does so in the context of his "theatrical product launches" which rest on obvious "mechanics of celebrity production" but simultaneously position Jobs as "a true genius," who earns his role as star of the show.[23]

The precise nature of Jobs' "true genius" remains a topic of extensive popular debate. As discussed earlier, many popular accounts credit Jobs with the invention of all of Apple's products, however more nuanced theories variously center on his business acumen, his eye for design, and his management style.[24] In Streeter's analysis, each of these assessments participates in narratives of "good capitalism" by defending Jobs as a deserving billionaire, "a one-percenter who might actually deserve what he had."[25] Moreover, argues Streeter, these "proliferating discussions" in fact feed the machinery of business celebrity by continually shining "a spotlight on the figure of Jobs" whether as "inventor, marketer, designer, tweaker, motivator, role model,

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[22] Eric Guthey, Timothy Clark, and Brad Jackson, *Demystifying Business Celebrity* (London: Routledge, 2009), 12.

[23] Ibid., 150.

[24] For business acumen, see Lily Rothman, "More Proof That Steve Jobs Was Always a Business Genius," *Time*, May 5, 2015, http://time.com/3726660/steve-jobs-homebrew/; Jeffrey S. Young and William L. Simon, *iCon Steve Jobs: The Greatest Second Act in the History of Business* (Hoboken: Wiley, 2006). For design, see Max Chafkin, *Design Crazy: Good Looks, Hot Tempers, and True Genius at Apple* (New York: Fast Company, 2014); Steven Johnson, "The Genius of Steve Jobs: Marrying Tech and Art," *Wall Street Journal*, August 27, 2011, sec. Life and Style, https://www.wsj.com/articles/SB10001424053111904875404576532342684923826. For management style, see Lee Schafer, "Jobs' Genius Was Learning to Lead His Apple Colleagues," *Star Tribune*, May 13, 2015, sec. Business, http://www.startribune.com/schafer-jobs-genius-was-learning-to-lead-his-apple-colleagues/303532551/; Jay Elliot, *Leading Apple With Steve Jobs: Management Lessons From a Controversial Genius* (Hoboken: Wiley, 2012).

[25] Streeter, "Steve Jobs, Romantic Individualism, and the Desire for Good Capitalism," 3108.

or tyrant."[26] In the popular discourse that circulates around Jobs' role at product launches, yet another descriptor regularly comes to the fore: magician.

References to Jobs as a magician, which date to the Macintosh launch in 1984, bespeak both the journalistic marvel directed toward Apple products as well as Jobs' reputation for theatrical flair at the moments of their debut. For instance, in a typical turn-of-phrase, a reporter who attended the 1984 shareholders' meeting would later recall that Jobs "looked like a magician lifting a rabbit out of a hat" as he "reached into a squat duffel bag and lifted out the future of computing."[27] This reflection, published a decade after the Macintosh's debut, inscribes its launch as a moment of historical import (it revealed "the future of computing"), inextricably linked to the magician-like figure that produced the Macintosh from the bag.[28]

The magician trope would persist throughout Jobs' career. "Apple Pulls Another Rabbit Out of the Hat with iTunes," read a headline following its 2003 launch event.[29] And shortly before Jobs' untimely death, a tech blog predicted, "Steve Jobs will at some point pull the tech industry equivalent of a rabbit out of a hat in 2011," then helpfully unpacked the metaphor by

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[26] Ibid., 3110.

[27] Greg Lefevre, "Surfing Silicon Valley: Deja Mac," *CNN*, October 16, 1998, http://www.cnn.com/TECH/computing/9810/16/lefevre/.

[28] See also Brent Schlender and Rick Tetzeli, *Becoming Steve Jobs: The Evolution of a Reckless Upstart into a Visionary Leader* (Toronto: McClelland & Stewart, 2015), 120: "Over the years," they write of Jobs, "his stagecraft would show increasing sophistication," a practice they root in his "pulling the Macintosh out of the bag, like a rabbit out of a hat, back in 1984." See also Owen Linzmayer, "1984: The Birth of the Macintosh," *Macworld UK*, January 22, 2014, http://www.macworld.co.uk/feature/mac/1984-birth-of-macintosh-3498364/?p=5: "Jobs walked over to a canvas bag sitting on a table and -- like a magician pulling a rabbit from a hat -- he extracted a Macintosh."

[29] Mike Adams, "Apple Pulls Another Rabbit Out Of The Hat With iTunes," *NaturalNews*, October 21, 2003, http://www.naturalnews.com/000062.html.

adding, "unleashing an amazing gadget no-one had thought of but that everyone will want."[30] (In that vein, Jobs' 2006 stunt perhaps invoked less a magician who pulls a rabbit from a hat than one who pulls an endless scarf from up his sleeve.) Indeed, although the refrain has continued into the post-Jobs era,[31] when Apple first announced that Jobs would take a leave from Apple due to his health crises, handing the reins to then-COO Tim Cook, at least one reporter wondered whether "Cook or anyone else at Apple" had a similar ability to pull a "rabbit out of their hat."[32] The question referred not only to Cook's ability to spearhead the development of new products but to marshal inspiration at their unveilings. Lamenting Jobs' impending absence from "any major Apple announcements," the article noted that a recent presentation, led by Marketing Vice President Phil Schiller, "got only middling reviews," and attributed the disappointment to the decision to build a live announcement out of what, in the reporter's estimation, ought to have been a press release.[33] In contrast, the theatricality for which Jobs was famous took what might otherwise have been a press release and enlivened it onstage, making the live event key to both the cultural attention directed to Apple's launches and to the articulation of the products themselves.

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[30] Craig Grannell, "Apple in 2011: 10 Things to Expect," *TechRadar*, December 20, 2010, http://www.techradar.com/news/computing/apple/apple-in-2011-10-things-to-expect-916835.

[31] The allusion perhaps achieved its zenith in a slate of predictions regarding the products Apple might release at a 2014 launch event, which ranked the likelihood of each possibility according to bunny metrics: "iPad mini for cheap…this rabbit may hop right over the fence" and "Smart watch…this rabbit don't hop." See David Gewirtz, "14 Rabbits Apple May Pull Out of Its Hat at Tuesday's Announcement," *ZDNet*, October 21, 2013, http://www.zdnet.com/article/14-rabbits-apple-may-pull-out-of-its-hat-at-tuesdays-announcement/.

[32] Lance Ulanoff, "Steve Jobs's Exit Marks Turning Point for Apple and Tech," *PCMAG*, January 15, 2009, http://www.pcmag.com/article2/0,2817,2339013,00.asp.

[33] Ibid.

Importantly, Jobs is far from the only tech world figure whom the public has apprehended as a magician. The practice extends at least as far back as Thomas Edison, one of the earliest exemplars of business celebrity,[34] whom *The Daily Graphic* newspaper included on its cover in 1877, festooned in robes and a pointy hat.[35] The first U.S. newspaper to include daily illustrations, *The Daily Graphic* had only begun circulation four years earlier, in 1873, meaning that the press has hailed inventors of new technology as magicians ever since their images began circulating in mass media.

While it perhaps seems easy to understand how, at the end of the nineteenth century, electric light, telephony, and the phonograph seemed like the stuff of sorcery, the mere fact of their existence was insufficient for their public adoption, which relied in part on their introduction through live demos.[36] The phonograph exhibitions, argues Gitelman, "offered tacit participation in technological progress to everyone in attendance. Audiences could be up to the minute, apprised of the latest scientific discovery, in on the success of the inventor whom the newspapers were already calling, 'The Wizard of Menlo Park' and 'the Modern Magician.'"[37] These events thus merged the magic associated with new technology with "the magic of live theater," an occasionally derided concept that Jill Dolan defends as the communion among audiences and actors which "performances that 'work' generate."[38] Her quotation marks are

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[34] Guthey, Clark, and Jackson, *Demystifying Business Celebrity*, 8.

[35] Unknown, "The Wizard's Search," *The Daily Graphic*, July 9, 1879, sec. Front page.

[36] For a study of ambiguities between magic and science in early electrical culture, see Marvin, *When Old Technologies Were New*, 56–62.

[37] Gitelman, *Always Already New*, 34–35.

[38] Jill Dolan, "Performance, Utopia, and the 'Utopian Performative,'" *Theatre Journal* 53, no. 3 (October 1, 2001): 458, doi:10.1353/tj.2001.0068.

Figure 1: Steve Jobs demos the Macintosh, Apple Shareholder's Meeting, 1984. (Still from Apple footage.)

Figure 2: "The Wizard's Search." Thomas Edison cover of *The Daily Graphic*, 1879. (Illustrator unknown.)

telling; the properties that make a theatrical performance successful can be mysterious even to its creators. On its most basic level, the success of a tech demo is more straightforward: if the device in question works, then so does the demo.

When a demo involves more than merely showing how to operate a new technology (as, to some degree, every demo must), whether the performance as a whole "works" hinges on the unity formed among those in attendance. A successful demo provides audiences with a sense of inclusion in the corporate narrative of the technology's emergence. When Apple distributed T-shirts as party favors at a launch event for the Apple IIc computer, the shirts functioned as a visual markers – and reminders – of that inclusion. The front of the shirt bore the name of the event, "Apple II Forever," with the date and place of the launch ("San Francisco/April 24, 1984") red-lettered along the sleeve.[39] The message was clear: Apple II would have a long afterlife, and those who came together at the right time and place shared in its genesis. Like the foil souvenirs that audiences took home from phonograph exhibitions, these T-shirts marked wearers as "in" on a new technology, material evidence that they had witnessed its mediation, live.

Just as the number of Apple products launched during Apple announcements expanded over the years, so too did the groups of people included in its audiences. The 1984 launch of the Macintosh, described at the opening of this chapter, took place for those directly involved in the computers' production (the developers who built it and the shareholders who funded it) along with cultural intermediaries (the press who reported on it). For those who built the computer, the

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[39] Gordon Thygeson, *Apple T-Shirts: A Yearbook of History at Apple Computer* (Scotts Valley: Pomo Pub, 1998), 5. Thygeson's documents an early company history in which Apple fostered unity and team spirit among employees through the production of matching T-shirts. Distributing T-shirts at a launch event thus functioned as part of a larger sartorial strategy of corporate cohesion.

event functioned as a celebratory display of their accomplishments. For the shareholders, the event promised not only coming financial rewards but also an opportunity to witness a magnificent creation firsthand. And by extending invitations to the press, Apple sought to include press in the moment while garnering media coverage of the exclusive event.

The following year, Jobs was ousted from the company following clashes with Apple's board, and by the time he returned, Apple had begun giving regular status updates at a series of tech conventions, particularly the MacWorld Expo, an unofficial Apple tradeshow and conference, of the sort discussed in more detail in the next chapter. A now-defunct conference series sponsored by the *MacWorld* magazine, MacWorld Expo attracted Apple representatives as well as computer developers and personnel from other companies, in addition to journalists and early computer users. Upon his 1997 return to Apple, Jobs took over the keynotes at MacWorld and almost literally redefined the genre: his conference keynotes became affectionately known as "Stevenotes." Where previous talks had mostly thanked audiences for their enthusiasm and promised that Apple was staying in business (the early nineties had been a difficult period at the company) Jobs began using his talks to offer previews of forthcoming products, transforming the keynote into a headline event. Again, the draw of these talks was not merely an opportunity to learn about forthcoming Apple products but to be present at the moment of their debut, in proximity to their producer. As one reporter put it, a chance to "breathe Apple's air" became the defining characteristic of the event.[40]

As Apple grew, however, announcing new products according to MacWorld's schedule became an untenable stress on production cycles at a time when Apple had gained the size and

[40] Christopher Breen, "Remembering Macworld Expo: Why We Went to the Greatest Trade Show on Earth," *Macworld*, October 14, 2014, http://www.macworld.com/article/2833713/tech-events/remembering-macworld-expo.html.

stature to produce its own spectacles. As a result, in 2009, Apple pulled out of the conference – and without the draw of "Apple's air," the conference would soon close down. Instead, to attend a Jobs product launch, Apple enthusiasts could buy tickets to Apple's own Worldwide Developers Conference (WWDC), an annual training conference for tech developers where Jobs continued to deliver keynotes as he had at the previous, fan-centered event. At the same time, Apple also began announcing products at its own, stand-alone events, for select employees, invited guests, and press.[41] Somewhat confusingly, Apple has begun calling these special events "Keynotes," an event name that bespeaks their MacWorld lineage, although they are today stand-alone affairs, staged for select invited guests and simulcast via Apple TV and on Apple's website, available to anyone with an internet connection and device that can pick up the signal.

A live event watched in unison by mass publics around the globe recalls Daniel Dayan and Elihu Katz's theory of "media events," broadcasts of live events that attract mass viewership.[42] Their independence from television production notwithstanding, Apple announcements meet many of the criteria Dayan and Katz define as essential to media events: Apple product launches are "*interruptions* of routine" that "propose exceptional things to think about, to witness, and do."[43] So too are they "*preplanned*," inspiring "an active period of looking forward," and "presented with *reverence* and *ceremony*" such that "journalists who preside over

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[41] Ibid.

[42] Apple product announcements are catalogued on Wikipedia as "Apple media events," defined as "press conferences that garner significant following in traditional and online media," an explanation that, however unintentionally, seems to expand Dayan and Katz's focus on televised events to other media forms. See "Apple Media Events," *Wikipedia*, April 4, 2017, https://en.wikipedia.org/w/index.php?title=Apple_media_events&oldid=773809466.

[43] Daniel Dayan and Elihu Katz, *Media Events: The Live Broadcasting of History* (Cambridge: Harvard University Press, 1992), 5, http://public.eblib.com/choice/publicfullrecord.aspx?p=3300752. Original emphases.

them suspend their normally critical stance and treat their subject with respect, even awe."[44] These descriptions should sound familiar to anyone who has seen the widespread speculation that occupies market analysts, tech journalists, and mainstream news outlets during the lead-up to Apple launches, and especially to anyone who has followed reporters' breathless liveblogging of the events themselves. In that sense, the transformation of product launches into mediated spectacles might well indicate their function as commercial counterparts of the civic holidays that Dayan and Katz see in live broadcasts of historical events. Indeed, staging Apple announcements as media events operates as a chief strategy for imbuing the launch of a new product with an air of historical import. In this reading, digital technology affords Apple an opportunity to transmit its special events to mass publics via the internet just as television networks broadcast the Olympic games, royal weddings, and funerals of heads of state. Apple's live media events inspire not the national unity of interest to Dayan and Katz but allegiance to a company and inclusion in the unfolding narrative of its technological prowess. In other words, we might say that just as phonograph exhibitions allowed audiences to be "in" on the magic of new invention, so too have Apple events functioned as media events that provide audiences with a sense of inclusion in the development of the tech industry, whether by virtue of their presence at a MacWorld convention or by logging on from their living rooms.

However, watching a product launch in person persists as a coveted opportunity, despite the availability of the livestream and an archive of Apple product launches available as free iTunes downloads. Tickets to Apple's WWDC have been made available via lottery since 2014,

[44] Ibid., 7. Original emphases.

after tickets for 2013's conference sold out within minutes of going on sale.[45] Journalists, too, vie for seats at product launches, where Apple distributes limited seats to press it deems important (or sometimes, according to industry rumors, appropriately friendly to Apple). As one hapless tech blogger learned, after exchanging a series of emails with Apple's PR time as part of a failed effort to gain admission to a launch event, the company repeatedly suggests watching the livestream by way of apology for not offering tickets to the event.[46] Yet the competitive basis on which Apple makes seats available itself attests to the persistence of the live, in person debut as a primary attraction.

Liveness depends on codes of proximity. Attending a product launch in person is not the same experience as watching it from home (just as watching the Kennedy funeral via television broadcast was surely altogether different than was sitting in a cathedral pew or watching the procession from the Washington Mall). For Dayan and Katz, distinctions between watching an event in person versus watching it on live television matter primarily in terms of what they deem the impoverished perspective afforded by the former, which lacks the totalizing picture provided to television viewers.[47] While reception theorists, following Hall, might take issue with the implication that mass media instills unity among viewers, another way to gain a more nuanced understanding of media events' diverse constituencies is to account for the events' varied

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[45] Dan Moren, "Apple's 2014 WWDC Is June 2-6," *Macworld*, April 3, 2014, http://www.macworld.com/article/2139282/apples-2014-wwdc-is-june-2-6-tickets-available-by-lottery.html.

[46] Kieren McCarthy, "Inside Our Three-Month Effort to Attend Apple's iPhone 7 Launch Party," *The Register*, September 7, 2016, https://www.theregister.co.uk/2016/09/07/reg_effort_to_attend_iphone_7_launch/.

[47] Dayan and Katz, *Media Events*, 95.

degrees of liveness.[48] Where Dayan and Katz propose that a television broadcast supersedes the experience of "being there" as the authoritative account,[49] it might be more helpful to consider how proximities of liveness compound the distinct roles played by different groups of spectators, whose distinct perspectives shape the event by operating in concert.

The shareholders meeting where Apple launched the Macintosh in 1984 served the company as three events in one: a major business event, a major press event, and a major corporate event. As such, it hailed investors, journalists, and Apple employees, respectively. Apple wouldn't livestream its events for another 30 years, however even here – or especially here – tensions existed between those who watched the event in person, from the audience, and those who attended via onsite digital and audio feeds. The Flint theater contained approximately 2,600 seats in 1984, and the Macintosh launch filled all of them. Apple reserved the front rows for the 100-odd team that had created the Macintosh, a strategy employed at launches to this day, where Apple employees involved in the production of newly launched products sit in prime sections, presumably to guarantee a warm reception from the front of the house. At the same time, these VIP seats honor the work that employees put into the product by rewarding them with a front-row vantage point to the much-hyped moment of its unveiling. That proximity to the stage reflects an audience members' social status parallels seating arrangements across a range of institutions, from the church to the opera house. But seats close to the stage are not merely status markers, rather, they are desirable precisely because of the intimacy that close proximity to the stage affords. For this reason, tech show organizers (like theater producers) regularly include press sections close to the front of the house. For Apple, seating reporters close to the stage, near

[48] Hall, "Encoding/Decoding," 128–38.

[49] Dayan and Katz, *Media Events*, 211.

the Apple employees who design the products, not only provides the press an unobstructed view of the proceedings but functions as an act of inclusivity, inviting the press to be "in" on the company's vision of its products, literally as well as figuratively.

In 1984, the seating arrangement must have made the Macintosh team feel particularly high-status given the seating assigned to their coworkers in other divisions. In a reflection of a fight among Apple's leadership over whether the future of the computer company rested in the Macintosh or the Apple II, the latter team watched the proceedings via closed circuit TV from a separate room in the Flint complex. Although the camera provided a fine view of the event, the Apple II team's remote placement literalized their remove from the success of the new device.[50] They weren't, to paraphrase Gitelman, in on the success of the man whom the press was soon calling, "the Missionary of the Micros" and the "the industry's first rock'n'roll superstar."[51]

By comparison, when late-coming shareholders found themselves unable to enter the theater, Apple took great pains to make them feel as closely included in the event as those present in the room. "You may look around and say, there are wide aisles here," Apple VP Al Eisentstat explained apologetically from the podium, however, "because of fire laws, we were not able to fill those areas."[52] In response to the unexpected overflow, Apple collected voting cards from shareholders waiting outside the theater, where they listened to audio of the proceedings piped through the theater's external sound system. Still, Apple acknowledged that these were poor substitutes for actual spots in the theater – after all, shareholders seem to have

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[50] Lee Butcher, *Accidental Millionaire: The Rise and Fall of Steve Jobs at Apple Computer* (New York: Paragon House, 1987), 182.

[51] Joseph P. Kahn, "Steven Jobs Of Apple Computer: The Missionary Of Micros," *Inc.com*, April 1984, https://www.inc.com/magazine/19840401/552.html.

[52] Apple, *Steve Jobs Introduces the Original Macintosh - Apple Shareholder Event (1984)*.

begged to be allowed to sit in the aisles – and promised to find a venue in the coming weeks where they could screen footage of the proceedings for those who hadn't found a seat. By that point, of course, the voting, ostensibly the purpose of the meeting, was complete, and the shareholders outside the theater had been able to participate in the vote, in any case. However, despite their equal voting power, those outside the theater felt slighted. The subsequent viewing, perhaps partly the reason that footage of the launch exists in circulation today, indicates both the power of the live event's primacy as well as video technology's interpolation as a technology that can, however partially, extend its reach.

Viewing a recording of an event that has already transpired lacks a product launch's emphasis on the big reveal, suspense that Apple takes great care to cultivate. Thus, when Apple began livestreaming its product launches, it extended an invitation to those it couldn't accommodate in person – in this case, a global population of consumers – to watch the event in real time. Apple's decision to livestream its product launches for prospective consumers coincides with a period in which industries have capitalized on advancing technology to blur distinctions between consumption and production.[53] Including mass publics in the proceedings of a product announcement, which traditionally function as tech industry work events, constitutes yet another instance of dissolving boundaries between the activities of producers and consumers. At the same time, Apple extends invitations to attend events in person strictly to select members of the press and the tech industry, an indication of their relative power as cultural producers and also the transformation of a work event into a public spectacle for mass consumption.

Although Apple doesn't publish statistics regarding how many viewers the livestreams attract, it seems highly unlikely that they approach the viewership levels of the sorts of broadcast

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[53] Tiziana Terranova, "Free Labor," in *Digital Labor: The Internet as Playground and Factory*, ed. Trebor Scholz (New York: Routledge, 2012), 33–57.

media events that concern Dayan and Katz. Indeed, there are probably far more people who purchase Apple products than who watch the entirety of Apple's launches, the longest of which run more than two hours, and are streamed in the middle of the U.S. workday. But that is precisely the point: participation in a media event can take a multitude of forms, from the U.S. office workers who check reporters liveblogs from their cubicles to Apple enthusiasts in Australia who stay awake to watch in the middle of the night. Still others, who don't engage directly with the product launch at all, may see clips of the events on the evening news or read the op-eds inspired by product launches that appear in newspapers the next day.[54] These activities show the persistent use of mediation as a means of accessing a live event from afar.

In the fall of 2014, two years into his tenure as Apple CEO, Cook closed out Apple's fall product announcement by welcoming the rock band U2 to the stage. U2's performance indicates the increasing grandeur of these events: where John Legend had played hit songs for the 2006 MacWorld audience, U2 debuted a single from a brand new album that Apple released, on the spot, via iTunes – making the digital music store, by then a familiar Apple product, into a spectacle of unprecedented distribution. Onstage, Bono and Cook jointly counted down the seconds, New Year's Eve style, to the album's surprise upload, which Apple automatically transmitted, as a free gift, to the music libraries of every iTunes customer. Video footage shows audience members in the front rows leaping to their feet in applause. With more than half a billion customers in 120 countries, Cook explained, the event constituted "music history": it was

[54] Jonathan Sterne, "Your New iPhone Will Soon Be Trash, and that's the Point," *The Globe and Mail*, September 8, 2016, http://www.theglobeandmail.com/report-on-business/rob-commentary/a-tempest-in-a-headphone-jack/article31767127/.

the largest album release on record.[55] The U2 spectacle is perhaps the most pronounced of Apple's attempts to mark a product launch as a world historical event, and also to include those not present in the room in an ostensibly historical moment. That the stunt was widely criticized – users objected to losing control over the music library's contents – suggests not only the indeterminate reception of a media event but also the difficulties of transferring the unity engendered by live performance among those in the room to those beyond it.[56]

Obviously it can talk:
Liveness as animacy

A linguistic association of electronics with liveness dates at least as far back as 1881, when the *Oxford English Dictionary* defined "live wire" as "a wire carrying an electric current."[57] This usage built on a longer adjectival history of the word "live," meaning something "that possess[es] life" and that is "living, as opposed to 'dead.'"[58] Where a television broadcast is live because it transmits footage of an event as the event unfolds, the wire is live because it transmits electricity. Put a different way, the electrical impulse *animates* the wire. In linguistic

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[55] Apple, *Apple - September Event 2014* (Apple, 2014), https://www.youtube.com/watch?v=38IqQpwPe7s.

[56] Vijith Assar, "Apple's Devious U2 Album Giveaway Is Even Worse Than Spam," *WIRED*, September 16, 2014, https://www.wired.com/2014/09/apples-devious-u2-album-giveaway-even-worse-spam/; Kevin Roose, "Everyone Is Mad at Apple for Forcing Them to Download a U2 Album," New York Magazine, *Daily Intelligencer*, (September 11, 2014), http://nymag.com/daily/intelligencer/2014/09/everyone-mad-at-apple-for-u2-stunt.html.

[57] "Live Wire, N.," *OED Online* (Oxford: Oxford University Press, December 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/272305#eid132093266.

[58] "Live, adj.1, N., and Adv.," *OED Online* (Oxford: Oxford University Press, December 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/109299?

terms (if not biological ones) electricity renders the wire "endowed with life" or "lively."[59] Animacy, in Mel Chen's provocative articulation, "activates new theoretical formations that trouble and undo binary systems."[60] Regarded as a form of animacy, *liveness* becomes not merely contrastive ("living, as opposed to dead") but qualitative.[61] A wire, a broadcast, and Bono may all be "live" but hardly anyone would argue they manifest liveness in the same way.

When Apple unveiled the Macintosh computer in 1984, the company staged an intervention into this variegated terrain of technological liveness. In this section, I illustrate how the live demo of the Macintosh that Jobs led at the Apple shareholders meeting theatricalized the hardware and software design of the new machine. The "personal computer," a term that exists today mainly as the acronym "PC," functioned in 1984 as what linguists call a marked term. In an era when the computer was predominantly understood as a tool of corporate or government bureaucracies,[62] the *personal* marker signaled the computer's emergence as a consumer electronics product. Not coincidentally, Sherry Turkle devotes the first chapter of *The Second Self*, her foundational study of computers and sociality, published the same year as the Macintosh's debut, to asking whether smart machines are alive. The children to whom she poses the question identify tension between computers and "the notion of being alive" as well as

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[59] "Animate, Adj. and N.," *OED Online* (Oxford: Oxford University Press, December 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/7777.

[60] Mel Chen, *Animacies: Biopolitics, Racial Mattering, and Queer Affect* (Durham: Duke University Press Books, 2012), 3. Chen explicitly organizes her study around "animacy" rather than around "liveness" in order to better "theorize current anxieties around the production of humanness in contemporary times."

[61] The *OED* defines "liveness" as "the quality or condition of being alive (in various senses)." It is the precisely the variety indicated by the parenthetical which is of interest to me here. See "Liveness, N.," *OED Online* (Oxford: Oxford University Press, December 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/109320.

[62] Streeter, *The Net Effect*, 81.

between computers and "the 'human.'"[63] With the launch of the Macintosh, Apple set out to ease those tensions. The company not only construed the computer as possessing a kind of liveness, but located the computer within a dominant strata of animacy hierarchies: the human.[64]

To endow the computer with a heightened sense of liveness, the company subjected it to a complex process of animation. Of course, computers had long been imagined as possessing a kind of autonomous liveness, perhaps epitomized by the spaceship computer HAL's murderous rampage in *2001: A Space Odyssey* (1968).[65] At the same time, Turkle recounts a popular dismissal of the computer, in the late seventies and early eighties, as "just a tool."[66] Apple's vision of the Macintosh reconciled these conflicting notions of the computer – one of a dystopian monster that would come to life and overthrow its masters, the other of an inanimate utility – by imbuing the computer with a sense of humanity, making it more engaging than a tool and less threatening than a monster. In order to make the computer *personal*, Apple made it *personable*.

The product launch described at the opening of the chapter, where the Macintosh computer introduced itself to Apple shareholders, has received minimal attention for its personification of the computer. However, other dimensions of the Macintosh's animacy are better theorized, including the "human face" design of its hardware. "If a computer is viewed as a kind of thinking machine," reasons Cameron Shelly, "then it might be appropriate for it to look

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[63] Sherry Turkle, *The Second Self: Computers and the Human Spirit* (New York: Simon and Schuster, 1984), 62.

[64] Chen, *Animacies*, 30.

[65] Stanley Kubric, 2001: A Space Odyssey, SciFi, (1968); For a critique of HAL's place in the formation of computer culture, see Ted Friedman, *Electric Dreams: Computers in American Culture* (New York: New York University Press, 2005), 47–48.

[66] Sherry Turkle, *The Second Self: Computers and the Human Spirit*, Second Edition (Cambridge: MIT Press, 2005), 3.

like it has a face," and not, as with precursors to the Macintosh, "like a TV set perched on a box."[67] Shelly looks to the Macintosh's slimmer, square aesthetic as an exemplar of biomorphic design, the modeling of an artifact on a biological form.[68] Although "computing does not seem inherently to require a head-like form," he contends, "biomorphic design can supply people with cues that then affect how people assess the functionality and likeability" of the device. Thus, decades before Apple would introduce Siri, the voice of its smartphone operating system, as a kind of virtual personal assistant, Kunkel's description of the Macintosh refers to "a head on the desktop, with a face and chin, [that] encourages the user to think of it as an alter ego, a desktop friend that will always be there."[69] If the function of what Turkle calls "the computational object" as "a second self" seems natural, or obvious, that is in part because of the success of the framing that Apple gave the device. Introducing a second edition of the book, published in 2005, Turkle remarks, "we have come to accept current, specific applications of computing technology as inevitable," forgetting that "things were once different and might have developed along different paths." Chief among these shifts is the very notion of the computer as a second self: a provocation in 1984, two decades later the term no longer seemed startling.[70]

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[67] Cameron Shelley, "Biomorphism and Models in Design," in *Philosophy and Cognitive Science II: Western & Eastern Studies*, ed. Lorenzo Magnani, Ping Li, and Park, vol. 20, States in Applied Philosophy, Epistomology and Relational Ethics (No location listed: Springer International Publishing, 2015), 209, http://dx.doi.org/10.1007/978-3-319-18479-1.

[68] See Isaacson, *Steve Jobs*, 129: "the unit was taller and narrower than most computers, suggesting a head. The recess near the base evoked a gentle chin, and Jobs narrowed the strip of plastic at the top so that it avoided the Neanderthal forehead that made the Lisa subtly unattractive."

[69] Kunkel, *AppleDesign*, 26.

[70] Turkle, *The Second Self*, 2005, 4–5.

Technologically, the Macintosh's greatest departure from dominant models of computing was not the shape of its hardware but the operational logic of its software: its graphical user interface. Touted as an alternative to line-command computing, the graphical interface minimized the training required for computer operation.[71] This, too, was heralded as a humanist intervention into computing. As Deborah Lupton argues in an early study of computing and embodiment, "many potential computer users were alienated by the technological demands of computers requiring text commands, and thus required PCs to be 'humanized' to feel comfortable with the technology."[72] For Margaret Morse, where the sense of liveness that accrues to technology stems from a machine's ability to respond to input, the impression of "a subjective encounter with a persona" arises when a machine communicates in symbols.[73] This distinction accounts for the different forms of liveness possessed by a "live wire" (which delivers feedback in the form of an electric current) and a "live broadcast" (which delivers feedback in the form of intelligible sounds and recognizable images). Or, as Turkle writes with regard to early computing, line commands gave the impression of "directly addressing a machine, speaking to it in its language."[74] In contrast, graphical user interfaces employ symbolic logic, the

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[71] At a time when computing was more associated with work than with pleasure, even the friendly accessibility of Macintosh imagery occasionally proved suspect, as in a much-debated study that argued students who used Macintoshes produced less sophisticated writing than did students who used non-Apple computers. See Marcia Peoples Halio, "Student Writing: Can the Machine Maim the Message?," *Academic Computing* 4, no. 4 (1990): 16–19.

[72] Deborah Lupton, "The Embodied Computer/User," *Body & Society* 1, no. 3–4 (November 1, 1995): 107, doi:10.1177/1357034X95001003006.

[73] Margaret Morse, *Virtualities: Television, Media Art, and Cyberculture* (Bloomington: Indiana University Press, 1998), 15.

[74] Turkle, *The Second Self*, 2005, 9.

language of the human. With the live demo at the shareholders meeting, Apple reinforced that impression by giving the computer a charming robotic voice and having it speak to the audience.

The Macintosh's digital interface, like its physical structure, worked to create not only a sense of liveness but of personification. While graphical icons made computers more user-friendly ("If you can point," promised an early ad, "you can use a Macintosh"), Lupton gives special attention to the "friendly smiling face" that greeted Apple users upon startup as epitomizing the "'humanization'" of the computer.[75] Designed by Susan Kare, the "Happy Mac" image that interests Lupton gives the computer a human face by depicting two eyes and a smile on an outline of a Macintosh desktop computer; a version of it lives on today in Apple's "finder" icon. If the physical shape of the Macintosh suggested a human head, the cartoonish smiling face of the computer-within-the computer compounded the suggestion.

The product launch's personification of the computer, however, predates the creation of the "Happy Mac" image. Although Kare was a member of the small team that developed the first Macintosh, her iconic computer face didn't become what Lupton calls "the standard bearer of the Apple range," until the late eighties.[76] At the 1984 launch, the computer's startup image consisted of squiggly cursive letters that read "hello." Aden Evans, for whom the Happy Mac is "the epitome of the icon," sees this earlier image as "a more subtle version of the same message: the human and the digital can indeed meet and do so on human turf."[77] Although Evans neglects

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[75] Lupton, "The Embodied Computer/User," 107.

[76] Ibid.

[77] Aden Evans, *Logic of the Digital* (New York: Bloomsbury, 2015), 78.

to cite Kare, she would later describe her artwork in similar (if less aporetic) terms.[78] Asked in 2015 to reflect on how her graphic designs "anthropomorphicized" the computer, she remarked that the Macintosh designs were "friendly" because "that was part of the brief…the goal of this was to make computing accessible to people."[79] In any case, looking away from the bitmapped screens where Evans fears a "tail-swallowing digital trap" (he sees the computer's "essential mediation" as alienating because it can only ever represent the digital) clarifies how the personification of the computer, rather than stemming from the logics of its technological infrastructure, extends well beyond the digital.[80]

Today, Kare's sketches for early Apple images are part of the MoMA permanent collection.[81] Although Jobs' live demo of the Macintosh at the product launch may not merit similar inclusion in the annals of performance art, the presentation utilized performance to humanize the computer much the way Kare utilized graphic art. The first part of the demo, when Jobs lifted the computer from its bag and then inserted a floppy disc loaded with graphical

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[78] Evans' failure to credit (or even mention) Kare, despite his close reading of the Macintosh startup image, is made particularly egregious by his decision to give credit for her work to "computer scientist and interface guru" Alan Kay (Ibid., 76.). He muses, "though Kay was not the creator of the happy Mac image, it might still be thought of as his signature on the Macintosh interface" in that Kay, who pioneered graphical interface technology at Xerox-PARC, has a fondness for symbols recognizable to toddlers and a Jean Piaget-inflected theory of symbolic psychology (Ibid., 78–79.). Evans' analysis thus shows how it's possible to resist the "great man" narrative of Apple computing, which attributes everything to Steve Jobs, and still erase the work of an actual woman. Because of this erasure, he misses a story that is both more straightforward (it's unclear whether Kare was even familiar with Kay) and more complex (she came to Apple with a PhD in art and little knowledge of computing) than Evans seems to realize.

[79] Susan Kare, "Susan Kare in Conversation with John Gruber" (presentation, Layers: A Design Conference for the Mac+IOS Community, San Francisco, June 9, 2015).

[80] Evans, *Logic of the Digital*, 78.

[81] Paola Antonelli, "Is This for Everyone? New Design Acquisitions at MoMA," MoMA blog, *Inside/Out*, (March 4, 2015), https://www.moma.org/explore/inside_out/2015/03/04/is-this-for-everyone-new-design-acquisitions-at-moma/.

images, demonstrated its small size and graphical interface, the Macintosh's key technological innovations. The next phase of the demo underscored their social significance – animacy – through live performance. Indeed, the personification built into the device's design received its fullest realization onstage at the product launch, where the computer spoke to the audience as a character capable of human speech. As Stephen Connor argues in his groundbreaking history of ventriloquism, giving voice to an object implies that it possesses interiority, suggestive of "an animate life." Crucially, for Connor, "the voice is not merely the sign of this animation, it is the very means by which animation is accomplished."[82] At the Macintosh product launch, the computer's live address animated the machine, compounding the design choices made during the Macintosh's production while clarifying their signification: the machine could engage humans on their own terms.

After greeting the audience ("Hello, I'm Macintosh"), the computer continued to speak, as the text of its monologue appeared, in block paragraphs, across the screen. "Unaccustomed as I am to public speaking," the Macintosh confessed, "I'd like to share a maxim I thought of the first time I met an IBM mainframe: never trust a computer you can't lift!"[83] Laughter ripped through the audience, ending in a raucous cheer. While the punch line is directed at Apple's competitor, the joke works because it construes the computer as an original thinker, and imagines a world in which computers converse with one another of their own accord. Where Turkle locates the computational object "poised between the world of the animate and the inanimate," the Macintosh product demo borrowed from the world of theater to make that duality the stuff of

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[82] Steven Connor, *Dumbstruck: A Cultural History of Ventriloquism* (Oxford: Oxford University Press, 2000), 10.

[83] Apple, *Steve Jobs Introduces the Original Macintosh - Apple Shareholder Event (1984)*.

play.[84] Like a puppet that assumes its own life in the context of a theatrical production, the setup of the joke encouraged audiences to suspend disbelief, imagining the computer as an autonomous being with a social life. At the same time, the act draws attention to its own conceit, positioning the computer not as a person, but as personable nonetheless.[85]

The content of the joke matters, too, not only because an audience of Apple shareholders was eager to delight in a jab at the company's largest competitor but because, in having the Macintosh computer poke fun at its IBM counterpart, Apple relied on a fundamental process of animation. "The insult," Chen argues, "acts to contain and order many kinds of matter, including lifeless matter."[86] Although Chen's theory of animacy centers on intersectional resistance to the biopolitical orders of late capitalism, it also provides a startlingly precise model of the promotional performance that launched the Macintosh in 1984. Following Chen's contention that insults, which attempt objectification of an othered subject, paradoxically denote humanity through the suggestion of its diminishment, Apple's joke situates the IBM mainframe as an animate character, however mendacious. The bit thus presents the Macintosh as possessing a unique degree of desirable human characteristics (at least relative to Apple's competitor) even as it construes all computational objects as animate.

Finally, the joke functions as a speech act. "Linguistic insults," as per Chen, "also show that language users are 'animate theorists' in so far as they deploy and rework…orders of

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[84] Turkle, *The Second Self*, 2005, 5.

[85] Again, Connor is instructive: in ventriloquism, "will-to-belief and will-to-disbelief are tightly clasped together." See Connor, *Dumbstruck*, 209.

[86] Chen, *Animacies*, 13.

matter."[87] The Macintosh's joke thus operated on two levels of animacy. First, its content presented computers as possessing human characteristics. At the same time, its form – the computer's live address – enacted the assertion. It's unlikely that anyone watching the demo believed that a Macintosh and an IBM could, in reality, go on social outings together, let alone return from them with witty insults; the laughter comes, in part, from the absurdity of the suggestion. The Macintosh's monologue demonstrated not the real life applications of the technology but its affective associations: the computer as a friendly, interactive device. Live performance animated the machine.

So too did live performance set the affective tone of the product launch, more broadly. Although the shareholder vote constituted the meeting's first order of business, proceedings more filled with technocratic discourse than with artistry or entertainment, Jobs called the meeting to order with loftier rhetoric. "I'd like to open the meeting with part of an old poem," he announced, and then, seeming to rush over an intended beat in his memorized lines, "about a twenty-year-old poem by Dylan. That's *Bob* Dylan."[88] As Jeffrey Young would quip in the earliest biography of Jobs, "it must have been the first time that Bob Dylan's lyrics opened a shareholders' meeting." Written without the reverence that would characterize later biographies, Young's description goes on to recount "a smattering of applause from the Macintosh partisans in the front, but bewilderment from the shareholders" and a press section skeptical of "crowd manipulation."[89] (By contrast, Isaacson, in a signature combination of psychical interpretation and genial justification, identifies the lyrics as "the anthem that kept the millionaire board

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[87] Ibid.

[88] Apple, *Steve Jobs Introduces the Original Macintosh - Apple Shareholder Event (1984)*.

[89] Jeffrey S. Young, *Steve Jobs: The Journey Is the Reward* (Glenview: Scott, Foresman and Company, 1988), 333.

chairman in touch with his countercultural self-image" and, so as not to belie the image, notes that Jobs "had a bootleg copy of his favorite version.")[90] Agnostic on the subject of Jobs' interiority, I propose we consider the recitation – like the product launch more generally – less a form of manipulation than a provocation. By citing Dylan, whom the Nobel Prize committee on literature would later credit with "having created new poetic expressions," Jobs proposed a link between Apple products and poiesis.[91] His dramatic recitation exploited the meeting's theatrical setting from the outset, setting the stage, as it were, for the acts of performance to come.

We can still further recognize the significance of live performance to the computer demo by attending to its absence: live performance was not the only means through which the launch set the affective sensibility of the event. Consider the first component of the demo, when images of the Macintosh's graphical capabilities scrolled across the screen, accompanied by a recording of *Chariots of Fire*, the theme of the 1981 film of the same name, about the triumph of underdog Olympians. While redeploying momentous Hollywood theme music for industrial marketing purposes is not especially unique, the story behind the use of *Chariots of Fire* in the Macintosh demo illustrates its aesthetic rather than demonstrative purpose.[92] A week before the shareholders meeting, Jobs tasked the Macintosh team with writing software that would allow the computer to play the score during the demo. "It's hard to write a music editor/player in two days," developer Andy Hertzfeld would later recall, in what is surely an understatement. Nevertheless, he proved himself up to the task—but, he explains, "it didn't sound very good, and Steve immediately

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[90] Isaacson, *Steve Jobs*, 168.

[91] "The Nobel Prize in Literature 2016 - Press Release," Nobel Media, *Nobelprize.org*, (October 13, 2016), https://www.nobelprize.org/nobel_prizes/literature/laureates/2016/press.html.

[92] For a study of the use of emotion in advertising music, see Timothy Dean Taylor, *The Sounds of Capitalism: Advertising, Music, and the Conquest of Culture* (Chicago: The University of Chicago Press, 2012), 101–25, http://public.eblib.com/choice/publicfullrecord.aspx?p=965307.

rejected it" in favor of "using a CD."[93] The musical composition thus served the product launch not as an example of the computer's technological capabilities but because of the aesthetic sensibility it lent the unveiling.[94]

My point here is not that Jobs relied on artistic forms to mask the "truth" of Apple's technological prowess or corporate purpose. Rather, the sweeping symphonic score worked to mark the shareholders meeting as a site of cultural import and the launch of the Macintosh as a cultural event. Similarly, the company staged an act starring an affable, talking, joke-telling Macintosh, not because it believed the computer had a future career in standup comedy, but because the act performed the computer's friendliness toward its prospective users, a key *meaning* of the technology.

The merits of a theatrical sound system versus computer-generated music are not exactly what Adorno had in mind when parsing the distinction between "mechanical music" and the limited expressive capacity of "talking machines."[95] Nonetheless, more than a half-century after Adorno critiqued the gramophone's inability to freely interpret music ("the obedient machine…follows the interpreter in patient imitation of every nuance"[96]), Apple's 1984 computer demo played precisely on the obvious illusion that a talking machine—here, the Macintosh—could produce sound of its own accord. Although the "obedient machine's" faithful

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[93] Hertzfeld, *Revolution in The Valley*, 214.

[94] Historical memory on the subject would prove fuzzy in any case: in *MacWorld*'s 30 year retrospective of the launch, the song emanates from the computer. See Linzmayer, "1984: The Birth of the Macintosh."

[95] Theodor W. Adorno, "The Curves of the Needle," in *Essays on Music*, ed. Richard D. Leppert, trans. Susan H. Gillespie (Berkeley: University of California Press, 2002), 272.

[96] Ibid.

recitation of text hardly qualified as key to Apple's vision for the product, the Macintosh's direct address to the audience stole the show. Both the soundtrack and the talking machine provided the demo with an affective frame. The former imbued the computer with dramatic import; the latter with animacy.

The humanization of the machine continued through the final component of its address. "Obviously I can talk," explained the machine, "but right now I'd like to sit back and listen. And so, it is with considerable pride that I introduce a man who's been like a father to me." The machine paused, signaled by an ellipses on the screen, before announcing, in all-caps: "STEVE JOBS."[97] These final lines made clear that if the computer enjoyed autonomy, its autonomy was bound to the man with whom it shared a stage. For insiders aware that Jobs had a tenuous relationship with his real-life daughter, whom he had publically suggested wasn't his just a year earlier, the line must have sat awkwardly.[98] That no one nixed it perhaps suggests that later narratives exaggerate the company's disapproval of Jobs' personal problems.[99] At the same time, the inclusion of a line that references the computer as Jobs' child shows the extent to which the product launch, in construing Jobs as an inventor, also served to naturalize the computer as an animate object.

The blood in the machine:

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[97] Apple, *Steve Jobs Introduces the Original Macintosh - Apple Shareholder Event (1984)*.

[98] Isaacson, *Steve Jobs*, 90.

[99] In screen depictions of Jobs' career, his oldest daughter appears with surprising ubiquity as a plot device: Jobs' initial denial of paternity creates strain among his coworkers at Apple and his eventual reconciliation with his daughter, which always comes at the end of the film no matter the time period it depicts, indicates his personal character growth. See Boyle, *Steve Jobs*; Joshua Michael Stern, *Jobs*, Biography, (2013); Martyn Burke, "Pirates of Silicon Valley," June 20, 1999.

Liveness as vitality

30 years after the introduction of the Macintosh, and two years after Tim Cook took the reigns as Apple's CEO, he transferred the biological genesis of Apple products to the whole of the corporation. "Music runs deep in Apple's DNA," he told the audience before introducing U2 at Apple's 2014 product announcement, "and it runs through the core of all of our products." On the screen behind him, an image of a red heart made up of hundreds of album covers gave way to a lineup of Apple's signature products, including an Apple Watch, launched earlier that day.[100] Yet as the 1984 decision to play *Chariots of Fire* over the theater's sound system indicates, Apple's roots had little to do with music. A 1981 legal settlement with Apple Corps, the Beatles' holding company, had barred the computer company from involvement in the music industry, and every foray Apple made into music technology was met with a subsequent lawsuit.[101] Cook's examples thus stretched only as far back as the previous decade, when Apple and Apple renegotiated the terms of their settlement: he cited the wild success of iTunes as well as the iTunes Music Festival, a London-based concert series, where, Cook told the audience, "we've had some of the best musical artists in history performing."[102] That is, he reminded audiences of Apple's musical credentials with references to both its software and its investment in the live event.

To understand how media technologies gain a sense of vitality when introduced through live performance, this section explores some of the tensions between liveness and mediation

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[100] Apple, *Apple - September Event 2014*.

[101] Laura Roberts, "Apple vs Apple: Long-Running Legal Dispute Delayed Beatle's iTunes Deal," November 16, 2010, sec. Culture, http://www.telegraph.co.uk/culture/music/music-news/8136469/Apple-vs-Apple-long-running-legal-dispute-delayed-Beatles-iTunes-deal.html.

[102] Cook, "U2 Performance."

under capitalism. Given how carefully corporate product launches are scripted, it's worth noting Cook's peculiar use of the present perfect tense: his very language appeals to the "now," that in Peggy Phelan's analysis, live performance engages, but economies based in reproduction rarely recognize as having value.[103] Yet live performing bodies matter to Apple (as to Cook's semantics) not only as the raw material of reproduction but also as a marker of value, signifying the *liveness* that Apple technologies mediate. Where the Macintosh demo animated the computer by having it function as a live actor, other demos use the spatial and temporal affordances of live performance to imbue technology with a vitality that exceeds the human. Again, the *OED* is instructive. It defines vitality first as "the principle of life" and "animation" as well as "something possessed of vital force" and the "power of enduring or continuing."[104] These are the properties of media technologies, harnessed with the power of live performance. Cook's rhetorical construction mimics the capacities of Apple's music software by placing performance in a perfect present, continually streaming.

Tensions between mediation and liveness characterize some of the earliest cultural understandings of both theater and media. The Greeks, as John Durham Peters argues, theorized writing as a means of communicating across space and time: "The far could now speak to the near and the dead could now speak to the living."[105] Writing thus presages for Peters the media of the nineteenth and twentieth centuries that collapse distance between discrete timeframes

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[103] Peggy Phelan, *Unmarked: The Politics of Performance* (New York: Routledge, 1993), 146.

[104] "Vitality, N.," *OED Online* (Oxford: Oxford University Press, December 2016), http://www.oed.com.proxy3.library.mcgill.ca/view/Entry/224025.

[105] John Durham Peters, *Speaking into the Air: A History of the Idea of Communication* (Chicago: University Of Chicago Press, 1999), 138.

(recording technologies) and geographies (transmission technologies).[106] Although Peters' sweeping intellectual history of communication has surprisingly little to say about theater, it too has a longstanding history as a form of recording and transmitting both cultural memory and human feeling. "Ghostly storytellers and recalled events," argues Marvin Carlson, "are the common coin of theatre everywhere in the world at every period."[107]

Writing and theater, of course, communicate differently: the former is set after pen is put to paper (or whatever medium) where the latter is ephemeral, and requires the engagement of human actors. As Carlson puts it, "text does not in fact become theater until it is embodied by an actor and presented to an audience."[108] A theatrical production does not showcase a dramatic script in exactly same way that a tech demo showcases a product, however the process of theatrical enlivenment operates similarly: at their most fully realized, tech demos use live performance in order to imbue new devices with a sense of liveness.

In looking at what live performance does to media technologies, I approach their relationship somewhat differently than does much performance theory, which is more concerned with the effects of media technology on live performance. Rehearsals of the debate surrounding liveness's intersection with media typically start with Phelan's provocation that performance exists only in the present. "To the degree that performance attempts to enter the economy of reproduction," she argues, "it betrays and lessens the promise of its own ontology."[109] However,

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[106] Ibid., 61.

[107] Marvin A. Carlson, *The Haunted Stage: The Theatre as Memory Machine* (Ann Arbor: University of Michigan Press, 2003), 3.

[108] Ibid., 52.

[109] Phelan, *Unmarked*, 146. This much-cited remark is typically taken to mean that performance, in Phelan's analysis, defies any kind of mediation. However more careful attention to media

her focus on the ephemerality of performance in fact rarely contraposes it with mediation (the word appears in the book but once.)[110] Only with Philip Auslander's intervention into Phelan's work did "the liveness debate" acquire a media-centric frame, rooted in Auslander's identification of sites from the concert hall to the courtroom that intertwine live performance and mediation such that, in his estimation, "there are few grounds on which to make ontological distinctions."[111] Auslander (like Dayan and Katz) looks to television not only as dominant cultural form but as a medium whose foundation in the transmission of live events "enabled television to colonize liveness."[112] He thus sees cultural critics who lament theater's diminished social prominence as reflecting anxiety over the future of performance in a media-saturated culture.[113]

More recent scholarship, suggests the alleviation of any such anxiety—but the persistence of convergence between mediated and unmediated forms.[114] Where the early liveness debates

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forms suggests that, in this framework, performance is at odds with recording technologies only; transmission technologies, while testing the boundaries of space, align with performance's tendency towards disappearance.

[110] Phelan, *Unmarked*, 99. Similarly, all three mentions of "media" refer to news coverage. See pages 130, 137, and 179.

[111] Philip Auslander, *Liveness: Performance in a Mediatized Culture* (New York: Routledge, 1999), 51.

[112] Ibid., 13.

[113] Ibid., 42.

[114] Since the original liveness debates, both Phelan and Auslander have walked back their more polemical claims regarding the ontology of live performance. Phelan now allows for the possibility of performance that transcends the present; Auslander for a definition of liveness that is socially constituted rather than technologically determined. See Peggy Phelan, "Peggy Phelan and Una Choudhuri: Performance in an Expanded Temporal Field" (Plenary Dialogue, PSi 17, Palo Alto, June 29, 2013); Philip Auslander, "Digital Liveness: A Historico-Philosophical

saw live performance as antithetical to capitalist circulation (if only to the extent that it can maintain its distinction from media forms), more recent research of media and performance is inspired less by Auslander's supposition that media and performance are ontologically indistinct cultural competitors than by the media technologies that have appeared on avant-garde stages and in performances of the everyday since the 1990s.[115] Product launches operate in tension with both frameworks, first by evidencing the utility of liveness to capitalism (a point to which I will return), and second by indexing some of the ways that live performance shapes technology just as much as technology shapes live performance. For instance, calling for new theoretical frameworks that might more fully account for the interrelationship between media and performance, Sarah Bay-Chang, Jennifer Parker-Starbuck, and David Z. Saltz argue: "New technologies both enable technologically dependent theater and facilitate new modes of performance outside of traditional theater venues. Understanding these connections is thus not just a matter of theatre and performance studies, but necessary for a broader comprehension of contemporary culture."[116] Whether concerned with digital projections of live bodies on a gallery

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Perspective," *PAJ: A Journal of Performance and Art* 34, no. 3 (August 27, 2012): 3–11, doi:10.1162/PAJJ_a_00106.

[115] Sarah Bay-Cheng, Jennifer Parker-Starbuck, and David Z. Saltz, *Performance and Media: Taxonomies for a Changing Field* (Ann Arbor: University of Michigan Press, 2015); Sarah Bay-Cheng et al., eds., *Mapping Intermediality in Performance*, MediaMatters 5 (Amsterdam: Amsterdam University Press, 2011); Steve Benford and Gabriella Giannachi, *Performing Mixed Reality* (Cambridge: MIT Press, 2011); Rosemary Klich and Edward Scheer, *Multimedia Performance* (New York: Palgrave Macmilan, 2011); Chris Salter, *Entangled: Technology and the Transformation of Performance* (Cambridge: MIT Press, 2010); Matthew Causey, *Theatre and Performance in Digital Culture: From Simulation to Embeddedness* (New York: Routledge, 2009); Steve Dixon, *Digital Performance: A History of New Media in Theater, Dance, Performance Art, and Installation* (Cambridge: MIT Press, 2007); Freda Chapple and Chiel Kattenbelt, eds., *Intermediality in Theatre and Performance* (Amsterdam: Rodopi, 2006).

[116] Bay-Cheng, Parker-Starbuck, and Saltz, *Performance and Media*, 2.

wall or with performances of identity staged via Instagram, they identify new technologies as "facilitating" new kinds of performance.

Might we approach the relationship from the other direction? How does live performance "facilitate" new technology, as at a tech demo—and what can that teach us about emerging cultural forms? Although Auslander zeroes in on television as a foundational medium of liveness, noting that industrial and popular discourses emphasized its relationship to liveness from the first phases of its development, live performance centered prominently in the social implications of early recording technologies, as well.[117] The very language used to describe such recording – as in, "captured on film," for example – indicates a technological attempt, however partial, to mitigate the vanishing act that Phelan identifies as essential to the ontology of performance. My point is not that media technologies have rendered live performance reproducible but rather that media histories show how, even as performance resists replication, its very elusiveness drove the social meanings of modern technologies devoted to recording it. Here, I refer less to the live performance captured by a recording device (which, for Phelan, ceases to be performance upon reproduction) than to an association with liveness that regularly gives recording technologies social meanings, particularly during periods of popularization or phase-change. Consider, for instance, Roland Barthes' meditation on photography as a medium haunted by the inevitability of its subjects' death or the popular celebration of early sound recording as a preservative for the voices of the dead.[118] In these examples, the live performance captured by the recording devices disappears, yet its sustained liveliness imbues the media technologies with aesthetic significance and cultural import.

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[117] Auslander, *Liveness*, 13.

[118] Roland Barthes, *Camera Lucida: Reflections on Photography* (New York: Hill and Wang, 1982), 9; Jonathan Sterne, *The Audible Past* (Durham: Duke University Press, 2003), 287.

Moreover, as recording technologies develop over time, their status as media of liveness (and deadness) persists. Building on Joseph Roach's proposition that "modernity itself might be understood as a new way of handling (and thinking about) the dead,"[119] Jason Stanyek and Benjamin Piekut respond that, "the mechanisms and procedures through which this handling takes place are under constant revision."[120] Looking to the transition from analogue to digital sound recording, Stanyek and Piekut focus on the Grammy-winning recording of *Unforgettable* (1991), which Nat "King" Cole posthumously sings with his daughter Natalie, as heralding an era of what they term the "intermundane," in which technologies produce value by recombining the dead with the living.[121] "Being recorded," they argue, "means being enrolled in futures (and pasts) that one cannot wholly predict nor control."[122] Here, again, the ontological present tense of live performance both escapes and structures expanded attempts to capture it.

Nor is the relationship between liveness and technology restricted to recording devices; transmission technologies are valued precisely to the extent that they are "live," where live indicates simultaneity across distance. The very term "live performance," as Auslander has recently asserted, emerged in conjunction with this latter category of technology, as radio broadcasters sought to distinguish material played "live" over the airways from recordings.[123]

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[119] Joseph Roach, *Cities of the Dead: Circum-Atlantic Performance* (New York: Columbia University Press, 1996), 14.

[120] Jason Stanyek and Benjamin Piekut, "Deadness: Technologies of the Intermundane," *TDR: The Drama Review* 54, no. 1 (2010): 14.

[121] Ibid., 16–17. The sentence clause describing the song, in the present tense with Nat "King" Cole in the subject position, illustrates both the perpetual present tense enabled by recording and the agency that, in Stanyek and Piekut's analysis, belongs to the dead in the recording studio.

[122] Ibid., 18.

[123] Auslander, *Liveness*, 4–5.

Because Auslander gives little attention to the twinning of liveness with deadness,[124] Peters' media history more forcefully suggests the stakes of the discursive liveness that emerged alongside broadcast media: "the difficulty of distinguishing communication at a distance from communication with the dead."[125] In other words, while transmission technologies led to a redefinition of liveness, their own relationship to live bodies, relative to recording technologies, gave them value. "The central dilemma of modern communication," argues Peters, is "not the ghost in the machine, but the body in the medium."[126] Or, as Bono reverentially told Cook following U2's performance at the Apple product launch, "We're the blood in your machines!"[127]

Bono's off-the-cuff remark indexes more than a century of sentiment towards media technologies, which values them for their abilities to capture and transmit liveness. It also calls to mind Karl Marx's much-quoted figuration of capitalist vampirism: "Capital is dead labor, that, vampire-like, only lives by sucking living labor, and lives the more, the more it sucks."[128] Presumably, Bono's intended meaning skews more closely to the former sentiment, that liveness vitalizes media technology, than to the latter, which would accuse Apple of using its music

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[124] To see Auslander's framework applied to performance's relationship with death, see Causey, *Theatre and Performance in Digital Culture*.

[125] Peters, *Speaking into the Air*, 149.

[126] Ibid., 225.

[127] Apple, *Apple - September Event 2014*. The full exchange entailed Bono explaining that U2 had waited to release the album until it was as good as could be, to which Cook responded that Apple feels the same way about its products, prompting Bono's response, "we're the blood in your machines, oh Zen master of heart and software Tim Cook." Throughout the giddy exchange, the pair exchanged elaborate bows. This exchange of reverence deserves further analysis, particularly in light of Steve Jobs' early, public predilection for eastern religions, and also because (though I could be wrong) the bit strikes me as one of the few unrehearsed moments of the launch.

[128] Karl Marx, *Capital: A Critique of Political Economy Vol. I*, ed. Friedrich Engels, trans. Samuel Moore and Edward B Aveling (London: Electric Book Co., 2001), 336.

software as a tool of labor exploitation against musicians (that charge would come later, from Taylor Swift).[129] Nonetheless, the line suggests an entanglement of liveness and technology with capitalism that is oddly absent from much recent literature on media and performance. Stanyek and Piekut are a key exception: they theorize recording technologies as participating in a late capitalist economy that extracts labor-value from the dead.[130] Tellingly, their study is chiefly concerned with music and sound studies; they do not engage the Phelan/Auslander debate regularly rehearsed by studies written from more theater-centric vantage points.[131] Yet while these subsequent studies provide nuanced aesthetic analyses, they rarely, if ever, address the backbone of Phelan and Auslander's debate, the relationship between performance and media under capitalism.

Thinking about commercial technology in relation to the liveness debates brings their concern with capitalism to the fore: capitalist cultural economies frame both ends of the liveness debate, albeit in different ways. Auslander opens his study by proposing that "theater and the media" function as unequal "rivals" in a cultural economy dominated by mass media, and that in order to compete, live events have become increasingly like mediated ones, so much so that, at the level of ontology, they are indistinguishable.[132] Meanwhile, the ontological uniqueness that

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[129] Taylor Swift, "To Apple, Love Taylor," Tumblr, *Taylor Swift*, (June 28, 2015), http://taylorswift.tumblr.com/post/122071902085/to-apple-love-taylor.

[130] It would be interesting, if outside the limits of this chapter, to read Stanyek and Piekut's theory of recording technology and late capitalist labor alongside Phelan's theory of recording technology and late capitalist circulation. Stanyek and Piekut, "Deadness," 14; Phelan, *Unmarked*, 146.

[131] Bay-Cheng, Parker-Starbuck, and Saltz, *Performance and Media*; Klich and Scheer, *Multimedia Performance*; Causey, *Theatre and Performance in Digital Culture*; Dixon, *Digital Performance*.

[132] Auslander, *Liveness*, 1; 7.

Phelan ascribes to performance, so often cited by later studies, matters to her precisely because of its political implications, which later work fails to recall. Writing against a late twentieth century turn toward visibility politics, which she rejects as "compatible with capitalism's relentless appetite for new markets," and thus reproductive of capitalism, Phelan looks to performance's tendency toward disappearance – its ability to represent but not reproduce – as suggesting an alternative politics.[133] In other words, where Phelan sees live performance as un-reproducible and therefore outside capitalism, Auslander sees live performance as reproducible, and therefore a failed site of resistance. Both theorize performance as valuable to capitalism only to the extent that liveness is recuperable by reproductive technics—a tenet belied by a promotional culture that, with product launches, apprehends live performance not as a potential object of reproduction but as a final node of the production process itself. Liveness matters to capital on its own terms.

Product launches presented according to the conventions of live theater evidence the utility of liveness to capitalism on a number of fronts, including its ability to enliven emerging technologies, thereby shaping the technologies' social meaning. Surprise performances by Grammy-winning artists at product launches are perhaps an obvious way to reinforce a connection between live performance and media technology while also providing audiences with spectacular entertainment. Consider, however, that demos themselves likewise utilize performance to stage technology's interpersonal vitality and engagement with the present moment, both hallmarks of live performance.[134] The iPhone, Apple's 2007 foray into telephony,

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[133] Phelan, *Unmarked*, 11.

[134] Steve Dixon, for instance, includes both "the effect of both human and nonhuman presence" and also "engagement with the temporal moment of the present" as central characteristics of performance. See Dixon, *Digital Performance*, xxiii.

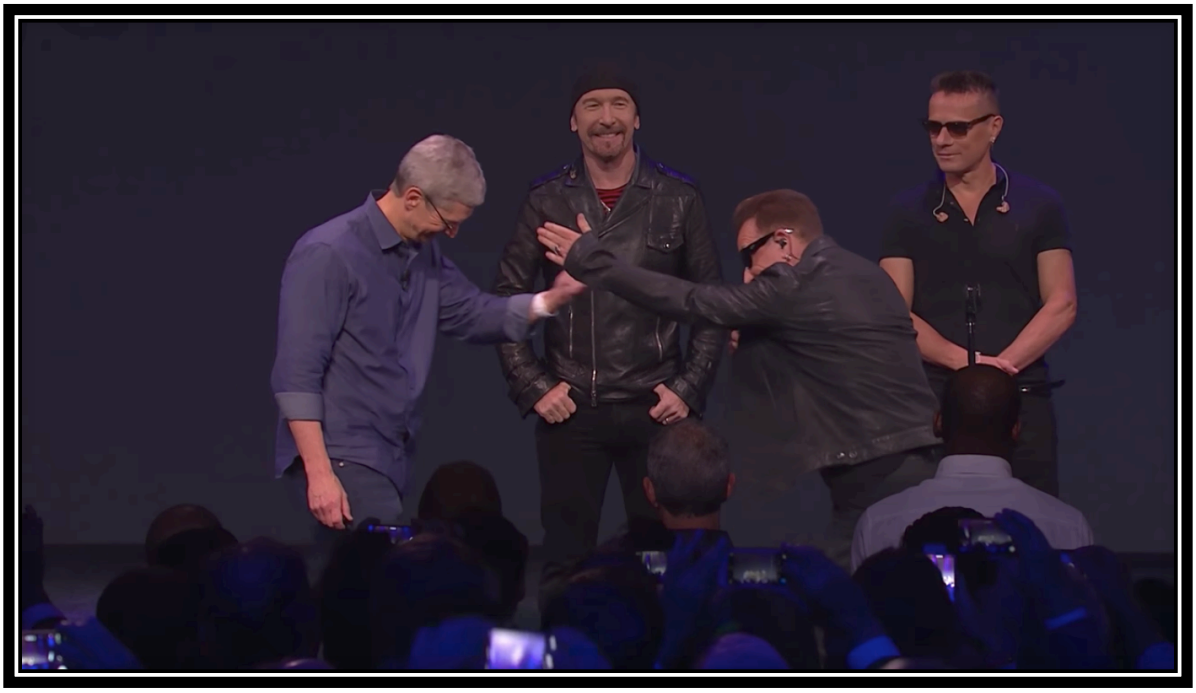

Figure 3: Tim Cook and Bono salute each other, Apple Special Event, 2014. (Still from Apple livestream.)

Figure 4: Steve Jobs demos the iPhone, MacWorld, 2007. (Still from Apple livestream.)

provides an especially illustrative example. In performance terminology, the demo was intermedial: Jobs stood at a lectern downstage left, addressing the audience in front of him as he operated the phone; a cable synched the phone's screen with an LCD screen hung across the stage, enabling audiences to see the effect of his interaction with the device in real time; and a digital video feed, from a camera with a tight focus on Jobs' hands, played in the upper right-hand corner of the screen, so that audiences could see movements of his fingertips. These multiple mediations drew attention to the interactivity between Jobs and the device. "To unlock the phone," explained Jobs, "I just take my finger and sliiiiide it across," drawing out the operative word as he glided his finger across the bottom of the phone's screen. "Want to see that again?"[135] To an audience of Apple faithful that had never before seen a smartphone with a touch interface, this was thrilling: the MacWorld auditorium resounded with applause.

Having unlocked the phone in real time, to dramatic effect, Jobs first took audiences through the phone's music-playing features. He opened this part of the demo by explaining that the iPhone would function, in part, like an iPod, Apple's portable MP3 player whose hand-sized, rectangular shape the new smartphone resembled. However, unlike previous generations of the iPod, the iPhone had no external click wheel – users would operate it through direct interaction with the screen.[136] "How do I scroll through my list of artists?" Jobs asked, anticipating his audience's question, and then answered, "I just take my finger, and I scroll." The audience hooted and hollered. Jobs then demonstrated how to select musical tracks by sampling The Beatles (with whom Apple was then renegotiating its settlement) and Bob Dylan (a perennial

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[135] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007)* (EverySteveJobsVideo, 2013), https://www.youtube.com/watch?v=-3gw1XddJuc.

[136] For a study of digital interfaces and music, see Victoria Simon, "Musical Screens and the Creative Touch" (Dissertation, McGill University, Forthcoming).

Jobs' favorite). "You can touch your music!" he told the audience, a refrain repeated throughout the demo.[137]

Despite the implication of the demo, "touchable music" was no novel concept. "The first means of musical presentation that can be possessed as a thing," in Adorno's analysis, was the phonograph record.[138] Anticipating the liveness debate that would confound performance theorists at the end of the century, Adorno looked to the phonograph record as heralding the subsumption of live performance into mediated forms, a "process of petrification" in which "the dead art rescues the ephemeral and perishing art as the only one alive."[139] If the iPhone's emphasis on touchable music marked a new form of musical commodification, it also emphasized continued investment in construing the technological device itself as a medium of liveness. However, where Adorno imagined a world where people would be able to "read" the grooves of a record, Jobs cultivated tension and awe by presenting the device's mechanisms as beyond user comprehension.[140] "It works," he told the audience, "like magic."[141]

The primary emphases during the first part of the demo, on the iPhone's receptiveness to human touch, neatly set up the demo's next component, which introduced the "phone" component of the device by presenting it as a conduit of interpersonal connectivity. To demonstrate the iPhone's telephonic capabilities, Jobs utilized the long-standing theatrical tradition of audience plants. He first took audiences through his phone's contacts section, and

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[137] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007)*.

[138] Theodor W. Adorno, "The Form of the Phonograph Record," in *Essays on Music*, ed. Richard D. Leppert, trans. Susan H. Gillespie (Berkeley: University of California Press, 2002), 278.

[139] Ibid., 279.

[140] Ibid., 279–80.

[141] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007)*.

then demoed placing a call by tapping the name of Apple designer Jony Ive: "I can't tell you how thrilled I am to make the first public phone call with iPhone." Holding the phone in his hand, Jobs sometimes looked at the screen, making the phone conversation the ostensible object of his attention, and sometimes out to the audience, giving the house a warm smile that invited them to share in the moment. Ive, of course, was in the audience, and stood in the aisle as he took the call. Unlike with early demonstrations of telephony, the object of the demo was not that two people could communicate at a distance but the ease of the interface – and the kinds of communication it could enable. Jobs began, for a moment, to wax reminiscent with Ive about the iPhone's development process, when suddenly he cried out, "Whoa! What is this? I've got another call coming in! Jony, can I put you on hold for a minute?"

The call, as the saying goes, was coming from inside the house.[142] "Hi Steve," said marketing executive Phil Shiller, from the opposite side of the orchestra section, "I wanted to be the first call!"[143] The audience broke into a laugh. Happily, inter-Apple rivalry was averted: by tapping "merge calls," Jobs showed the audience, he could speak with both men at once. High drama? No. Still, it's worth noting that the stunt played largely on the reality that all three men were in fact physically present in the theater, eliciting laughs at the absurdity of the premise while also raising the stakes of its immediate pacification, however in jest. In presenting a collective intimacy made possible through a shared telephonic moment, and showcasing it inside the theater, the stunt engaged the deep structure of live performance. More than merely a creative means of introducing users to the iPhone's digital interface and call management capabilities, the

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[142] See Fred Walton, *When a Stranger Calls*, Horror, (1979). The film's catchphrase, of course, plays on the telephone's eeriness that Peters describes, literalizing the threat of invasion of associated with the disembodied other on the phone.

[143] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007)*.

demo used the social and temporal affordances of live performance in order to present its new technology as a vital medium.

Given that the telephone call took place among three men present in the theater, "the first public call with iPhone" marks, in a sense, a very different exchange than that of the world's first telephone call, in which Alexander Graham Bell summoned his assistant through the new machine: "Mr. Watson, come here, I want you." Peters reads this famous first telephonic transmission as "the symbol and type of all communication at a distance—an expression of desire for the presence of the absent other."[144] Live performance, by contrast, is rooted in the promise of unmediated contact. "The utopian theater," writes playwright and performer Anna Deavere Smith, "would long for flesh, blood, and breathing. It would be hopelessly old-fashioned in technical world…hopelessly interested in modes of communication requiring human beings to be *in the same room at the same time*."[145] Writing a century after Bell placed the first phone call and two decades before the iPhone, Smith contraposes the promise of theatrical presence not only with the partial presence of the telephone, but with its use as a screening mechanism, a technology of social avoidance rather than mediated connection. Smith's utopian theater, "would be responsive, in contrast to today's society where, for example, one's success might be measured by the number of calls one fails to return."[146] That success manifests in the luxury of not having to answer the telephone in fact links the iPhone demo with the telephone's primal scene: a business celebrity addresses his subordinates.

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[144] Peters, *Speaking into the Air*, 180.

[145] Anna Deavere Smith, "A System of Lights," *Theater* 26, no. 1 and 2 (June 20, 1995): 50, doi:10.1215/01610775-26-1 and 2-50. Emphases added.

[146] Ibid., 50–51.

Failure to return telephone calls, in Smith's formulation, stands in for a larger failure of human connection. The utopian theater makes presence *in the same room at the same time* a foundation for intimacy where less ideal conditions fail to do so. In that sense, the iPhone launch's three-way call demo illustrates a communicative conundrum that Peters identifies as a basic anxiety of modernity, underscored and inspired by communication technologies, but by no means limited to them. "The problem of communication becomes not only one of getting messages across the waste expanses traversed by the telegraph wires," he surmises, but also "of making contact with the person sitting next to you."[147] The iPhone demo suggested that the new cell phone's "merge call" feature could solve both forms of communicative blockage: as a telephone, it has the power to connect users at a distance, and its innovative features enable direct access to the desired user even as he engages with someone else. Like the live broadcasts in which Dayan and Katz see the potential for social unity, the new cell phone, promised the demo, would bring people together on a singular channel in real time, forging harmony among otherwise discordant individuals.

The telephone has a long history as a dynamic stage device. Peters turns to twentieth century fiction by writers from Dorothy Parker to Franz Kafka as indicative of "the telephonic uncanny," where the possibility of a disembodied voice on the telephone indexes twentieth century anxiety over social alienation.[148] The communicative challenges drawn into relief by the telephone – making oneself understood and interpreting an other's meaning – likewise make it compelling onstage. Consider John Guare's *House of Blue Leaves* or David Mamet's *Oleanna*, each of which reveals plot resolutions through a character's reaction to a voice on the telephone

[147] Peters, *Speaking into the Air*, 178.

[148] Ibid., 200.

that the audience never hears, or the more experimental Phone Plays commissioned by the Actors Theater of Louisville, where audience members listen via telephone extension to scripted phone conversations by actors on the line.[149] Beyond reflecting the ubiquity of the telephone in twentieth century life, these works, as with the short fiction that concerns Peters, use the telephone to question the possibility of total comprehension in social exchange; they also show how a technology that renders present an absent other aligns with theatrical apparition, long devoted to embodying the ephemeral. In each of these works, the telephone, in Bey-Cheng, Parker-Starbuck, and Saltz's terms, "facilitates" both the performance of the everyday (within the world of the plays) and an experimental mode of theatrical performance (as with the phone booths set up in the ATL lobby). What distinguishes promotional performance from these works of art is that it renders the telephonic uncanny a social salve. Where old forms of telephony presented problems of communication, the Apple launch's live demo promised that its more advanced technology would overcome them, remaking the telephone as a medium not only of interpersonal intimacy but of social unity, as well.

Only with the final segment of the demo did the limits of that unity become clear. Where the first two portions of the demo had presented the iPhone as part "iPod" and part "phone," Jobs concluded the demo by introducing the iPhone as an "internet communicator."[150] That neither a preexisting technology nor a product name suitably described the iPhone's web capabilities signaled that, however transformative the digital interface for browsing music or making calls, this last component of the iPhone heralded its most cutting-edge applications. Demoing the

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[149] John Guare, *The House of Blue Leaves and Two Other Plays* (New York: NAL Penguin, 1987), 41–42; David Mamet, *Oleanna* (New York: Pantheon Books, 1992), 77; Tanya Palmer and Amy Wegener, eds., *Humana Festival 2001: The Complete Plays* (Lyme: Smith and Kraus, 2001), 427–54.

[150] Apple, *Apple - September Event 2014*.

iPhone's ability to load complete web pages – mobile versions of websites would not emerge until after digital interfaces like the iPhone's became standard – Jobs called putting the full internet on a mobile device "a revolution of the first order." Indeed, the ability to easily access the web from a mobile device would have a more profound effect on social life than would the ability to merge mobile calls, however, as with the merged call feature, the demo made the social uses of the "internet communicator" most apparent by relying on the affordances of live performance.

To introduce the audience to the iPhone as an internet communications device, Jobs began by taking audiences through the phone's mail feature, emphasizing its high resolution, in-line photo attachments and its automated detection of phone numbers: a sample email about sushi reservations included the restaurant's number, with the text hyperlinked in blue.[151] Jobs tapped the number and the phone placed the call: the phone keypad emerged on the screen, displaying the restaurant phone number, and ringing on the other end began to play over the sound system. "I don't really want to call them," said Jobs, "so I'm going to end the call here." The audience laughed. But the remark was not a punch line so much as a setup. A few minutes later, while demoing Google Maps for iPhone, Jobs told audiences, "I'm going to certainly want a cup of coffee afterwards, so I'm going to look for Starbucks." When he typed "Starbucks" into the map's search bar, a map with every store in the vicinity appeared on the screen. The audience laughed and clapped. Jobs then tapped on one of the Starbucks locations to place a call, and this time, he allowed it to go through. "Good morning, this is Starbucks," said a voice on the other end, "how can I help you?"

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[151] Regarding the demo of emailed photos, it is worth noting that the three ways Apple suggested the audience think of the iPhone – as an iPod, a phone, and internet communication device – failed to anticipate the centrality of the camera to the social significance of the smartphone, an indication of the social negotiation that takes place after a product enters circulation.

"Yes," replied Jobs, "I'd like to order 4,000 lattes to go please. No just kidding, wrong number, thank you, bye-bye." If the iPhone demo had a moment on par with the Macintosh's self-introduction in 1984, this was it. The audience roared with laughter, which gave way to cheering, whooping, and applause. In video footage of both moments, the camera pans across the house. The stunt could only have worked as an act of live performance, executed in front of an audience: in this moment, being "in" on the success of the new invention meant being in on the joke.

Pranks have a robust media history. Marvin's history of nineteenth century electrical culture, for instance, shows how early electricians regularly boasted about "humiliating tricks" played on those who lacked access to electrical knowledge, particularly members of socially marginal groups, as a means of shoring up their own social status and expertise.[152] Jobs' Starbucks crank call, relatively mild as far as pranks go, exists as part of this long history.[153] Performing the prank onstage surprised and then thrilled the audience, whom Apple implicitly included in the moment by virtue of their presence in the room as the scene unfolded. At the same time, if the climax of the iPhone demo inspired delight at watching a billionaire CEO break the rules of telephone etiquette, it also marked "the first public call with iPhone" made to

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[152] Marvin, *When Old Technologies Were New*, 33. See also Kembrew McLeod, *Pranksters: Making Mischief in the Modern World* (New York and London: NYU Press, 2014).

[153] The call also continues a shorter history of Apple itself, whose roots are in Jobs and Wozniak's early collaboration building and selling illegal "blue boxes" out of their dorms at Berkeley. Devices that tricked the phone system into dialing long distance free of charge, blue boxes are frequently cited in narratives of Apple's origin story, which paint the "Jobs and Woz" as tech-savvy pranksters who flout the rules in order to make life easier for their peers, and enrich themselves in the process. Pranking a Starbucks barista is not the same as duping the telephone company. Still, the stunt seemed to suggest that although Apple had grown into a billion dollar company, Jobs' second venture into telephony would maintain the prankster spirit of his first.

someone outside the theater. In that sense, the Starbucks call represented, as one publication would later recall, "the true test of the iPhone's power," in that it "foreshadowed a revolution in the mobile world, not just for customers, but also for businesses."[154] Indeed, although it ostensibly demoed the iPhone's mapping capabilities, the Starbucks call adhered to preexisting norms of telephony more closely than did the Jobs/Ive/Schiller bit, even as it replaced the originary telephone call's expression of desire for the absent other ("I want you") with desire for grand consumption ("I want 4,000 lattes"). The demo showed the phone's technological capabilities and, at the same time, underscored the iPhone's significance as an elite technology of mediated ease.

Looking to the barista, however, provides an alternate perspective. Although Apple fans reportedly began making pilgrimages to the Starbucks by the Moscone Center after Jobs called it from the MacWorld stage, no media outlets reached out to the barista until 2013, when *Fast Company* identified her as Yin Hang "Hannah" Zhang, a veteran Starbucks employee still employed at the San Francisco store location that Jobs had called six years earlier. Zhang told the reporter that she wished she'd known it was Jobs on other end of the line. "I would've asked him if he'd want to come down to our store," she said, "so I can make him the perfect drink."[155]

Zhang's sentiment reflects, perhaps, the strength of Jobs' star power. Already among the world's most prominent business celebrities at the time of the iPhone launch, by time the

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[154] Austin Carr, "Because Of Steve Jobs's First Public iPhone Call, Starbucks Still Gets Orders For 4,000 Lattes," *Fast Company*, March 4, 2013, https://www.fastcompany.com/3006147/because-steve-jobss-first-public-iphone-call-starbucks-still-.

[155] Ibid.

interview took place, Jobs' recent death had magnified the intensity of his cultural import.[156] So too might her remark indicate the seriousness with which she takes her work. Unlike those in attendance at the product launch, Zhang approached the coffee request, however absurd, as part of her job rather than as part of a joke. In either case, her reaction to the media event six years after the fact shows the enduring draw of liveness. Yes, she would have liked to have been able to ask Jobs about the product he was announcing while she had him on the line, Zhang told the reporter, but more than that she wished he would have come by the store in person.[157] Even a lengthier phone conversation, with the caller properly identified, is an imperfect substitute for the desired presence of the absent other. Whether an expression of devotion to Jobs or to her job, Zhang's take on her famed exchange indicates the limits of mediation. A perfect cup of coffee can only be consumed live.

One More Thing:
Liveness as a Promotional Form

The iPhone was not the only announcement of Jobs' 2007 MacWorld keynote. He began the morning by thanking the audience for coming, and, in a gesture of inclusion, told them, "we're going to make some history together today."[158] He then proceeded to give updates on projects underway at the company, including Apple TV, the device he had previewed with John Legend and Bob Iger just four months earlier. The iPhone, however, stole the show. When Jobs spoke about making history, he was speaking of the iPhone.

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[156] Streeter, "Steve Jobs, Romantic Individualism, and the Desire for Good Capitalism," 3601.

[157] Carr, "Because Of Steve Jobs's First Public iPhone Call, Starbucks Still Gets Orders For 4,000 Lattes."

[158] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007).*

What does it mean to "make" history? The production process of the new device, at the time of its unveiling, had reached completion. If history is the creation of the technology, that history had already happened. On the other hand, if history is made by the social impact of the technology, that history would emerge only following the device's circulation in commercial markets. For Marx, the interval between these two phases in the life of commodity – its production and its circulation – suggests a vulnerability in the capitalist system. "If the split between the sale and the purchase become too pronounced," he observes, "the intimate connection between them, their oneness, asserts itself by producing—a crisis."[159] Apple's product unveilings resignify that interval by making it a period of cultural production, establishing the social meaning of new products and cultivating the consumer desire that will drive their cycles of circulation.

Live performance, as demonstrated in the above events, serves the cultural formation of capitalist commodities by imbuing emerging technologies with a sense of vitality that shapes their social meaning. Beyond that, the product announcement, which occurs at the end of a new technology's production cycle but before it becomes available for purchase, itself functions as a crucial node of production, precisely because of the space it creates for producers to draw attention to emerging products and to shape their cultural meanings before they reach the hands of consumers. This likely explains, at least in part, Apple's policy of keeping its projects tightly guarded secrets during their phases of development. Strategically leaked information primes the public for what to expect (MacWorld audiences in 2007 knew they were likely to see Apple's take on a smartphone) without giving away too many spoilers. Here, the fan culture terminology helpfully indicates the enthusiasm that surrounds Apple products as well as the company's tight

[159] Marx, *Capital*, 164.

control over its product narratives.[160] In 2010, when Apple exploited questionable legal channels to prosecute journalists who published information based on a stolen prototype, its apparent disregard for the freedom of the press was largely understood as an attempt to keep product information from reaching competitors: the lawsuit charged exposure of "trade secrets."[161] However, as some commenters noted at the time, the phone in question, an iPhone 4, was weeks away from its public debut: the device would cease to be a secret long before a competitor could use the information to develop a competing product.[162] Instead, the prototype's leak so close to the launch posed another sort of threat: diminished attention to the product launch. The leaked information threatened to detract from the drama of the live event and its promise of a big reveal.

Equally important, the unauthorized leak meant that Apple lost control as the original authorizer of the product narrative. "Meaning," argues Jonathan Gray, "often begins at the level of promotion."[163] Chiefly concerned with promotional campaigns for film and television shows, Gray advocates that cultural theorists "look at not only the ad but also the add—at what is added to the text by the promotion."[164] As we have seen with Apple launch events, promotional processes shape the meanings not only of representational media, but of media devices, as well.

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[160] For the cultural politics of spoiling, see Henry Jenkins, *Convergence Culture: Where Old and New Media Collide* (New York: New York University Press, 2008), 26–31.

[161] Jason Chen, "This Is Apple's Next iPhone," *Gizmodo*, April 19, 2010, http://gizmodo.com/5520164/this-is-apples-next-iphone; Barbara Kiviat, "The Missing Legal Link in the Gizmodo-iPhone Case," *Time*, April 28, 2010, http://business.time.com/2010/04/28/the-missing-legal-link-in-the-gizmodo-iphone-case/.

[162] Tom Foremski, "Apple Computer's Assault on the Practice of Journalism," *ZDNet*, April 20, 2016, http://www.zdnet.com/article/apple-computers-assault-on-the-practice-of-journalism/.

[163] Jonathan Gray, "Texts That Sell: The Culture in Promotional Culutre," in *Blowing Up the Brand: Critical Perspectives on Promotional Culture*, ed. Melissa Aronczyk and Devon Powers (New York: Peter Lang Publishing, 2010), 309.

[164] Ibid., 308–9.

Tellingly, Gray looks to a series of Apple commercials, the 2008-2009 "Get a Mac" campaign starring Justin Long as a personified Mac computer and John Hodgeman as a generic PC, as exemplifying how promotion shapes the cultural associations of a product by "adding qualities that cannot objectively belong to a computer—how can a laptop be confident or funny, or nerdy and pudgy for that matter?"[165] Read against the original Macintosh product launch, these commercials show Apple's continued investment in articulating the computer's social significance through animacy. Moreover, as with the first Macintosh, the "Get a Mac" campaign shows that live performance is not the only process through which the computer's animacy takes shape—and it is far from the only promotional text that shapes the computer. [166]

In media histories of computing, one promotional text, in particular, has garnered extensive critical attention: the celebrated "1984" commercial that first advertised the Macintosh. Directed by Ridley Scott, fresh off the success of *Bladerunner* (1982), the commercial depicts a dystopian future disrupted by a rebellious javelin thrower. Dressed in a tank top printed with the Apple logo, she outruns a uniformed marching brigade, breaking into a room of skinheads staring slack-jawed at a man's face broadcast on a giant screen. The man in the broadcast recites

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[165] Ibid., 309–10.

[166] Oddly, Gray describes the "Mac vs. PC advertising war" as though "PC" is itself a company, rather than a generic name for a personal computer: "PC struck back with its smart 'I'm a PC' campaign…Unwilling to let Mac's advertisers author their client's texts, PC's advertisers tried to outdo their competitor by suggesting that PCs are special precisely because no one person can represent them," (ibid., 310). That the response campaign was in fact for Microsoft matters less here than does the error to Gray's contention that the promotion of material products is more straightforward than that of film or television shows. In his framework, a Mac "offers no story of itself" and therefore "needs help in becoming a text, help that an ad is only too willing to provide. By contrast, a film or a television show already offers a text," (ibid., 311). Yet his very example shows that media devices have preexisting narratives, which promotional acts either reinforce or work against; both the Macintosh and the Microsoft campaigns sought to define their products not merely against another brand but against prevailing cultural narratives of the personal computer.

indoctrinatory platitudes; the woman smashes a hammer into the screen. "On January 24th," concludes the commercial, "Apple Computer will release Macintosh. And you'll see why 1984 won't be like *1984*." In both critical and industrial discourses, the ad inspires superlatives that ascribe it social power. "'1984' is the singular thing that sounded the trumpets for all [computer] evangelists to come out of the woodwork," Guy Kawasaki, then affiliated with Apple's marketing department, recalled in *Advertising Age* ten years later."[167] Similarly, Ted Friedman, who devotes a full chapter to the ad in his book on computers in American culture, deems it, "the single most influential personal computer advertisement," in part because a Super Bowl audience of 96 million viewers saw the ad.[168] Indeed, the advertising industry practice of premiering spectacular spots during the Super Bowl counts among the commercial's cultural influences.[169] Yet the importance of "1984," for Friedman, exceeds the high number of people who caught it on TV. "The schema of the '1984' ad," he argues, "allowed Apple to harness the visual fascination of a high-tech future, while dissociating itself from its dystopic underside."[170] In other words, the ad disarticulated a technology – here, the computer – from widespread cultural associations. It encoded the computer with an alternate set of meanings.

As with the Macintosh's most innovative technical capabilities, Apple did not invent the countercultural ethos associated with computing; it did, however, work to popularize it. Anne

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[167] Guy Kawasaki quoted in Johnson, "Ten Years After Apple's '1984,'" 1994, np.

[168] Friedman, *Electric Dreams,* 102.

[169] Friedman, *Electric Dreams*, 111. See also John O'Toole, past President of the American Association of Advertising Agencies, quoted in Bradley Johnson, "Ten Years After Apple's '1984': The Commercial and Product That Changed Advertising," *Advertising Age*, January 10, 1994, http://adage.com/article/news/ten-years-apple-s-1984-commercial-product-changed-advertising/88772: "Mr. O'Toole recalls that before '1984,' he tuned into the Super Bowl for football. 'From '84 on, I watched the Super Bowl to see the commercials,' he says."

[170] Friedman, *Electric Dreams*, 112.

Friedberg, for example, notes how the drama of the ad derives from "the historical confluence of anti-Soviet cold war rhetoric and the Orwellian year, 1984," against which Apple sought to define itself.[171] Similarly, Fred Turner argues that the ad told the viewing public that, "the executives of Apple had unleashed a new technology on Americans that would, if they only embraced it, make them free."[172] For Friedberg, the javelin thrower's out-maneuvering of "conformist worker drones marching as if in robotic step to unseen commands" constitutes a declaration of war against "command line" computer interfaces (in Apple's formulation Big Brother is IBM) while for Turner, the ad aligns with the tech industry's formative counterculture undercurrent (and renders it mainstream).[173] For both Friedberg and Turner, that is, the ad matters because of the social meanings with which it framed new technological capabilities for a mass audience.[174]

Accounts of the "1984" ad frequently emphasize two surprising aspects of its creation: first, that the Apple board hated the commercial and nearly pulled it, and, second, that the public found it so striking that, after the Super Bowl aired, news programs rebroadcast the spot as part

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[171] Anne Friedberg, *The Virtual Window: From Alberti to Microsoft* (Cambridge: MIT Press, 2009), 228.

[172] Fred Turner, *From Counterculture to Cyberculture: Stewart Brand, the Whole Earth Network, and the Rise of Digital Utopianism* (Chicago: University of Chicago Press, 2010), 139.

[173] Friedberg, *The Virtual Window*, 228; Turner, *From Counterculture to Cyberculture*, 139.

[174] For an alternate perspective, see Thomas Streeter, *The Net Effect: Romanticism, Capitalism, and the Internet* (New York: New York University Press, 2010), 81: "Scholars in search of the computer zeitgeist of the 1980s have often turned to striking cultural texts like Apple's '1984' TV ad," however, "it is risky to assume that they actually represented the core of the culture." Streeter advocates, instead, critical attention to "the then-novel experience of buying one's first computer." I take Streeter's point, although here my focus is not at all on user experience, but on Apple's efforts to define it. If the "1984" ad did not define user experiences of the new technology, it cued their expectations of it, prompting audiences to engage with a new technology on the industry's terms—perhaps part of the commercial's success is in its casting the industry's terms as the prerogative of prospective users.

of the day's coverage.[175] Less well known is the fact that its Super Bowl broadcast was itself something of a coincidence. Originally, "1984" was set to air during college football games on New Year's Day—Apple moved the spot to the Super Bowl in order to more closely coincide with its annual shareholder's meeting, which happened to be scheduled two days later.[176] If "1984" exemplifies advertising as a form of cultural production, it also shows that corporate promotional practice extends beyond consumer culture. The investors, designers, and members of the press that Apple had invited to Cupertino mattered not as consumers (or not only as consumers) but as select populations whom Apple wanted to fund, build, and publicize its vision of computing. The commercial not only "brought consumers into the stores," as Friedman puts it,[177] it also brought shareholders to the Flint Center of the Performing Arts in Cupertino in such high numbers that the theater could not contain them.

Unlike the mass public that caught the "1984" ad during the Super Bowl, the shareholders meeting was populated by an audience already explicitly invested in the success of the personal computer. The event thus hailed them as industry insiders and staged an in-depth spectacle through which Apple presented a more economically powerful audience with a more fully realized execution of its vision. As time went on, Apple would continue to use the particular affordances of live performance to imbue its technologies with liveness, while also mining a space of capitalist vulnerability for its productive potential. In the three decades since Apple launched the Macintosh, as we have seen, the events once staged for insiders only have acquired a following that encompasses broad publics, even as hierarchies of access persist.

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[175] Friedman, *Electric Dreams: Computers in American Culture*, 110; Isaacson, *Steve Jobs*, 164–65; Young and Simon, *iCon Steve Jobs*, 95–97.

[176] Johnston, "Ten Years After Apple's '1984.'"

[177] Friedman, *Electric Dreams*, 111.

Today's product launches probably don't rival the 96 million Super Bowl viewers who caught "1984" in 1984, however the promotional practices surrounding Apple events direct cultural attention to the singular day on which the company unveils its newest products. These practices enable the live event to become a media event that emphasizes, rather than occludes, the role of liveness in pushing a product from production to circulation.

At the same time that Apple's product launches have expanded to encompass increasingly broad strata of spectators – and as the computer sector itself has undergone a period of tremendous growth – spectacular events staged exclusively for the members of the tech industry have gained increasing industrial prominence. Unlike Apple's launches, many of these events take place outside of the purview of the consumer culture, although the spectacles staged there shape the emergence of technologies that will eventually go on to circulate more broadly. The next chapter will investigate some of these events.

Chapter 2:
Conferences and Contests

On a remote stretch of the San Francisco waterfront, cordoned-off inside an old warehouse, a long auditorium is jam-packed with conference-goers. A video demo of a website plays on a pair of large screens—and then the screens cut back to a live feed of the stage, which is hard to see from the standing-room only space at the back of the room. But then, I'm not a tall person. When I hop onto a raised platform with the guys running the soundboard, I get a better view of Snoop Dogg.

"There's so many people in the closet right now that do what we do," says Snoop from an onstage armchair. Beside him, his business partner gazes at the audience. The *TechCrunch* reporter conducting the interview laughs. "And they, you know, they really want to come out," continues Snoop, "so now we're going to give them an opportunity to come out in some form or fashion…I just feel like we're a better world if everybody comes out of the closet and just admits that they like to smoke."[1]

To launch Mary Jane, a digital media platform for marijuana enthusiasts, Snoop Dogg went to TechCrunch Disrupt, where financial opportunities represented by new technologies take center stage. The signature conference of AOL's *TechCrunch* blog, Disrupt takes its name from Clayton Christenson's term for emerging technologies that upend established markets.[2] The

[1] Snoop Dogg, "A New Perspective on Culture and Industry with Snoop Dogg and Ted Chung" (Disrupt SF, San Francisco, September 21, 2015).

[2] Clayton M. Christensen, *The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail* (Cambridge: Harvard Business Review Press, 1997). For an excellent critique of

Disrupt conference series features little-known startup founders, who address the convention in a bid for venture capital and press attention, as well as high-profile entrepreneurs and executives, who speak about the state of the industry in a series of "thought leadership" sessions hosted by the *TechCrunch* editorial team. Within tech circles, Disrupt is a hotly anticipated event, a "breathless gathering in Silicon Valley's Liturgical Calendar," as one tech reporter put it.[3] When Facebook broke industry records with a billion dollar IPO in 2012, Mark Zuckerberg gave his first public interview from the Disrupt stage; Dropbox got an early boost by competing in a startup contest at a 2008 iteration of the conference. Both the startup competition and the thought leadership sessions function as opportunities for those onstage to persuade the convention that their own ventures and visions portend the future of the field. Consequently, all of the presenters, even the billionaires, use the Disrupt stage as a promotional platform; Snoop and his cofounder Ted Chung demoed Mary Jane as part of a thought leadership session titled "A New Perspective on Culture and Industry."

From private pitch sessions held in venture capitalist offices to presentations delivered in front of whole conventions, the industrial processes that shepherd technologies from prototypes into production hinge on acts of performance. The genre of the tech demo, as the previous chapter argued, shows how a product works and also how to understand its social significance. While that chapter looked at technologies on the brink of public release, the dual functions of the tech demo also align with the tasks faced by entrepreneurs whose products are in earlier phases of development. In order to peak industry interest and garner the funding necessary to build their

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Christensen, see Jill Lepore, "What the Gospel of Innovation Gets Wrong," *The New Yorker*, June 23, 2014, http://www.newyorker.com/magazine/2014/06/23/the-disruption-machine.

[3] Sam Biddle, "What Happens to Little Startups After Everyone Forgets?," *Valleywag*, September 4, 2013, http://valleywag.gawker.com/what-happens-to-little-startups-after-everyone-forgets-1246588321.

products, founders of new startups stage demos designed to convince tech industry leadership of the exciting possibilities that their work portends.

This chapter focuses on TechCrunch Disrupt as a site of industrial formation where these performances take place. I begin by introducing two lineages that shape the Disrupt conference series: the computer conferences that gave rise to Silicon Valley in the second part of the twentieth century and the live events that have become central to journalism business models at the beginning of the twenty-first. With attention to these traditions, I show these live events forge social cohesion that both reconstitutes and reshapes cultural norms. I then turn to the main event of Disrupt, the pitch-off competition, examining how competing onstage in front of an industry audience provides professional opportunities for contestants. This section argues that the contest, situated within a broader practice of pitch-offs at tech conferences, stages late capitalist ideologies of competition and success. Next, I address the presentational paradigms of tech presentation, analyzing the theatrical elements of the tech demo by looking at the displays staged in the Disrupt expo hall as well as at the pitches delivered from the conference stage. Finally, the chapter accounts for some of the absences of the tech conference: the categories of companies, and populations of people, underrepresented in the work worlds that comprise Disrupt. Here, I show how both "tech" and "startup," as industrial articulations, are defined through the inclusions and exclusions made manifest by the conference.

Throughout the chapter, I base my analysis on presentations I saw when I attended Disrupt SF 2015, in combination with *TechCrunch*'s archival documentation of other iterations of the conference; I also draw on pitch-offs held at conferences where I have conducted additional research. To account for how members of the industry view these practices, I turn to advice that startup founders and venture capitalists offer their peers, through blog posts and

interviews, regarding how best to approach pitches and exhibitions. Additionally, I draw on industry surveys and reports in order to account for the populations and funding distribution patterns that comprise the startup economy and tech work cultures. So too do I look at media coverage of pitch-offs, startup culture, and the tech industry, as both a source of documentation and as an indication of the cultural reception enjoyed by these events.

While Disrupt is always a jam-packed affair, Snoop's presentation drew an especially large crowd to the auditorium, no doubt a result of the star power enjoyed by the rapper-turned-entrepreneur. Perhaps, too, the standing-room only audience resulted from industrial excitement over financial opportunities to be found by creating new technologies for the burgeoning cannabis industry. Mary Jane, dubbed "Marijuana 2.0," was one of several marijuana-themed tech ventures to take the stage at Disrupt in the fall of 2015. At the end of the convention, the startup contest awarded second place to a company called Green Bits, which debuted software for dispensary inventory management; another startup, named Leaf, showcased hardware for growing marijuana plants at home.[4] Snoop and Chung, in turn, presented a "lifestyle platform" that would include editorial content (product reviews; celebrity interviews); video production (cooking shows; docudramas); and tools for linking consumers and producers (dispensary directories; menus).[5] "Mary Jane," Snoop told the audience, "will be the door to bring people out of the closet."[6]

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[4] Ben Curran, "Green Bits" (Disrupt SF, San Francisco, September 22, 2015); Yoni Ofir, "Leaf" (Disrupt SF, San Francisco, September 22, 2015).

[5] For a study of the flexibility of "platform" rhetoric, see Tarleton Gillespie, "The Politics of 'Platforms,'" *New Media & Society* 12, no. 3 (May 1, 2010): 347–64, doi:10.1177/1461444809342738.

[6] Dogg, "A New Perspective on Culture and Industry with Snoop Dogg and Ted Chung."

Mary Jane follows a long tradition of subcultural media technologies premised on providing users with increased access to otherwise taboo information. Beyond the rhetoric of the closet, Snoop's remarks echo Cait McKinney's queer media historiography of "information interfaces" situated as the missing link "between users and a nascent LGBTQ public that is 'out there,' needing only the right information pathways to materialize."[7] Moreover, as with a newly visible queer community two decades earlier, the prospect of self-identifying stoners acquiring social acceptability now signals a new segment of targetable consumers.[8]

The cannabis-oriented technologies presented at Disrupt in the fall of 2015 debuted on the heels of marijuana legalization in a handful of U.S. States—but lots of media and technology introductions are imagined as heralding a mass "coming out" moment. Recall, for instance, Guy Kawasaki's remark about the computer enthusiasts who "came out of the woodwork" after seeing the *1984* broadcast that announced the Macintosh, or Streeter's contention that Engelbart's 1968 demo gave those in attendance a way to "justify their own desire to interact with the computer" and "a community of others who shared their convictions."[9] Just as the 1968 demo and the 1984 commercial, in these accounts, galvanized computer users at moments of historical transition, Snoop presented Mary Jane as a communications platform that would empower a marginalized community and precipitate its expansion. What Kawasaki and Streeter

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[7] Cait McKinney, "'Finding the Lines to My People'': Towards a Media History of Queer Bibliography," *GLQ* 24, no. TBD (Forthcoming): 21.

[8] Rosemary Hennessy, "Queer Visibility in Commodity Culture," *Cultural Critique*, no. 29 (1994): 31–76, doi:10.2307/1354421; Danae Clark, "Commodity Lesbianism," *Camera Obscura* 9, no. 1-2-26 (January 1, 1991): 181–201, doi:10.1215/02705346-9-1-2_25-26-181.

[9] Guy Kawasaki quoted in Bradley Johnston, "Ten Years After Apple's '1984': The Commercial and Product That Changed Advertising," *AdAge*, January 10, 1994, http://adage.com/article/news/ten-years-apple-s-1984-commercial-product-changed-advertising/88772/; Thomas Streeter, *The Net Effect: Romanticism, Capitalism, and the Internet* (New York: New York University Press, 2011), 42.

observe in hindsight, Snoop announced in anticipation: his product would embolden a core user group and capitalize on an untapped market.

These parallels only go so far: watching a cannabis cooking show is altogether different than reading about being gay or learning about computers, and engaging with an interface is not the same as attending a research presentation or catching a Super Bowl commercial on TV. But that is precisely the point: emerging media and technology rarely spark a singular "coming out" moment.[10] Rather, as in the queer life that inspires the rhetoric, coming out in relation to media technology is a process that happens repeatedly over time, in different ways, among different audiences.[11] In other words, technologies emerge through multiple sites of revelation, forging various kinds of communities among different groups of users along the way. The Disrupt conference series functions as one such site of potential revelation, early in the development of new technologies.

A three-dimensional thing to walk around in:
Conferences and the value of the live event

TechCrunch bills Disrupt as "where startups start." The conference began in San Francisco in 2007, when venture capitalist Jason Calacanis and *TechCrunch* editor Michael

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[10] This is essentially Streeter's critique of attributing what is, in his view, an outsized degree of significance to "striking cultural texts like Apple's 1984 ad" while failing to attend to "something more widespread" such as "the then-novel experience of buying one's first computer," or "thumbing through computer magazines, deciphering the mysteries of new objects like floppy disks and new concepts like software, and participating in water-cooler conversations about the details of these new machines." See Streeter, *The Net Effect*, 81.

[11] See Eve Kosofsky Sedgwick, *Epistemology of the Closet* (Berkeley: University of California Press, 1990), 3: "'Closeted-ness' is itself a performance initiated as such by the speech act of a silence – not a particular silence, but a silence that accrues particularity by fits and starts...The speech acts that coming out, in turn, can comprise are as strangely specific. And they may have nothing to do with the acquisition of new information."

Arrington invited the founders of startups they admired to participate in a competition dubbed The TechCrunch40, named after the blog that Arrington had started two years earlier. Conceived as part showcase of new Silicon Valley ventures and part networking event, the conference has grown larger every year. In 2008, the competition expanded into The TechCrunch50, and two years after that, *TechCrunch,* then on the verge of acquisition by AOL, rebranded the whole event as Disrupt, making the previously titular contest – renamed the Startup Battlefield – one component of the larger convention. The conference now takes place three times a year, for three days at a time, across three different cities: spring in New York; fall in San Francisco; winter in London or someplace in Europe. Each city attracts both a local and global attendance, as founders of early-stage startups from around the world travel to Disrupt in the hopes of securing funding and press attention. Venture capitalists, in turn, attend the conference in order to evaluate prospective investments; journalists to learn, as *Buzzfeed* put it, "where the next generation of technology is headed."[12] In other words, each of these groups has a distinct set of interests advanced by their convergence at the conference. When I attended the San Francisco show in 2015, *TechCrunch* rented Pier 48, the aforementioned waterfront warehouse, because the facility boasted 120,000 square feet of space, larger than four football fields. With 5,000 conference registrations, Disrupt had outgrown more traditional conference venues in a city with increasingly limited real estate.[13]

Outside of tech circles, Disrupt is perhaps best known for a pivotal scene in the HBO series *Silicon Valley*, about a scrappy startup that makes it big after winning the Startup

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[12] Charlie Warzel, "Searching For Signs Of Life At TechCrunch Disrupt," *BuzzFeed*, May 8, 2015, http://www.buzzfeed.com/charliewarzel/in-search-of-humanity-at-techcrunch-disrupt.

[13] Its previous home, The Concourse Exhibition Center, had recently shuttered and would soon be replaced by a luxury apartment complex.

Battlefield. Drawing on the spectacle of live presentation, the series uses the pitch-off as a dramatic device through which to reveal the underdog hero's genius technological breakthrough.[14] In the real world, about 1000 companies apply for a Battlefield slot in advance of each conference. Applicants who strike out, failing to win twelve minutes in front of the convention on the Disrupt stage, may instead opt to exhibit in "Startup Alley," or "Hardware Alley," the exhibition area that, in the fall of 2015, filled approximately two-thirds of the warehouse.[15] At these booths, some 343 startups from more than 100 countries staged exhibits for one day each, hoping that in eight hours on the show floor they would garner key contacts that would help advance their ventures. When not in the expo hall, founders sit in the audience in the convention auditorium, watching the competition in the Battlefield and listening to leaders of the field address the state of the industry.

As a tech conference, Disrupt's lineage includes the conference circuits that shaped the development of the computer industry, a chief foundation of what is now known as the tech industry. As discussed in the introduction to the dissertation, the tech industry encompasses both hardware and software enterprises in wide-ranging product categories, across an expanding array of industry verticals. From hobbyist meetings like the Homebrew Computer Club, where the first generation of Silicon Valley leaders met to work through ideas for building computers in the late 1970s, to larger events like the West Coast Computer Faire, founded in 1976, an annual convention where early computer companies exhibited their wares for a newly-forming network of hardware and software developers and enthusiasts, Silicon Valley took root, in part, through

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[14] Mike Judge, "Proof of Concept," *Silicon Valley* (HBO, May 18, 2014).

[15] "Startup Alley" exhibitors are divided between the first two days of the conference; one exhibitor each day wins a wildcard slot to present onstage as part of the Startup Battlefield. "Hardware Alley" takes place the final day.

sites of collective encounter.[16] By bringing together "engineers, executives, gadgets, and reporters," argues Streeter, "computer conventions and other industry events were an important locus for cultivating shared interpretive frameworks for the industry."[17] Similarly, Turner looks to the 1984 Hackers' Conference, which brought together people working in computers at academic institutions, industrial corporations, newly formed companies, and inside their own homes, as "a master stroke of networking" that enabled participants to "imagine their individual projects as elements of a shared cultural mission."[18] Where these early conferences established social understandings of computers and gave participants a shared sense of purpose,[19] events like the *TechCrunch* conference series, as I will show here, cultivate a shared sense of "the tech industry" among a broad collection of participants.

Conferences are not, of course, unique to tech culture; academic organizations, professional societies, political activists, religious groups, and hobbyist communities all have conferences. Arguably all such conventions, to varying degrees, instill among participants a "shared interpretive framework" and "sense of mission," from the Conservative Political Action Committee's annual conference in Washington, DC, where Republican leaders advance a national agenda by inspiring thousands of attendees from across the country, to the annual

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[16] Gabriella Coleman, "The Hacker Conference: A Ritual Condensation and Celebration of a Lifeworld," *Anthropological Quarterly* 83, no. 1 (March 4, 2010): 51–52, doi:10.1353/anq.0.0112.

[17] Streeter, *The Net Effect*, 66.

[18] Turner, *From Counterculture to Cyberculture,* 135; 254.

[19] These late twentieth century events themselves have a longer history, rooted in post-war research colloquia such as the Macy Conferences, held in New York from 1943 to 1954, where cybernetic theory emerged through negotiation and collaboration between distinguished researchers from distinct disciplines. See N. Katherine Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University Of Chicago Press, 1999), 50–83.

conference of the Missouri State Thespian Society, where Missourians who had moved to Hollywood gave my high school drama troupe tips on making it in the movie industry. Conferences, proposes Gabriella Coleman, "might be theoretically approached as the ritual underside of modern publics," in that "physical co-presence might in fact be central to the sustenance and expansion of discursive forms of mediation."[20] Like the communal ritual affairs whose performance customs concern Victor Turner and Richard Schechner, these events bind social ties, resolve conflict, and ratify personal and collective transformation, with repercussions that extend beyond the enactment of the ritual and into the everyday.[21]

If tech conferences are remarkable within this larger context, perhaps that is because of what Coleman observes at more recent hacker conferences. Apprehending these events as "ritual-like affairs" where participants "imbue their actions with new, revitalized, or ethically charged meanings," she identifies "not only a social drama that produces feelings of unity," but also an indication of how people accustomed to mediated inter-group dialogue place high value on being together, in the same room, at the same time. "By emphasizing so strongly the human interactivity of the conferences," argues Coleman, "they are implicitly agreeing with the idea that virtuality, however meaningful, cannot ever fully replace or mimic face-to-face sociality."[22]

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[20] Coleman, "The Hacker Conference," 66.

[21] Victor Turner, *From Ritual to Theatre: The Human Seriousness of Play* (New York: PAJ Publications, 1982); Richard Schechner, *Performance Theory* (New York: Routledge, 1988), 170–71. In terms of performance, a ritual event constitutes what Schechner calls a "social drama" where "all present are participants, though some are more decisively involved than others," rather than an "aesthetic drama," where "everyone in the theater is a participant in the *performance* while only those playing roles in the drama are participants in the *drama* nested within the performance," (original emphases). An event like Disrupt, which has an onstage drama that an audience watches unfold in the context of the larger conference, complicates these distinctions in interesting ways.

[22] Coleman, "The Hacker Conference," 53–54.

Conferences focused on media and technology put into relief the enduring power of liveness, and perhaps even require the live event to cultivate and sustain technologies' social functions among community members across distance.

At the same time, as a splashy event organized by a blog, Disrupt engages in a related but somewhat newer tradition of conferences, festivals, and other live events organized by media outlets. The practice has become commonplace among major newspapers and magazines over the course of the last decade: *The New York Times*, *The Washington Post*, *The Los Angeles Times*, *The Wall Street Journal*, *The Economist*, *The New Yorker* and *New York Magazine* all host live events featuring conversations between journalists and high-profile public figures.[23] These events have proliferated over a period of time in which the global financial recession, coupled with the rise of digital media, have weakened the traditional business models of journalistic enterprises, further indicating the particular abilities of liveness to offset (rather than inspire) capitalist crisis.[24]

Live events support editorial ventures in two key ways: they function as sources of major revenue (a standard Disrupt ticket costs $2,995; exhibitors pay $1,995 for a table and two tickets; corporate sponsorships bring in still more) and also as sources of exclusive content (*TechCrunch* remediates Disrupt by livestreaming the conference on its website and archiving the footage, in

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[23] Christine Larson, "Live Publishing: The Onstage Redeployment of Journalistic Authority," *Media, Culture & Society* 37, no. 3 (April 1, 2015): 5–6, doi:10.1177/0163443714567016.

[24] Christopher Waddell, "Berry'd Alive: The Media, Technology, and the Death of Political Coverage," in *How Canadians Communicate IV: Media and Politics*, ed. David Taras and Christopher Waddell (Edmonton: Athabasca University Press, 2012), 45–53; Todd Gitlin, "A Surfeit of Crises: Circulation, Revenue, Attention, Authority and Deference," in *Will the Last Reporter Please Turn out the Lights: The Collapse of Journalism and What Can Be Done To Fix It*, ed. Robert W. McChesney and Victor Pickard (New York: The New Press, 2011), 91–102. See "the liveness debate" discussed in the previous chapter: Peggy Phelan, *Unmarked: The Politics of Performance* (New York: Routledge, 1993); Philip Auslander, *Liveness: Performance in a Mediatized Culture* (New York: Routledge, 1999).

addition to blogging about the event as it happens), a practice Christine Larson calls "live publishing." In her analysis, "live publishing transforms journalists' previously immaterial networks of relationships into a physical, embodied, material product."[25] Or, as Jesse David Fox, an editor of *New York Magazine*'s culture blog, recently described its annual festival on his podcast, "it's like this magic weekend where *Vulture*, the site that I work for, turns into this three-dimensional thing you can walk around in," and then listed comedians, television stars, and other public personalities whom listeners would be able to see live by buying tickets to the event.[26] *TechCrunch*, by appealing to professionals seeking business prospects (as opposed to fans drawn to encounters with celebrities) is perhaps uniquely vulnerable to charges that media companies' live events "broker direct access to sources."[27] Entrepreneurs who livestream the conference to gain insight into the industry miss the encounters that buying tickets to the conference affords. Even as *TechCrunch* makes much of the conference proceedings free, via its website, it sells tickets to attendees from around the world through the promise of unmediated access.

In short, as a live event attended by members of the tech industry, organized by a media company, Disrupt illustrates how technological production and mediated communication each derive value from live encounters, organized as exclusive conferences. As a locus of industry networking, Disrupt advances the development of individual companies while contributing to a shared sensibility of "tech" among a varied network of participants. As a site of live publishing, Disrupt provides *TechCrunch* exclusive access to a major industry event, by virtue of the blog's

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[25] Larson, "Live Publishing," 11.

[26] Jesse David Fox, *Dear White People's Shonda Rhimes Parody*, Good One: A Podcast About Jokes, April 24, 2017.

[27] Larson, "Live Publishing," 15.

own organizational role, and, moreover, allows the blog to foster the formation of the very industry it covers. One of the chief commercial successes of Disrupt stems from its alignment of two fields – news media and the tech industry – by capitalizing on their shared investments in the live event.

However, although the media site and the tech companies draw value from being in the same room at the same time, the values they assign to it are different, and making them operate in harmony requires organizational effort. Smoothing their asymmetrical interests obviates but does not erase tension between the two fields. Arrington raised eyebrows in 2011, shortly after *TechCrunch* became an AOL media property, by intimating that the site gives positive press to companies that launch at Disrupt forever after, provided they continue to give the blog exclusive stories.[28] His remarks give credence to Larson's concern that live events sponsored by news organizations "compromise the journalist-source relationship" by "making journalists too dependent on their sources' willingness to speak at conferences," which creates "an unspoken obligation on the part of the journalist."[29] Arrington, less concerned with journalistic integrity than with brand equity, not only readily acknowledged that sense of obligation, but drew attention to the other side of its terms. Positioning the blog as a more powerful entity, relative to the little-known startups its conference launches, his remarks index a promotional circuit in which *TechCrunch* provides startups with exposure to prospective partners and press, in

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[28] Nicholas Carlson, "Michael Arrington Browbeats Entrepreneurs At Ron Conway's CEO Summit," *Business Insider*, May 31, 2011, http://www.businessinsider.com/michael-arrington-browbeats-entreprenuers-at-ron-conways-ceo-summit-2011-5.

[29] Larson, "Live Publishing," 15. Not coincidentally, her citation expresses concern that a publication sponsoring a tech conference will be reluctant to criticize its speakers' products. See Alan Deutschman, "The Kingmaker," *WIRED*, May 1, 2004, https://www.wired.com/2004/05/mossberg/.

exchange for building its own brand as a source of buzz-worthy companies with good investment prospects.

Later that year, *TechCrunch*'s efforts to elide the competing interests of venture capitalists, startups, and the journalists who cover them created a larger scandal. It began when AOL, in a striking exception to its ethics policy, announced its support of CrunchFund, a new venture helmed by Arrington that would invest in startups like the sort showcased at Disrupt, with partner investors whom the site regularly covers. In a statement that horrified business journalists[30] and offended *TechCrunch* reporters,[31] AOL CEO Tim Armstrong explained that, while the media conglomerate would continue to bar journalists at subsidiaries like *The Huffington Post* from investing in companies they cover, "*TechCrunch* is a different property and they have different standards."[32] A study of how AOL, a nineties internet provider, turned to vertical integration and unorthodox journalism models in an effort to remake itself as a twenty-first century media company falls outside the scope of this dissertation. However, Arrington's defense of the arrangement echoes a key underlying theme: "I don't claim to be a journalist," he told the *New York Times*, which noted that he nonetheless "breaks news and writes

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[30] David Carr, "Michael Arrington's Audacious Venture," *The New York Times*, September 4, 2011, http://www.nytimes.com/2011/09/05/business/media/michael-arringtons-audacious-venture.html; L. Gordon Crovitz, "A Business Model Based on Conflict of Interest," *Wall Street Journal*, September 12, 2011, sec. Opinion, https://www.wsj.com/articles/SB10001424053111904836104576560961468934134.

[31] Paul Carr, "The CrunchFund: Actually, Tim, We Don't All Have 'Different' Standards," *TechCrunch*, September 2, 2011, http://social.techcrunch.com/2011/09/02/crunchfund/. (Paul Carr and David Carr are of no relation, other than having both weighed in on the scandal known as Arringtongate.)

[32] Tim Armstrong quoted in Claire Cain Miller, "Michael Arrington, TechCrunch Blogger, to Invest in Start-Ups," *The New York Times*, September 1, 2011, http://www.nytimes.com/2011/09/02/technology/michael-arrington-techcrunch-blogger-to-invest-in-start-ups.html.

prolifically."[33] In Arrington's view, the disclaimer was more boast than confession. "I hold myself to higher standards," he said, "of transparency and disclosure."[34] His insistence that printing disclosures about his financial investments mitigates potential self-dealing matters less here than does his contention that, as a tech industry leader, the ability to remake and improve upon the practices of another field fits easily within his purview. The entire notion of the Disrupt conference, as I will show here, is premised on articulating a range of industrial sectors to tech industry norms. Strictly speaking, the notion of "disruption" refers, in the Christenson sense of the term, to businesses overturned by technological innovation.[35] Sites of industrial formation, such as the Disrupt conference, show that the cultures of "the tech industry" likewise extend into sectors subsumed by technological change. And, as in the scandal that became known as "Arringtongate," live events such as conferences are central sites where the process of remaking norms takes place.

TechCrunch held Disrupt SF 2011 less than two weeks after the CrunchFund announcement, amidst backlash that included a front-page story in *The Wall Street Journal*, conflicting statements regarding Arrington's future with the company, and speculation as to whether he would stay away from the conference.[36] "In fact," reported *Adweek*, "he was the first

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[33] Michael Arrington quoted in ibid.; ibid.

[34] Arrington quoted in Miller, "Michael Arrington, TechCrunch Blogger, to Invest in Start-Ups."

[35] Christensen, *The Innovator's Dilemma*.

[36] Jessica E. Vascellaro and Emily Steel, "Culture Clashes Tear at AOL," *Wall Street Journal*, September 10, 2011, sec. Tech, https://www.wsj.com/articles/SB10001424053111904836104576558993970961586; Henry Blodget, "ARIANNA HUFFINGTON: Mike Arrington Is Out At TechCrunch," *Business Insider*, September 2, 2011, http://www.businessinsider.com/mike-arrington-no-longer-works-for-techcrunch-2011-9; Anthony Ha, "Michael Arrington Leaves TechCrunch," *Adweek*,

person to take the stage."[37] In promises as performative as they were informative, Arrington told the audience that, in order to run CrunchFund, he would leave his editorial position at *TechCrunch*, and incoming editor Erick Schoenfeld assured the audience that Arrington would nonetheless always be central to the company—which he would do largely by remaining a fixture of its conference series.[38] Although in the years to come, Arrington occasionally contributed to the site as an unpaid guest blogger, his primary association with *TechCrunch* persisted through Disrupt, where he hosted panels, judged competitions, and conducted fireside chats that headlined the conference for several years. When Zuckerberg appeared at Disrupt following Facebook's IPO, Arrington conducted the interview. In the slide that served as backdrop of the session (and so appears in photos of the event), Zuckerberg's affiliation is "*Facebook*" and Arrington's is "*TechCrunch*." Arrington is billed first.

The arrangement makes clear that while *TechCrunch* would continue to operate according to what Armstrong had called a "traditional understanding" of journalistic ethics, the blog's signature conference would develop an uncharted ethical code.[39] It is no coincidence that this work takes place at conferences, partly because, compared to news publications, industry conferences are less closely regulated by media watchdogs. Moreover, the "cultural performance" staged through ritual events, argues Turner, can inspire "a sociocultural group, or its most perceptive members acting representatively," to reconsider "roles, statuses, social

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September 12, 2011, http://www.adweek.com/digital/michael-arrington-leaves-techcrunch-134791/.

[37] Ha, "Michael Arrington Leaves TechCrunch."

[38] Ryan Singel, "Michael Arrington Officially Pushed Aside at TechCrunch," *WIRED*, September 12, 2011, https://www.wired.com/2011/09/arrington-techcrunch/.

[39] Tim Armstrong quoted in Miller, "Michael Arrington, TechCrunch Blogger, to Invest in Start-Ups."

structures," as well as "*ethical* and legal rules."[40] Rather than assuming that these sites are "simple reflectors or expressions of culture or even of changing culture," Turner cautions that performances of ritual, "may themselves be active agents of change, representing the eye by which culture sees itself and the drawing board on which creative actors sketch out what they believe to be more apt or interesting 'designs for living.'"[41] Following Turner, we might say that the Disrupt conference constitutes a site of ritualized self-assessment and cultural transformation.

There are at least two ways of identifying the culture represented by the Turnerian "creative actors" of the event. On the one hand, the sociocultural group given an opportunity to "see itself" in assembly is "the tech industry," a nexus of sectors and actors involved in the production and financialization of emerging technologies. The industry leaders and selected startup founders who take the stage at Disrupt sketch out their visions of the industry's future, for the approval of those in attendance. On the other hand, the improved designs for living proposed at Disrupt apply not only to the industry itself, but to far broader cultural populations. The creative actors who win spots on the Disrupt stage apprehend it as a platform for advancing technologies that will – as per the tech industry cliché – make the world a better place. That slippage between the industry and the global population, or the industry's positioning of itself as what Turner might call the global population's "most perceptive members acting representatively," raises questions about what the cultural performances staged at Disrupt look like as well as the people and ideas they represent, discussed in the next sections.

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[40] Victor Turner, *The Anthropology of Performance* (New York: PAJ Publications, 1986), 24. Emphases added.

[41] Ibid.

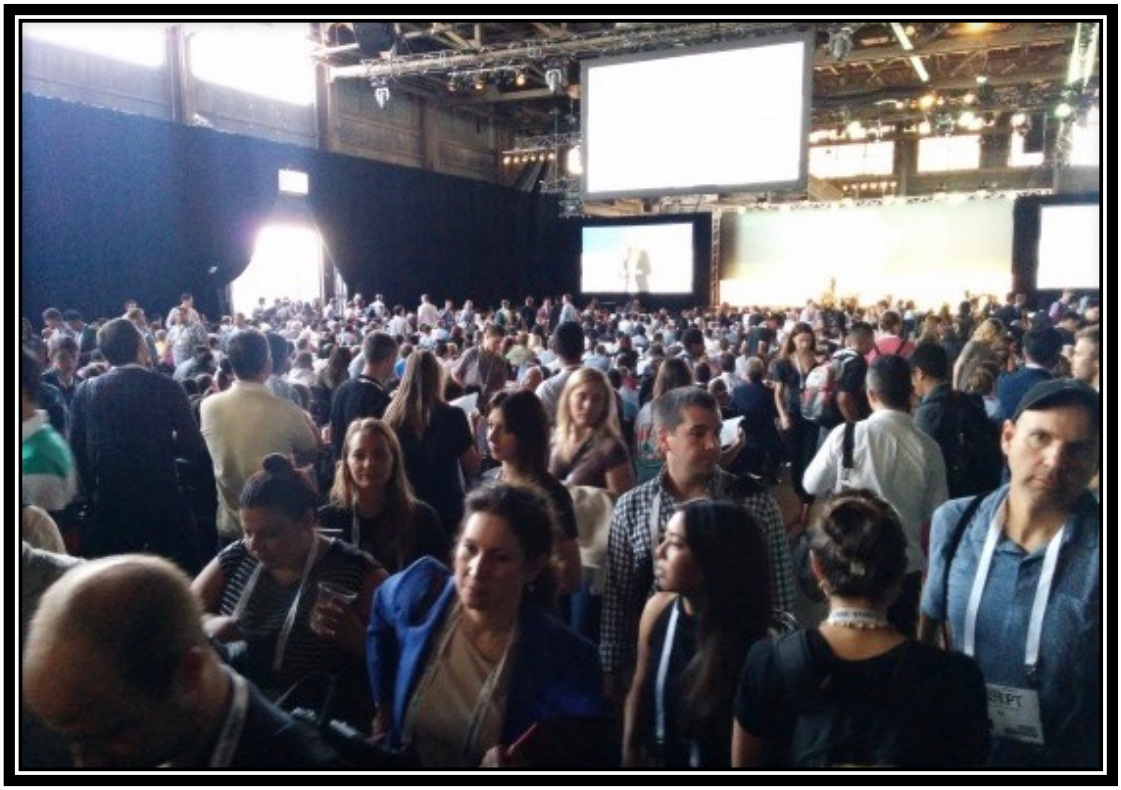

Figure 5: TechCrunch Disrupt SF auditorium, 2015. (Photo by the author.)

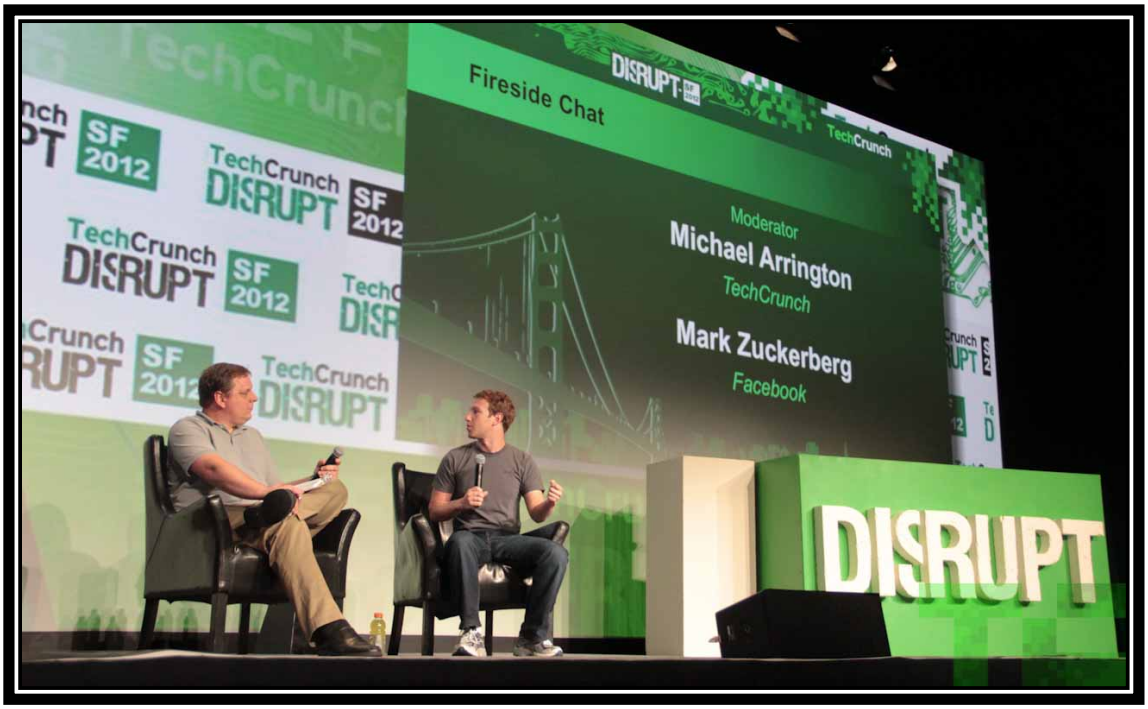

Figure 6: Michael Arrington interviews Mark Zuckerberg, TechCrunch Disrupt SF, 2012. (*TechCrunch* photo.)

And the winner is:
Contests and capitalism

The founders of six startups assembled onstage at the end of Disrupt SF 2013. They shook hands as they made their entrances, and then smiled at the audience, nervously. As finalists in the Startup Battlefield, each of them had presented their products in front of the convention earlier in the day. Now, lined up onstage together, they formed a picture of the tech world's sartorial strategies: some cofounders dressed in matching company t-shirts, others wore blazers and jeans; a few, opting for a combination, had on company tees with blazers. One young man wore a hoodie. The sole woman onstage, *TechCrunch* editor Alexia Tsotsis, stood at the podium, announcing the award. "I'm going to ask the runner-up and the winner to step forward," she said, "in no particular order, because we need another level to this." First she called downstage the founders of Dryft, which makes keyboard software that adapts to users' hands, and then the founders of Layer, which adds messaging capabilities to mobile apps. Poised behind a giant trophy, the two teams exchanged sportsman-like handshakes. "And the winner of the 2013 San Francisco Disrupt Cup is—"

Pausing dramatically, she pulled away from the microphone. Then she smiled and said, "Layer." Loud music pumped up over the sound system and green lights flashed across the staged. One of the winners made a "raise the roof" gesture with his hands, then turned toward his co-founder. They shook hands, hugged, and slapped each other on the back. A second woman appeared onstage, and handed them a giant cardboard novelty check, made out to Layer from *TechCrunch* for $50,000.

Nearly every major tech convention, where members of various subsets of the tech industry assemble to discuss the state of the industry and imagine its future possibilities, hosts pitch-off competitions. The first conference series to focus directly on pitches, the aptly titled

Demo conference began in 1990, the brainchild of technology analyst Stewart Alsop. As the *New York Times* tells the story, Alsop's favorite part of computer conventions were "sneak peeks at the near future of computing" that he gleaned in hallway demonstrations outside the "marketing mania" of the exhibition halls, and so he decided to build a conference centered on those moments.[42] A quarter century later, the practices have melded. Demo and Disrupt, ostensibly focused on presentations by startups, both have large expo halls. At the same time, CES, the behemoth tech expo discussed in the next two chapters, hosts multiple pitch-off contests—among them a specialized *TechCrunch* contest dubbed the Hardware Battlefield. (At Disrupt, the Startup Battlefield may include hardware companies but the contest is not limited to them.) Beyond the interconnected nature of the tech world, that *TechCrunch* hosts a contest at CES indicates the prevalence of pitch-offs across an array of tech industry conferences. These range from technology and pop culture festivals like SXSW, where sector-specific pitch-off competitions are a programming staple, to corporate conventions like the Adobe Summit, where select employees pitch original product ideas in front of thousands of Adobe product users and clients, to smaller "meetup" events that *TechCrunch* organizes multiple times a year in cities around the world; winners of the pitch-offs held at these events win tickets to attend Disrupt. At Disrupt itself, the Startup Battlefield is the centerpiece of the conference, however it is not the only conference's only startup competition: during the conference, Startup Alley exhibitors compete each day for votes from those wandering the stalls. The lucky winners secure last minute "wildcard" slots in the Battlefield.

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[42] David Pogue, "Onstage, Digital Hits And Misses," *The New York Times*, February 15, 2001, sec. Technology, http://www.nytimes.com/2001/02/15/technology/state-of-the-art-onstage-digital-hits-and-misses.html.

Across all of these sites, startup contests provide developers and entrepreneurs with opportunities to present new product ideas in front of industry audiences, and provide audiences with opportunities to collectively engage with new directions emerging in the industry, represented by the contestants' startups. Winners are selected either by panels of judges (as at Disrupt, where judges come from the ranks of prestigious VC firms and tech companies) or by the audience as a whole (as at Adobe Summit, where audiences vote via Twitter and text message). Increasingly, pitch-offs also take place on college campuses; the Harvard-Yale Pitch-off, judged by investor alumnae of both schools, pits startup teams from the Harvard Innovation Labs against rivals from the Yale Entrepreneurial Institute. First held in 2015 to coincide with the annual Harvard-Yale football game, the event explicitly extends the spirit of athletic competition to tech venture appeals.[43] In addition to the funding pledges, corporate development deals, and media narratives that emerge from these competitions, the story of pitch-off contests in the tech industry is that *there are these contests,* which naturalize industrial ideologies of

[43] Pedagogically, the prevalence of pitch-offs on college campuses suggests that contests such as Disrupt will increasingly feature contestants who acquired experience in the pitch-off genre as undergraduates. Where the Harvard-Yale Pitch-off draws on a longstanding collegiate rivalry, other university-sponsored pitch-offs (including The McGill Dobson Cup, established in 2009) are devised strictly for those affiliated with the school. More broadly, academic research is itself increasingly subject to evaluation in pitch-off form, as in 3MT, a nation-wide "three minute thesis" competition for PhD students, which originated in Australia and now has iterations in countries around the world. Canada, for instance, has borrowed the format for both the Canadian 3MT, sponsored by the Canadian Association for Graduate Studies, as well as the SSHRC Storytellers Competition, sponsored by the Social Sciences and Humanities Research Council. These contests are open to graduate students only, suggesting that, within academic circles, participation in a pitch-off competition (like a lot of graduate student life) functions as something between a student activity, such as an intramural athletic league, and a pre-professional training exercise, such as a graduate student conference. However, unlike with a graduate student conference, there is not (yet) a professional corollary. As the practice expands, it seems entirely likely that similar contests will arise for university professors.

market-based competition and merit-based success.[44] At the pitch-off, startup founders are rendered as natural competitors on an equal playing field; judges as representatives of a market that recognizes the most innovative technology and rewards its producers.

Part of the work of participating in a startup contest like Disrupt entails articulating a new venture as central to the future of the tech industry, defined by its potential market share and social utility. While Layer and Dryft, the winner and runner-up of Disrupt SF 2013, are both mobile software ventures, companies that aspire to intervene in a broad range of areas compete in the contest each year. Between 15-30 companies compete in the Startup Battlefield at every conference, culled from approximately 1000 applicants. To apply to the Battlefield, a startup must have a functional product prototype to demo for the selection committee via video submission. In selecting Battlefield contestants, *TechCrunch* editors prioritize companies that will "launch for the first time to the press and public" onstage at Disrupt. That means that companies can't have held a public launch event at a competing conference. Hardware startups can't have mass produced prototypes. Software startups may have a product available to a private group of beta users, but not a product publically available for download. Beyond the stipulation that each company's flagship product must be in preproduction, however, no other rules regarding the product exist. The Battlefield that I attended in 2015 consisted of startups creating tools for healthcare, videogames, financial management, higher education, and, as discussed above, cannabis consumption, among several other sectors, suggesting that "tech" functions as an umbrella term for a broad range of applications. And, moreover, part of the way

[44] Modeled on Acland, on industry summits: "In addition to the business deals and arrangements that emerge from meetings, the story of entertainment and technology summits is that *there are these summits*, which makes manifest this newly settled genre of cross-media networking, prognosticating, and promoting." See Acland, "Consumer Electronics and the Building of an Entertainment Infrastructure," 256.

that a company can articulate itself as a technology is through its participation in a conference like Disrupt.

That the competition featured an array of technological forms and functions was no coincidence; in selecting Battlefield contestants, *TechCrunch* editors take care to ensure that each contest encompasses "different verticals and geographies."[45] Yet while technological diversity at Disrupt is obvious and abundant, social diversity is more complex. To present at Disrupt, a startup may have already acquired some amount of seed funding, part of its initial round of investments, or it may be totally self-funded, a practice known as bootstrapping. There are no application or participation fees to compete at Disrupt, but startups are responsible for their own travel and accommodations. Perhaps as a result, California and west coast startups were particularly well represented at the 2015 San Francisco show, but many companies came from elsewhere in North America (Boston; Brooklyn; New York; Toronto) and around the globe (Bangalore; Dublin, Paris; Tel Aviv, Tokyo, Vienna; Zurich), though all pitches are delivered in English. The global south is generally under-represented on the Disrupt stage, however the Startup Alley expo hall's international pavilion included, in the fall of 2015, official delegations of startups from Latin America and the Middle East, meaning that they receive state funding to participate in the event, an indication of the business potential and prestige associated with the conference.

In recent years, *TechCrunch* has become more mindful of social diversity at Disrupt. At the Battlefield that I attended, women and people of color were included among both contestants in the preliminary rounds of the contest and in the finals, a stark contrast to the stereotypical "tech bro" scene that had graced the Disrupt SF stage two years earlier, when the only women

[45] Stephen Wood, "Frequently Asked Questions about Startup Battlefield," *TechCrunch*, accessed May 10, 2017, http://social.techcrunch.com/startup-battlefield/faq/.

present were handing out the awards. Elsewhere in the industry, pitch-off contests continue to index the homogeneity that plagues the tech world, revealing organizers' attention (or lack thereof) to diversity. When I attended the 2017 Adobe Summit, male and female contestants of diverse ethnicities participated in the mainstage "Sneaks" competition; a similar but smaller pitch-off contest, held during a breakout session, included only men, all but one of whom was white, suggesting that only the organizers of the highly visible event gave conscious consideration to inclusivity. A still more illustrative analogue to Disrupt is the ShowStoppers LaunchIt competition, a startup pitch-off contest held at CES, the tech tradeshow discussed in the next chapter; when I attended the ShowStoppers in 2016, only one of the twelve contestants had a female founder.

The homogeneity of the tech industry, whose struggles to diversify I will return to at the end of the chapter, is rendered particularly visible on convention stages. While much critiqued "all male panels"[46] are prevalent at conventions across a range of sectors,[47] the problem is perhaps especially visible at tech conferences.[48] That each of the 4-6 person judging panels of the

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[46] "Congrats, You Have an All Male Panel!," Tumblr, *Congrats, You Have an All Male Panel!*, accessed May 10, 2017, http://allmalepanels.tumblr.com/?og=1; "Boys Clubs," Tumblr, *Boys Clubs*, accessed May 10, 2017, http://100percentmen.tumblr.com/?og=1.

[47] Gráinne Ní Aodha, "'It's Just Embarrassing Really': Restaurant Awards Criticised for All-Male Panel," *TheJournal.ie*, May 3, 2017, http://www.thejournal.ie/irish-restaurant-awards-sexism-3370223-May2017/; Susan Cornwell, "Senators on Defensive Over All-Male Healthcare Panel," *Reuters*, May 9, 2017, sec. Politics, http://www.reuters.com/article/us-usa-healthcare-idUSKBN1852RP; Jacqueline O'Neill, "7 Rules for Avoiding All-Male Panels," *Foreign Policy*, March 8, 2016, https://foreignpolicy.com/2016/03/08/7-rules-for-avoiding-all-male-panels/; Owen Barder, "The Pledge - I Will Not Be Part of Male-Only Panels," *Owen Abroad*, January 21, 2015, http://www.owen.org/pledge.

[48] Rebecca Rosen, "A Simple Suggestion to Help Phase Out All-Male Panels at Tech Conferences," *The Atlantic*, January 4, 2013, https://www.theatlantic.com/technology/archive/2013/01/a-simple-suggestion-to-help-phase-out-all-male-panels-at-tech-conferences/266837/.

Battlefield at Disrupt SF 2015 contained one or two female judges suggests *TechCrunch*'s sensitivity to these optics. However, a study of how often male judges speak during the Q&A sessions, relative to their female counterparts, would show that representation onstage is but one step toward cultivating inclusivity: male judges tended to speak more often, and nearly always spoke first.

The complex social dynamics that shape the Battlefield's judging panels exceed the gendered conversational dominance that characterizes much professional activity.[49] Although it went unmentioned onstage at Disrupt SF 2013, the *TechCrunch* post announcing the winner included a disclosure: "*One of Layer's seed investors is CrunchFund, an early-stage VC fund cofounded by Michael Arrington, who also founded TechCrunch*."[50] Layer was not the first CrunchFund-backed Disrupt winner, nor would it be the last. What's more, in 2013, Arrington had participated in the judging panel that selected Layer as the winner. Pressed for an explanation, *TechCrunch* told a reporter that in fact, the Battlefield regularly includes judges who have already invested in the startups onstage. "Due to the intertwined nature of investor relationships," said editor Alexia Tsotsis, "it's inevitable that judge conflicts will arise," adding that in fact, some of the previous winners had also received prior backing by contest judges.[51] While a few journalists scoffed at the self-promotional charade, much to their consternation,

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[49] See Tonja Jacobi and Dylan Schweers, "Justice, Interrupted: The Effect of Gender, Ideology and Seniority at Supreme Court Oral Arguments," *Virginia Law Review*, forthcoming, 1–77 manuscript pages.

[50] Chris Velazco, "And The Winner Of Disrupt SF Battlefield 2013 Is… Layer!," *TechCrunch*, September 11, 2013, http://social.techcrunch.com/2013/09/11/and-the-winner-of-techcrunch-disrupt-sf-2013-is-layer/.

[51] Alexia Tsotsis quoted in Sam Biddle, "Michael Arrington: A Crooked Judge Since 2011," *Valleywag*, September 13, 2013, http://valleywag.gawker.com/michael-arrington-a-crooked-judge-since-2011-1308682362.

those involved appeared unconcerned. "Sure seems like a conflict!" wrote *Business Insider*, "But if the other startups are okay with it, and readers are okay with it, and attendees don't care, then what are you going to do?"[52]

The tech industry, on the whole, holds Disrupt in high regard, despite occasional criticisms from the press.[53] "It is incredibly obnoxious when the press decides their petty dramas ARE the news," wrote Battlefield alum Joel Spolsky, whose defense of the event typifies the perspective of startup founders who, whatever the overarching rules shaping the game, are chiefly invested in advancing their own companies.[54] His software startup launched at Disrupt in 2011, when more than a few attendees expressed frustration that the press devoted coverage of the event to the scandal then engulfing the blog at the expense of the startups exhibiting at the show. Countering one such frustrated Startup Alley exhibitor who posted about his experiences on a different industry blog, Spolsky argued that, "most people didn't let the Arringtongate crap distract them too much," and pointed out that, unlike exhibitors at tables in the expo hall, who compete for attention with hundreds of other exhibitors, "Battlefield companies DO get a lot of

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[52] Jay Yarow, "The Company That Won TechCrunch's Startup Contest Was The Only Company That Got Funding From Judge Mike Arrington," *Business Insider*, September 12, 2013, http://www.businessinsider.com/mike-arringtons-investment-wins-techcrunch-disrupt-2013-9. See also Sam Biddle, "Michael Arrington Gives Himself an Award," *Valleywag*, September 12, 2013, http://valleywag.gawker.com/michael-arrington-gives-himself-an-award-1300182251; Eric Markowitz, "Enter the Start-up Hype Machine: TechCrunch Disrupt," *Inc*, September 19, 2013, https://www.inc.com/eric-markowitz/enter-the-hype-machine-techcrunch-disrupt.html.

[53] The singularly loud industry voice critical of the conference is deeply self-interested in its industrial diminishment: Jason Calacanis, a cofounder of the original competition, who now runs his own, competing startup event following a long and contentious public separation from *TechCrunch*. See (among other, similar complaints) Jason Calacanis, "Founders: Do Not Waste Money on TechCrunch Disrupt's Startup Alley," *Calacanis.com*, March 24, 2016, http://calacanis.com/2016/03/24/founders-do-not-waste-money-on-techcrunch-disrupts-startup-alley/.

[54] Joel Spolsky, "Comment on Peter LaLonde, 'Why I Regret Going to TechCrunch Disrupt,'" *Hacker News*, September 20, 2011, https://news.ycombinator.com/item?id=3016731.

attention," by virtue of their individual time onstage in the spotlight.[55] Indeed, in the auditorium, the reserved press rows at the front of the room are lined with tables and power outlets, enabling members of the press to liveblog the contest and file stories as they watch; exhibitors in the alley use the spectacle of exhibition in an effort to similarly capture press attention. In 2011, Spolsky went so far as to credit the *TechCrunch* staff with absorbing "all the negative part of that attention for themselves, leaving the startups with some positive attention."[56] In this perspective, the press is useful to startups strictly as a vehicle for promotion, rather than as an arbiter of fair play, and the Disrupt conference is a welcome mediator.[57]

Happily, when I attended Disrupt in 2015, I was outfitted with press credentials, thanks to the now-defunct *Antenna Blog*, a media and culture site run by the Department of Communication Arts at the University of Wisconsin, which afforded me a front row seat to the show. (Alas, Snoop's session was the first of the conference, and I had not yet located the press entrance.) A friend of mine who works for a TV network also attended the conference that year, and a security guard with whom we made friends, upon spotting our color-coded press badges, helped us find optimal seats each afternoon. I am sure we were not the only attendees for whom he did so. But *TechCrunch* takes the rules seriously, because press attention to the Battlefield is a critical draw for contestants. Anyone not wearing press badges who attempts to sit up close during the Startup Battlefield is firmly but politely pointed to the back. Earlier in the day,

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[55] Peter Lalonde, "Why I Regret Going to TechCrunch Disrupt," *Openera*, September 20, 2011, https://openera.wordpress.com/2011/09/20/why-i-regret-going-to-techcrunch-disrupt/; Spolsky, "Comment on Peter LaLonde, 'Why I Regret Going to TechCrunch Disrupt.'"

[56] Spolsky, "Comment on Peter LaLonde, 'Why I Regret Going to TechCrunch Disrupt.'"

[57] On the utility of the press, Spolsky and the original blogger in fact agreed. See Lalonde, "Why I Regret Going to TechCrunch Disrupt.": "There are conflicts of interest, be they disclosed or non-disclosed. None of it matters. All of it is noise," which distracts from "the disruptive startups."

security is more lax, because during the morning thought leadership sessions (except when Snoop speaks) the auditorium is not as packed as it is during the competition. The packed house during the competition signals that the Startup Battlefield is the centerpiece of the show. Moreover, while an occasional publication directs a critical eye toward the politics of the conference and its role in the tech industry more broadly (*Valleywag*, until ceasing publication in 2015, was a reliable scold), reporters at many of the tables, tasked with filing stories as quickly as possible, parrot the promotional rhetoric of the presenters and the industry's enthusiasm for the event.[58] As does, of course, *TechCrunch* itself, in the stories it publishes on every Battlefield company, immediately following its onstage pitch.

That startups appear reluctant to criticize *TechCrunch* is probably partly a result of their relative lack of power in a field where they are attempting to establish new ventures. However, the lack of outrage among Battlefield contestants over what appears to be the pitch-off equivalent of loaded dice may also have to do with the benefits that contestants accrue just from participating in the contest. While the Disrupt Cup brings 50 thousand dollars and amplified press attention ("Who won?" being a chief narrative of the event), the opportunity to deliver a pitch in front of the convention itself provides companies with an extraordinary degree of access to investors, press, and potential customers—particularly so for finalists, who have the opportunity to deliver their presentations twice. Thus, advancing in the competition matters, as does winning, and even as contestants focus on taking home the Disrupt Cup, they have an opportunity to benefit just by appearing onstage.

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[58] At one point, Arrington agreed to continue his participation in Disrupt on the condition that *Valleywag* reporter Adrian Chen be barred from the event, an indication less of the toxicity in *Valleywag*'s reporting than of the lack of critical approaches by other outlets. See Sam Biddle, "Update: Michael Arrington Showed Up at TechCrunch Disrupt After All," *Valleywag*, April 30, 2013, http://valleywag.gawker.com/update-michael-arrington-showed-up-at-techcrunch-disru-485911600.

In the decade since *TechCrunch* held its first contest, its two earliest winners, Mint and Yammer, have each gone onto million-dollar acquisition deals. At the same time, Dropbox, the contest's biggest billion-dollar success story, reaped benefits just by competing in the show. "Whether you win or lose, once you've been on that stage you will forever be a part of the TechCrunch family," says Cloudflare CEO and Battlefield alum Matthew Pierce, "and that's something that pays dividends for your company for years to come."[59] A runner-up in 2010, two years later, his company, which manages website performance and security, had added "23 data centers (one per month since launch)" along with "half a million customers," and credits "a significant amount of [that] success to the stage Disrupt provided."[60] Because Cloudflare's customers include startups who have themselves participated in the Battlefield, Pierce is uniquely positioned to see how presenting at Disrupt drives attention to company websites. "Over the three days at TC Disrupt, expect your site to get a 3x to 10x surge in traffic," he advises, with "about 20% of that traffic concentrated during the hour that you're on stage," hits that come from those in attendance as well as those livestreaming the contest remotely; for companies onstage during the finals, when viewership runs especially high, "traffic can reach hundreds of requests per second."[61] Pierce shared his data on the company blog, as advice to future contestants, in 2012; as the conference has grown in the previous five years, these numbers probably have too. Whatever promotional activities companies have undertaken prior to stepping onstage at Disrupt, their live presentations reach an unparalleled base of potential early adopters.

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[59] Matthew Prince, "What It's Like to Launch at TechCrunch Disrupt," *Cloudflare Blog*, September 10, 2012, http://blog.cloudflare.com/what-its-like-to-launch-at-techcrunch-disrupt/.

[60] Ibid.

[61] Ibid.

So too does Disrupt connect Battlefield contenders with venture capitalists; not for nothing is a Publisher's Clearing House-inspired novelty check among the conventions most striking props. "At the last TechCrunch Disrupt, the finalist panel consisted of some of the best VCs in Silicon Valley," recalls Spolsky, and presenting in front of them means "they'll all take your call."[62] Investors who watch the competition from the audience also take note; "after our presentation," reports Battlefield alum Michal Monaghan, "multiple investors walking the show floor approached us to schedule a meeting."[63] Brian Pokorny, of the venture firm SV Angel, concurs, endorsing the contest as a source of "instant credibility."[64] Of course, if merely being a "Battlefield company" enhances a startup's investment prospects, winning the contest (or coming in second, a prize that merits recognition only) imbues a company with a still greater seal of investor approval. However, Spolsky and Monaghan each emphasize that taking the stage at Disrupt comes with immaterial benefits, as well. "After months of product creation," says Monaghan, "to show our product off in front of a standing room only audience was the highlight of the week."[65] Similarly, Spolsky describes "seeing real-world people actually start using your product" at a conference as "the great moments that make it all worthwhile." These sentiments suggest that the conference operates in part as a corrective to the entrepreneurial mythology that celebrates working in small startup lofts as necessarily more gratifying than corporate

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[62] Joel Spolsky, "Should You Launch at a Conference?," *Joel on Software*, September 15, 2011, https://www.joelonsoftware.com/2011/09/15/should-you-launch-at-a-conference/.

[63] Michael Monaghan quoted in Founders Network, "7 Tips from Founders on Launching at TechCrunch Disrupt," *Founders Edge*, September 16, 2014, https://foundersnetwork.com/blog/7-promotional-tips-founders-attending-techcrunch-disrupt-sf/.

[64] Brian Pokorny quoted in Stephen Wood, "About Startup Battlefield," *TechCrunch*, accessed May 24, 2017, http://social.techcrunch.com/startup-battlefield/about/.

[65] Monaghan quoted in Founders Network, "7 Tips from Founders on Launching at TechCrunch Disrupt."

complexes.[66] Here, it serves a social function, providing those who work at small, individual companies a sense of belonging within a larger public.

Finally, the competition provides startups not only with validation at the moment of a launch but also with momentum during production. "You have an incredible hard deadline," explains Spolsky, which is "an incredible team-building exercise."[67] Indeed, the late capitalist penchant for referring to co-workers as "teams" perhaps achieves its fullest realization in pitch-off contests like Disrupt, in that small groups work closely together in an effort to best the competition. So too do they participate in a work culture that minimizes organizational hierarchy, at least on the surface.[68] Startup teams that devote themselves to a contest centered on accruing venture capital render explicit what Gina Neff has called "venture labor," the adoption of a professional ethic that, in the absence of a robust social safety net, union protection, or corporate benefits, valorizes risk as a path to financial security. Where venture capitalists invest funding in young companies, on the assumption that doing so will reap dividends down the line, venture laborers act on the same principle, but rather than personal finances, they invest "time, energy, human capital and other personal resources," forgoing more balanced engagement with other institutions or endeavors. "Venture labor," Neff argues, "is the explicit expression of

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[66] Adobe, for instance, has invested funding and organizational leadership in its efforts to retain employees in a culture that celebrates startups, the subject of a keynote address at a CES preconference in 2015: Mark Randall, "Keynote Address" (CEA Innovate!, New York, November 9, 2015).

[67] Spolsky, "Should You Launch at a Conference?" See also Diego Villarreal Meyer. "exhibiting at the conference can create a deadline for your team to rally around," quoted in Founders Network, "7 Tips from Founders on Launching at TechCrunch Disrupt."

[68] For a critique of non-hierarchical workplace structure in startup culture, see Rosalind Gill, "Cool, Creative and Egalitarian? Exploring Gender in Project-Based New Media Work in Euro," *Information, Communication and Society* 5, no. 1 (2002): 70–89.

entrepreneurial values by nonentrepreneurs."[69] Or, as Spolsky put it, "the members of our team who came out to San Francisco for Disrupt (including two summer interns who skipped a week of classes to join us) had a blast."[70]

In sum, rather than sharing journalistic alarm over allegations of foul play, the founders working in the field are focused on utilizing existing industrial frameworks to their own ends, capitalizing on their Battlefield participation to gain funding, media coverage, and customers, and to raise company morale. Spolsky's focus on morale, in particular, may help explain his cheerful resignation to "the fact that the winners of the show were all Arrington investments" which, he remarks, "made it much easier to swallow the fact that we didn't win!"[71] Rather than seeing the distribution of awards as either scrupulously fair or blatantly nepotistic, he argues that "the politics behind who 'wins' are murky," and emphasizes the other benefits of participating.[72]

On the other hand, from a still "more redbloodedly capitalist and free market" perspective, to borrow the language of a *Forbes* journalist, judges voting for their own investments are neither crooked nor inconsequential, but "entirely desirable."[73] Beyond concern that biased judges are unfair to contestants, viewing the contest's adjudication as fraught with

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[69] Gina Neff, *Venture Labor: Work and the Burden of Risk in Innovative Industries* (Cambridge: MIT Press, 2012), 16: "It is as if the logic of American capitalism replaced the metaphor of 'climbing the ladder' for professional work with that of jumping aboard a ship that has yet to come in."

[70] Spolsky, "Should You Launch at a Conference?"

[71] Spolsky, "Comment on Peter LaLonde, 'Why I Regret Going to TechCrunch Disrupt.'"

[72] Spolsky, "Should You Launch at a Conference?"

[73] Tim Worstall, "A Mike Arrington Investment Won The TechCrunch Disruptor Competition. Yes, Arrington Was A Judge," *Forbes*, September 13, 2013, http://www.forbes.com/sites/timworstall/2013/09/13/a-mike-arrington-investment-won-the-techcrunch-disruptor-competition-yes-arringoton-was-a-judge/.

conflicts of interest suggests that the competition stymies technological development, passing over quality startups in favor of companies in whom judges have a vested interest. *Forbes* counters that while a Disrupt judge voting for his own investment could be considered a conflict of interest, it could just as easily be seen as an exemplar of a strong efficient markets hypothesis (EMH). A generally accepted theory of investment among economists, EMH holds that the market accurately values stocks based on its "efficient" ability to process information. Proponents of a "strong" EMH take this to extremes, arguing that trading on inside information should be rewarded, because the more information a market processes, the more reliably it assigns value. "In this world Judge A voting for company B in which he has an investment is just great," explains *Forbes*, "for he has that inside information about just how great company B is and his vote is information to everyone else about that too."[74]

Without wading too far into eccentric theories of investment, it's worth noting how the *Forbes* piece takes a method of appraisal for publically traded companies, with products in circulation, and applies it to startups whose technologies are still under development. The approach underscores a different set of free market logics already at play in the Startup Battlefield, and elsewhere: the privatization of technological innovation. The startup economy looks to small startups to develop innovative technologies; at their most successful, startups either grow into massive corporations that go public, or they "exit." That is, they sell to a corporation, which wants to acquire technology developed by the startup. Venture capitalists bet on startups they expect to succeed by providing early funding, in exchange for equity. The rapid growth of venture capital since the 1990s, coupled with declining public investment in science and technology, deserves a larger research study that analyzes how these trends influence

[74] Ibid.

technological development.[75] As the *Forbes* thought experiment indicates, they suggest a "more redbloodedly capitalist" system in which market logics increasingly determine technological development.

The celebrated entrepreneurial narrative of a lone genius who toils away in a garage and emerges with a world-changing technology (a figure best realized in the Steve Jobs mythology discussed in the last chapter) construes technological innovation as taking place in a vacuum, independent of outside knowledge or support (never mind that Apple's breakthrough technologies to this day have roots in publically funded developments). Streeter's history of computing links the emergence of the narrative to President Ronald Reagan's vision of the 1980s as the dawn of "the age of the entrepreneur," marked by "a radical belief in markets" and "suspicion of all forms of government regulation."[76] Following the end of the Cold War, as public funding of science and technology research declined and society continued to look to independent entrepreneurs for technological breakthroughs, venture capitalists stepped in to fund them. Showcases like Demo and Disrupt, in turn, emerged to help venture capitalists find the most lucrative startups. The arrangement not only situates billionaire investors as guardians of technological progress, it renders like-minded startup founders instantaneous competitors rather than potential collaborators. The pitch-off contest puts this entrepreneurial competition under stage lights and gives it theatrical form.

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[75] Harry Cendrowski et al., *Private Equity: History, Governance, and Operations* (Hoboken: Wiley, 2012); William D. Bygrave and Jeffry A. Timmons, *Venture Capital at the Crossroads* (Cambridge: Harvard Business Press, 1992); "The Future Postponed: Why Declining Investment in Basic Research Threatens a U.S. Innovation Deficit" (Cambridge: MIT, 2015); Richard R. Nelson and Gavin Wright, "The Rise and Fall of American Technological Leadership: The Postwar Era in Historical Perspective," *Journal of Economic Literature* 30, no. 4 (1992): 1931–64.

[76] Streeter, *The Net Effect*, 69–70.

Not every startup to launch at Disrupt becomes a Mint or a Dropbox. The *TechCrunch* Battlefield Leaderboard, which tracks the successes of every Battlefield company since the first TechCrunch40, also includes Questli ("turn real life goals into a game"), Textingly ("beef up realtime customer interaction"), and Madbrook ("draw butts on the ipad").[77] Each of these launched at Disrupt in 2011; six years later, only Madbrook is listed as still in operation.[78] It would be interesting to analyze the success and failure rate of Battlefield companies relative to startup longevity more broadly, although little consensus exists on how to determine and track startup failures, what industry analysts call "survivorship bias."[79] However, the point is not that competing in the Startup Battlefield guarantees success (companies go under for all kinds of reasons) but rather that competition provides a platform on which founders can made a bid for their company's value, to an audience comprised of insiders who, if they agree, can help a startup move its prototypes toward production.[80]

A well-executed pitch-off presentation probably won't be enough to compensate, in the eyes of contest judges, for a product that seems poorly conceived. Nor will a spectacular booth in Startup Alley, in and of itself, lead to meetings with venture firms. However, a solid startup may

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[77] TechCrunch, "Backstage Interview with Questli," *TechCrunch*, December 19, 2011, http://social.techcrunch.com/video/backstage-interview-with-quest-li/517175506/; Rip Empson, "Textingly Adds Live Chat And Twilio Hosting To Beef Up Realtime Customer Interaction," *TechCrunch*, May 23, 2011, http://social.techcrunch.com/2011/05/23/textingly-adds-live-chat-and-twilio-hosting-to-beef-up-realtime-customer-interaction/.

[78] TechCrunch, "Battlefield Leaderboard," *TechCrunch*, accessed May 27, 2017, http://social.techcrunch.com/startup-battlefield/leaderboard/. Despite this listing, the company website appears to no longer exist.

[79] CB Insights, "The R.I.P. Report – Startup Death Trends," *CB Insights*, January 18, 2014, https://www.cbinsights.com/blog/startup-death-data/.

[80] For a summary of frequent reasons that startups fail, see CB Insights, "The Top 20 Reasons Startups Fail" (New York: CB Insights, January 18, 2014).

Figure 7: Layer wins the Disrupt Cup, TechCrunch Disrupt SF, 2013. (TechCrunch TV still.)

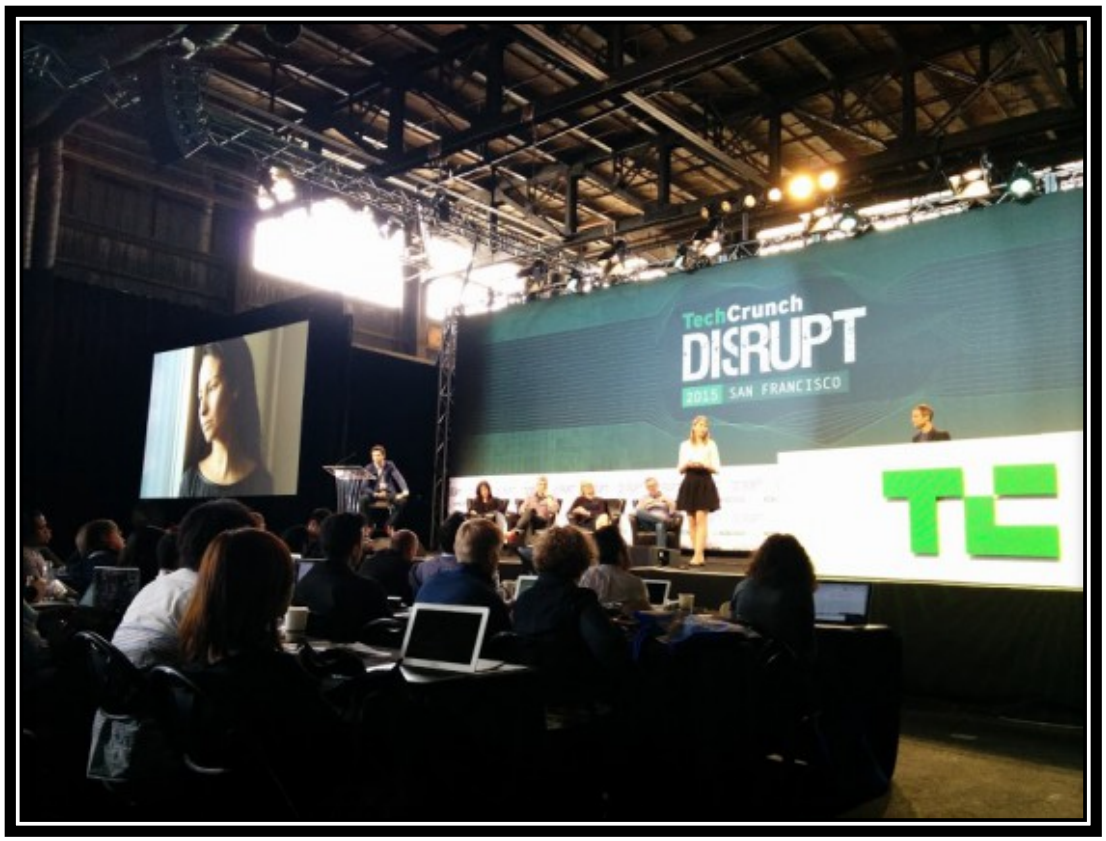

Figure 8: Startup Battlefield, TechCrunch Disrupt SF, 2015. (Photo by the author.)

well depend on presentational stylistics in order to garner the attention it needs to get off the ground. This is not a small matter: nearly every guide to tech demos and exhibitions begins by advising readers that without quality technology and a solid business plan, no amount of presentational care will bring entrepreneurs the success they seek at conferences.[81] Yet the very fact of these guides' existence points to the role that presentational paradigms play in the introductions of new technologies. The next section thus shifts attention to the semiotics of these presentations.

Perfect theater:
Spectacle and encounter

White letters at the top of a bright green banner spelled out the word WITNESS. The all-caps header was not, in this case, a directive to passersby ("see this!") but the name of the company whose space in the Disrupt expo hall the banner demarcated. Still, the banner for Witness, a company whose livestreaming app enables users to securely record crimes, functioned as near double entendre: all of the booths in Startup Alley are designed to make passersby stop in their tracks and take note of the products and prototypes on display.[82]

Although the majority of startups at Disrupt have yet to launch a product, and many operate on shoestring budgets, nearly all Startup Alley exhibitors have sleek banners, product prototype displays, and company swag for conventioneers to take home. These displays are meant to both spark the attention of passersby and visually explain the company's technology, so

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[81] Michael Cho, "How We Hacked TechCrunch Disrupt," Medium, *The PIF Chronicles*, (September 28, 2015), https://medium.com/the-pif-chronicles/how-we-hacked-techcrunch-disrupt-f62f9f9f8dd7; Spolsky, "Should You Launch at a Conference?"

[82] For a studies of witnessing and mediation, see Paul Frosh and Amit Pinchevski, *Media Witnessing: Testimony in the Age of Mass Communication* (New York: Palgrave Macmillan, 2009).

that anyone glancing at it might get an immediate idea of what it does. Witness's banner, for instance, included a thumbprint with a "W" on it over the heading, and copy that succinctly detailed the company's product below it, alongside large images of smartphones to indicate an app. Founder Marino Baristas, standing in front of the banner in a green t-shirt to match, greeted anyone who paused in front of his booth and offered to take them through a video demo, which played on a computer monitor stationed atop a café table, next to the banner. His booth attracted a consistent crowd, perhaps in part because he had already generated significant buzz before the conference: at Disrupt NY the previous spring, Witness had won the Hackathon. A pre-conference event, the Hackathon tasks engineers and developers with building a project over a 24 hour period and then (in yet another presentational contest) demoing it live onstage, in front of Hackathon participants and judges. In the interim four months, Baristas had quit his job in finance and built a company around the app, which meant not only fine-tuning the technology and distributing it through the iTunes app store, but also acquiring the presentational paraphernalia necessary to exhibit it at conferences.

Monochrome company t-shirts, a staple of tech fashion, are in fact closely linked to the industry's exhibitionary practices. As Startup Alley exhibitor Taufiq Husain advises prospective exhibitors, "wearing your company t-shirt helps you stand out in the crowd."[83] While all convention-goers wear badges that have their professional affiliation printed beneath their names, in the swarm of convention-goers on the show floor, dressing in a company t-shirt, with a logo and name emblazoned across the front, provides an immediate visual cue of who to speak with at any given booth. Moreover, when exhibitors step away from their stalls to engage with the rest of the event, company t-shirts continue to facilitate networking opportunities. "I was

[83] Husain quoted in Founders Network, "7 Tips from Founders on Launching at TechCrunch Disrupt."

stopped by several journalists and investors just walking around the conference," Husain adds, "who saw my t-shirt and said 'Listicle, I've heard of you guys.'"[84] Moreover, part of the way startups get the industry to hear of them comes from their presence in conference exhibition halls—and the t-shirts worn at the events indicate the company's presence. This is a sort of sartorial inversion of the Apple II t-shirts discussed in the last chapter, which evidence the wearer's presence at an Apple event after the fact; here, startup t-shirts at the tech conference mark the new company's presence in the industry.

If live publishing events turn the media outlet into a three dimensional environment, expo booths serve a similar function for companies displaying their wares. At Disrupt, the conference itself and the stalls that fill Startup Alley both constitute "brandscapes," sites that, in Otto Riewoldt's enthusiastic formulation, render "the emotional plane of the brand experience" as a three-dimensional space "where the world of the brand is staged and enacted."[85] Here, the "brand," as Sarah Banet-Weiser argues, describes "an intersecting relationship between marketing, a product, and consumers."[86] As a brandscape, Disrupt explicitly "stages and enacts" the *TechCrunch* brand by putting its reporters and frequently-covered subjects into conversation (the product) onstage, in front of an audience of *TechCrunch* readers (consumers), at a high-profile event billed as foundational to the industry (marketing). The expo booths, in turn, serve exhibitors as miniature brandscapes, which stage the worlds that startup founders envision for their products. Because the majority of these companies have yet to formally launch a product,

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[84] Husain quoted in ibid.

[85] Otto Riewoldt, *Brandscaping: Worlds of Experience in Retail Design = Erlebnisdesign Für Einkaufswelten* (Basel: Birkhauser-Publishers for Architecture, 2002), 8.

[86] Sarah Banet-Weiser, *AuthenticTM: The Politics of Ambivalence in a Brand Culture* (New York: NYU Press, 2012), 4.

these exhibits give special meaning to Banet-Weiser's contention that "the brand is a promise as much as a practicality."[87] In the competition for venture capital, startups seek to imbue their products with cultural significance through brandscaped stalls, where exhibitors "stage and enact" their technologies through demos and displays.

When the founders of an app called PIF noted how easy it would be to get lost in a sea of banners and video demos used by the hundreds of app developers on the show floor, their solution was likewise spectacular. In lieu of a six-foot banner, they came to Disrupt with life-sized cardboard cutouts of PIF co-founder Kenneth Chew, celebrity angel investor Ron Conway, and Darth Vader, each connected by bright blue arrows that said "PIF": the networking app links people to others whom they want to meet. "It was a much more visual way of explaining how PIF works," explains co-founder Michael Cho. Moreover, the spectacle attracted "throngs of people" to the booth who wanted to take photos with the cutouts, and who then spoke with the founders to learn about the company.[88] "We had follow-up leads with a billionaire, a half-dozen top VCs and angel investors," Cho reports, as well as "*TechCrunch* writers, and most importantly, real user feedback for our app."[89] Beyond a mere publicity stunt, the interactive spectacle drove the growth of the company and the development of its product.

Disrupt is "the perfect theater," *TechCrunch* COO Ned Desmond once told a journalist, "for people in love with start-ups to engage with each other."[90] That theater functions in at least two ways: it is a space of encounter and also a space of spectacle. Moreover, the encounter takes

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[87] Ibid.

[88] Cho, "How We Hacked TechCrunch Disrupt."

[89] Ibid.

[90] Ned Desmond quoted in Markowitz, "Enter the Start-up Hype Machine."

place *through* spectacle, from Startup Alley, where entrepreneurs create striking displays in an effort to catch the eye of passersby, to the carefully crafted presentations on the Disrupt Stage. At the Battlefield that I attended, the Disrupt Cup went to a Brooklyn-based startup called Agrilyst, a company that places smart sensors inside greenhouses and aggregates the data so that farmers can make cost-efficient climate control decisions. More so than most of the entrants in the contest, Agrilyst founder Allison Kopf had to use her six-minute presentation to distill a product that was both technically complex and commercially specific. After providing a one-sentence description of her product ("Agrilyst is a platform that helps indoor farmers take control of their operations"), she worked to make it instantly relatable to the audience. "Farming is hard," she said. "Anyone who's ever tried to grow tomatoes in your backyard knows what I'm talking about. Everything wants to kill your plants!" And then, she quickly transitioned from consumer hobbyists to professional specialists. "But what if your *business* is growing food? Then you spend a lot of time trying to shrink the list of things that can kill your crops, because it's the difference between your business succeeding or failing. Now, for indoor growers, like in warehouses or greenhouses, it isn't any easier…"[91]

Anyone who's ever introduced a complex concept in a lecture (the device works in writing, too) knows how careful framing can make an unfamiliar idea accessible to an assembled audience. Kopf explained the problem her technology would solve by introducing a character named Tom, a green house pepper farmer who spends time and energy hand-recording his pepper yields, in addition to thousands of dollars on agriculture consultants. She then began the demo in earnest, showcasing the platform as used by Tom, the hypothetical pepper farmer, whom it enables to see all his greenhouse data in one place and make decisions accordingly.

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[91] Allison Kopf, "Agrylist" (Disrupt SF 2015, San Francisco, September 25, 2015).

Before closing, she quickly added that the company's private beta version of the platform was already generating revenue and predicted the existence of a nine-billion-dollar market, one that would grow in the coming years, as farmers begin moving their operations indoors in response to climate change. Like every contestant, she concluded her presentation with a snappy button that sums up grand ambitions: "We want to help feed the world. Join us."[92] In sum, her winning pitch, an exemplar of the form, neatly demoed the technology (through a singular protagonist) and pointed to robust market demand (with data to back up her claims). Consider, also, the pitch's dramatic frame: she began by describing her company's mission in terms relatable to an audience and ended by promising world-changing technology.

That technological innovation is a path – perhaps *the* path – to solving the world's problems is a Silicon Valley truism. In her study of social media and tech culture, Alice Marwick observes how, "the tech scene believed strongly that changing the world through social media was possible," but points out that "it's arguable whether building a better local search, for instance, is really world changing."[93] *Silicon Valley*, the HBO sitcom (as opposed to Silicon Valley, the tech scene) echoes Marwick's insight in the episode that it sets at Disrupt, by having earnest Battlefield contestants variously promise that their startups will "make the world a better place" through "paxos algorithms for consensus protocols;" "software-defined data centers for cloud computing;" and "canonical data models to communicate between endpoints."[94] The link between techno-utopianism and funding competitions is important. "If one is truly 'changing the

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[92] Ibid. This closing line immediately followed a line that was perhaps a competing conclusion, one that also served as a callback to the beginning: "Farming is hard. With Agrylist it's a lot easier."

[93] Alice E. Marwick, *Status Update: Celebrity, Publicity, and Branding in the Social Media Age* (New Haven: Yale University Press, 2013), 83.

[94] Judge, "Proof of Concept."

world'" surmises Marwick, "then one probably deserves the millions of dollars that may come with achieving that goal. Those who chase wealth for its own sake, though, seem much less deserving."[95] In the context of a pitch-off, questions of who deserves financial reward are especially pointed.

One result of the *Silicon Valley* episode set at Disrupt may be the end of onstage promises that anyone's startup will "make the world a better place." At the Battlefield I attended, Agrilyst's promise to "feed the world" is about as close as any contestant came to doing so. Still, the ideology beneath the rhetoric remains entrenched in tech cultures, so much so that the promise functions less as a claim than as a bid. When technology is an assumed tool of social improvement, the key question becomes not *whether* technology can make the world a better place, but *how* any particular technology will do so, and *which* technology will do it best. In the Q&A that followed the presentation, the judges' questions for Agrilyst centered on largely on logistics: what is the ratio of profit to farm size and should Agrilyst talk to Snoop Dogg? ($1,000 per acre and no, their market is vegetable production); Who else is making technology like this? (no one); How will Agrilyst acquire customers? (word of mouth and partnerships); How did the demo's predictive algorithm work? (historical trigger points); Is the equipment for indoor farming relatively connected, with intelligent lighting and watering? (not at all). These questions, in other words, help judges gauge a startup's technological functionality and financial feasibility. Watching the Q&A, audience members can imagine how they would handle such questions, or judge their own questions against those asked by the judges. By making these pitches at a convention of thousands of industry insiders, plus those livestreaming the conference remotely, contestants work to persuade the industry that theirs is the key technology to solve the future.

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[95] Marwick, *Status Update*, 83.

The staging of the two segments of the pitch-off are revealing: during the Q&A, when they respond to particular questions about their product's feasibility, contestants face the judges; during the pitch itself, when founders situate their products within a social narrative and position their technology as the future of the field, they face out, looking at the audience.

That a pitch session can constitute a form of entertainment is perhaps made most clear by the international success of the *Dragons Den*/*Shark Tank* TV franchise, in which small business owners pitch a panel of celebrity investors. Tech industry insiders, however, caution against going the *Shark Tank* route: when I asked a panel of experts at a CES pre-conference about it, they uniformly agreed that while the TV show can provide good exposure, it can also reach a level of "reality TV ridiculousness," and is ultimately a waste of time. Just getting on the show requires a ton of work and the judges take too much equity. (Evidently *Shark Tank* contestants, to paraphrase Henry Jenkins, are not the entrepreneurs but the product being sold on reality television.[96]) Instead, the panelists recommended conferences like TechCrunch Disrupt, which, in their view, has credibility. Disrupt likewise provides exposure, to a smaller but more singularly powerful audience.[97] By debuting their products onstage at the conference, startup founders invite audiences of industry insiders to participate in their vision of a new technology's social and cultural implications.

Part of the theatricality of the Battlefield comes from its explicit theatrical frame: a proscenium stage, a large audience, professional light and sound design. The proceedings are overseen by an emcee, a role usually filled by former *TechCrunch* writer Jason Kincaid, whose

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[96] Henry Jenkins, "Buying into *American Idol*: How We Are Being Sold on Reality Television," in *Reality TV: Remaking Television Culture*, ed. Susan Murray and Laurie Ouellette (New York: NYU Press, 2009), 343–63.

[97] Kate Drane et al., "Funding Strategies That Work" (CEA Innovate!, New York, November 9, 2015).

Disrupt persona is something of a cross between a gameshow host and a vice principle. At the Battlefield I attended, Kincaid introduced each of the startups before they pitched, and moderated the judging panel's questions during the Q&A round that follows each presentation. After four or five presentations, a brief interval takes place, after which a new panel of judges takes the stage, awaiting pitches from the next round of startups.

During each pitch, one or two members of the team stand center stage. Like an actor delivering a monologue or Steve Jobs demoing a product, no podium or barrier separates the startup founders from the audience. They sometimes move about the stage as they speak, but always stay center stage to command full audience attention. To their left, behind a large podium, other members of the startup team sometimes man a hardware demo or run a PowerPoint slide deck. To their right, judges sit in a row of armchairs, running on angle from upstage to downstage so that audiences can see the judge's faces during the presentations—but also the contestants faces, when they turn to face the judges for the Q&A session that follows each pitch. It's worth noting, too, that while center stage is generally regarded as the most powerful stage position, according to some directorial schools of thought, in western culture, an actor who occupies downstage right – facing house left – shares equal power with an actor center stage, because audiences trained in reading left to right gravitate their attention leftwards. In that sense, the stage picture created at Disrupt is a quintessential theatrical rendering of a power struggle, here carried out between the startup founders competing in the Battlefield and the judges evaluating them.

The infrastructural theatricality of the Battlefield sets the stage, as the saying goes, for the performance practices required of presenters. Cultivating a sense of intimacy with an audience is, of course, in the interest of presenters who hope the audience will adopt their vision of their

products. Star power no doubt helps celebrities like Snoop garner a coveted conference slot in the program, both because of the heightened coverage they generate and the crowds they attract; speaking at Disrupt, in turns, provides celebrities with industrial credibility, and a promotional outlet in front of the same industry insiders that Battlefield contestants seek to impress.[98] As experienced performers, celebrities are also well-positioned to engage an audience, drawing on stage presence and presentational prowess that Battlefield contestants must train to develop.

The ability to succinctly articulate an idea through performance requires a particular skillset; the cultivation of onstage charisma, and a sense of intimacy with an audience, involves still another. Steve Jobs, as discussed in the last chapter, masterfully combined these skills at Apple product launches, setting a standard that the Disrupt *Silicon Valley* episode lampoons by dressing a character in a Jobs-inspired black turtleneck. However, virtuosic presentational skills are not necessarily within the skill sets acquired in the course of technological development or business administration. *The New York Times* puts this in starker terms: "engineering talent and showmanship are sometimes mutually exclusive." Recounting a 2001 Demo conference, the paper describes most presentations as "polished, if not especially entertaining," though notes that in some cases, "presenters forgot their memorized lines, freezing in mid-sentence like sixth graders performing "The Wizard of Oz."[99] Pitch-off contests employ a variety of strategies for avoiding such mishaps; Adobe, for instance, hires celebrity comedians to host its convention's mainstage pitch-off events, relying on their star power and improvisational skills to help contestants deal with the unexpected and keep audiences entertained. Disrupt generally avoids

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[98] See also Derek Jeter and Jaymee Messler, "Direct Messaging with Derek Jeter and Jaymee Messler of The Players' Tribune" (Disrupt NY, New York, May 15, 2017); Jessica Alba and Chris Thorne, "Jessica Alba and Chris Thorne Get Honest" (Disrupt NY, New York, May 11, 2016).

[99] Pogue, "Onstage, Digital Hits And Misses."

moments of utter disaster, in part by requiring all accepted Battlefield contestants to participate in at least two rehearsals in the lead-up to Disrupt. There, they receive coaching from the *TechCrunch* editorial team and established investors, such as Sequoia Capital, a frequent Disrupt partner. These coaching sessions, according to *TechCrunch*, "ensure that all teams are prepared to pitch and field Q/A onstage."[100] Presumably, these sessions also ensure a productive, entertaining experience for the audience, which has, of course, paid large sums of money to attend the show. Moreover, Disrupt contestants minimize the unexpected by structuring their presentations with detailed PowerPoint presentations, and using the slide decks to both visually distill the presentation for audiences and also to keep themselves on track.

The slide decks, which play on the large screens that hang on either side of the stage, likewise index the Battlefield's theatrical sensibility. By prioritizing "collective beholding," argue Erica Robles-Anderson and Patrick Svenson, slideware imbues "organizational life" with a "theatrical sensibility."[101] Their study of Powerpoint insightfully demonstrates how, while "the stylistic conventions associated with slideware have long been part of business communications," widespread adoption of the software has led groups as far-ranging as schools, churches, and the military to operate according to codes of "performative authority" rooted in the

[100] Wood, "Frequently Asked Questions about Startup Battlefield."

[101] Erica Robles-Anderson and Patrik Svensson, "'One Damn Slide After Another': PowerPoint at Every Occasion for Speech," *Computational Culture*, no. 5 (January 15, 2016), http://computationalculture.net/article/one-damn-slide-after-another-powerpoint-at-every-occasion-for-speech.

Silicon Valley business culture that developed the software.[102] No one seeks to be heir to that authority more so than the entrepreneurs who enter the Disrupt competition.[103]

And yet, even as PowerPoint has become "the indispensable medium for presentation" across a broad array of institutions,[104] in the tech cultures that inspired the medium, its mechanics disappear through the technics of theatrical staging. In addition to the two large monitors facing the audience, *TechCrunch* places a pair of smaller monitors below the stage, facing the presenters, enabling them to follow their slides without appearing to drop eye contact with the audience. Setting the presenters' monitors out of the audience's sightlines literalizes the disappearance of the interface, described by cultural theorists and user experience designers alike as media technology's ideal conditions.[105] In a sense, the theater itself functions as a primal disappearing interface, to the extent that it operates as a neutral presentational frame that directs attention away from itself, priming audiences to "get lost" in the world of the stage and kindling a sense of unmediated connection between actors and audiences. The hidden placement of presenter's monitors evidences organizational attention not only to the formation of audience unity through "collective beholding" but also to providing audiences a heightened sense of

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[102] Ibid.

[103] Echoing Dolan's interest in the "unity" sometimes forged between actors and audiences, Robles-Anderson and Svenson argue, "presentations generate unification between speaker and organization precisely because the format relies on the orator's talent for bringing forward key concepts in spectacular terms to create a sense that everything connects. They are a medium for channeling charisma through institutional means." See Dolan, "Performance, Utopia, and the 'Utopian Performative,'" 455–79, doi:10.1353/tj.2001.0068; Robles-Anderson and Svensson, "'One Damn Slide After Another.'"

[104] Robles-Anderson and Svensson, "'One Damn Slide After Another.'"

[105] J. David Bolter and Richard Grusin, *Remediation: Understanding New Media* (Cambridge: MIT Press, 1999), 25–31, http://search.ebscohost.com/login.aspx?direct=true&scope=site&db=nlebk&db=nlabk&AN=9351.

intimacy with the person onstage: the presenter appears to engage the audience directly, rather than directing attention toward a monitor. By decreasing the tendency of PowerPoint to impinge upon a presenter's connection with the audience, the Startup Battlefield presentations (like Apple Product launches, which likewise set monitors below the stage) index an increasingly sophisticated execution of slideware's theatrical logics.[106]

Perhaps because slide decks are a standard component of pitches, whether they take place in venture capitalist offices or onstage at industry conferences, when Battlefield alums dispense advice to future contestants, they tend to focus on the latter, emphasizing the challenges of keeping it together when looking out at an audience of thousands. "You're always worried that something will go wrong or something will crash," concedes Rebecca Woodcock, who launched a company that tracks medical bills at Disrupt SF 2011, "but you need to focus on your presentation and telling the story of the product you've built."[107] Strategies for effective storytelling in fact function as key facets of the trainings provided by incubators and accelerators, institutes that provide founders with support and seed capital in exchange for equity. These programs regularly focus not only on technological development and business strategy but also, especially, on presentation skills; many such programs structure their training around preparation for a "Demo Day," held at the end of the program. If a startup incubator is, as

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[106] The staging device extends beyond Apple and TechCrunch; CES keynotes likewise employ presenter-facing monitors. The practice likely extends to large conventions organized in other sectors as well, such as political conventions, though I have not done that research; when I've attended annual meetings of academic and legal professional societies, no such device is employed. A fuller study should look not just at professional norms but also at the impact of convention size and organizational budget on the theatrical elements of conference presentations.

[107] Rebecca Woodcock quoted in Prince, "What It's Like to Launch at TechCrunch Disrupt."

the *New York Times* once put it, "a sleep-away camp for start-up companies,"[108] Demo Day is the entrepreneurial equivalent of the skits that campers stage for parents at the end of the summer. Consisting of celebratory capstone performances, the goal of Demo Day is for participants to win seed funding from an invited audience of venture capitalists—or at least, to gain experience onstage, in preparation for any pitch-off competitions participants will enter in the future.

Not coincidentally, when the Disrupt SF 2015 program included an interview with the creators of the *Bazillion Dollar Club*, a reality show about a startup training program set to premier that fall, they showed audiences a promotional video that began with a pitch-off training session. To prepare for Demo Day, participants receive training in the mechanics of speaking into a microphone ("Eat the fucking mic!" says angel investor and series creator Dave McLure, "Uncomfortably close to the mic, I sound tall and sexy!") to strategies for staying focused when something goes awry (McClure throws yoga balls at participants as they pitch).[109] Yoga balls

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[108] Nathaniel Rich, "Silicon Valley's Start-Up Machine," *The New York Times*, May 2, 2013, sec. Magazine, http://www.nytimes.com/2013/05/05/magazine/y-combinator-silicon-valleys-start-up-machine.html.

[109] Brady Forrest and Dave McClure, "Inside the *Bazillion Dollar Club* with Brady Forrest and Dave McClure" (Disrupt SF, San Francisco, September 23, 2015). Following the pitch practice session, the promo inadvertently wades into the topic of the social politics of tech work, here focused on gender: it follows a pair of young male founders as they race to finalize a product prototype before Demo Day. Unsure what shape they should give their voice-activated audio speaker, a device that will control smart appliances, they meet with a team of designers to view mock-up illustrations. Because the team is comprised entirely of men, they invite three women from elsewhere in the office to come give their opinion, as women. Unbeknownst to the women, the men have announced their preference for a rod-shaped speaker model moments before; the women prefer a spherical design. When they leave, the lead designer deems the women's preference "a little bit more comfortable, a little bit more homey, more minimal," then disregards it because, "the majority of these products are purchased by men." Bracketing questions about the gender essentialism of product design, the absence of women on the design team, and whether designers who took women's preferences seriously might sell more products to women, the segment is remarkable for its total lack of self-awareness. Without any hint of innuendo (unless it was edited out for television?) one of the founders tells the camera in a post-meeting

may or may not be standard training practice when reality TV cameras aren't around, but when I interviewed the winner of a CES startup competition about an experience he'd had at an incubator, he told me that practicing various kinds of pitches was "the whole thing." He stressed the importance of mastering different forms of pitches, from those that last under a minute (designed for an elevator—or for people passing by an expo hall stall) to those that last up to ten or fifteen (as when presenting to venture capitalists in a private meeting), as well as strategies for presenting to a small group versus large presentations in front of a convention audience.

In terms of content, the pitch-off presentation follows a highly codified dramatic arc, suggested by the Agrilyst presentation: state a problem with no solution and then introduce a new technology that solves it. At Disrupt SF 2015, for instance, EasyPaint founder Marty Cornish began his pitch with "a romantic comedy gone wrong." Tracy, a member of EasyPaint's founding team and an interior designer has no reliable method for finding house painters, whereas Alex, a painting contractor, has difficulty finding customers. He then demoed the EasyPaint web and mobile interface, which links painters with people who need them.[110] Other startups likewise described their products as meeting a personal need: Yoni Ofir, founder of Leaf, the cannabis hardware company, explained that, as a medical marijuana user, he was intrigued by the ability to grow his own plants, but doing so requires intricate knowledge and specialized space, so he built a large box that auto-grows cannabis plants.[111] Others rooted their technologies in still more personal narratives of overcoming: Lindsay Jurist-Rosner began her presentation with a picture of her mother, a retired teacher with multiple sclerosis, and then

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confessional, "What the women like is so different from what we're thinking. We're like, let's get this really cool rod-like thing, and stick it all over the place."

[110] Matt Cornish, "EasyPaint" (Disrupt SF, San Francisco, September 21, 2015).

[111] Ofir, "Leaf."

introduced Wellthy, a platform that helps patients with chronic illnesses manage their care.[112] These narratives suggest an authorizing logic, where founders present not only their technical or business acumen, but their own stories as compelling ways to situate their products.

Not every company, of course, is born out of a founder's personal need. About half the contestants at the Battlefield that I attended still introduced their products through singular protagonists, archetypal users like Tom the pepper farmer. Other use-case personifications introduced over the course of the Battlefield included "Susie," who wants a divorce but can't afford a lawyer (Separate.us helps divorce petitioners manage their own filings); "Scott," who needs medical information but sees multiple doctors (Stitch streamlines communication between healthcare providers); and "Kendall," who loves art and manicures but can't get custom images printed on her fingernails (Preemadonna prints custom images on user's fingernails).[113] These narratives succinctly situate each technology's intended cultural significance as a foundation upon which to understand the demos that followed. Even the names assigned to the archetypal characters are revealing: Susie, with its hints of 1950's North American normalcy, assuages the scandal of technologically enabled divorce; "Scott" suggests a generic everyman, even as it betrays gendered and ethnic dimensions of industry norms; "Kendall" evokes a tween girl who, the presentation continued, "adores Taylor Swift," and "sends around 30 snaps a day."[114] These

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[112] Lindsay Jurist-Rosner, "Wellthy" (Disrupt SF, San Francisco, September 22, 2015).

[113] Sandro Tuzzo, "Separate.us" (Disrupt SF, San Francisco, September 22, 2015); Kilaru Bharat and Jonathan Weinstein, "Stitch" (Disrupt SF, San Francisco, September 21, 2015); Pree Walia, "Preemadonna" (Disrupt SF, San Francisco, September 22, 2015).

[114] Walia, "Preemadonna." These descriptions are included in a longer report on the archetypal use-case narrative device, detailed in a blog post I published after the show. See Li Cornfeld, "Disrupt San Francisco: TechCrunch Puts Startups Onstage," *Antenna*, September 30, 2015, http://blog.commarts.wisc.edu/2015/09/30/disrupt-san-francisco-techcrunch-puts-startups-onstage/.

presentations create mini-vignettes that give presentations a simple dramatic arc and help make each presentation memorable, while also signaling a product's potential market value. That names coded as white signal a larger market, or at least a more neutral one, than do names coded as non-white likely accounts for the absence of "ethnic" names in Battlefield use cases—even, or perhaps especially, for use-cases introduced by non-white founders. Names assigned to use case characters are thus one indication of the populations that investors are presumed to consider valuable.

The fictional characters that help audiences envision product users occasionally filter into the judges' remarks following presentations. "Loves Taylor Swift? Sends 30 snaps a day?" asked Hunter Walk, of the Homebrew venture firm, after the Preemadonna pitch. "I might be your Kendall."[115] The remark drew a laugh from the audience and something of a forced chuckle from the Preemadonna founders, who were perhaps unsure whether his quip challenged their narrowly defined user group or reinforced it. Or else, it was the kind of laugh that happens when someone making a joke holds a lot of power over the people to whom he makes it—a perpetual dynamic of post-pitch Q&A sessions, which judges tend to approach as relaxed chats in front of an audience, while contestants look as though they are being given oral examinations in front of the industry. Throughout the Q&A, judges stay seated in their armchairs, splayed in front of the audience on an angle, while contestants stand before them, in profile to the audience, and both groups try to ignore the onstage cameramen weaving in between them. A visual display of power that is at times deeply awkward, the arrangement suggests unexpected points of symmetry between "viewpoints," the method of evocative stage composition developed by Anne Bogart,

[115] Hunter Walk during QA of Walia, "Preemadonna."

and TV cringe comedy.[116] Its echoes of these traditions show how a business interview, through staging, becomes a ritual of performance and entertainment.

While the Battlefield is largely celebrated within the industry as a site of revelation and excitement, its theatricality occasionally raises eyebrows. Walk gestures toward such misgivings in his endorsement of the Battlefield in *TechCrunch* promotional materials, where he praises the organizers for finding contestants who have "not just flashy demos, but substance underneath."[117] Even as his testimonial insists that a good presentation, in the eyes of a judge, requires a quality startup, it acknowledges a pitch-off presentation's requisite flair. By contrast, in a rare critique of the pitch-off genre, Ross Baird, CEO of the Village Capital venture firm, finds the pitch-off's conflation of style and substance untenable. "If you're caught up in the theater of it," Baird cautions investors, "you may not be making the best decisions on who to follow up with after the event," because, "the format privileges the ones who pitch well, rather than the ones who have the highest potential."[118] Like Walk's insistence on a balance of substance and

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[116] Both viewpoints and cringe comedy are centered on creating dynamism out of the live encounter, the former primarily for performers and the latter for audiences. "*The Viewpoints* are a philosophy of movement translated into a technique for 1) training performers and 2) creating movement onstage," writes Tina Landau, with whom Bogart developed the method. "Anne can look at the stage, notice the spacing is cluttered, say to the actors 'Spatial Relationship,' and they will adjust accordingly in order to create a more 'readable' stage picture." Meanwhile cringe comedy, which emerged as a popular sitcom style in the early 2000s, creates humor by filming what Jason Middleton calls "moments when an encounter feels *too* real: unscripted, unplanned, and above all, occurring in person" which he (somewhat redundantly) describes as "too unmediated and immediate." See Tina Landau, "Source-Work, the Viewpoints, and Composition: What Are They?," in *Anne Bogart: Viewpoints*, ed. Michael Bigelow Dixon and Joel A. Smith (Lyme, NH: Smith & Kraus, 1995), 20; 25; Jason Middleton, *Documentary's Awkward Turn: Cringe Comedy and Media Spectatorship* (New York: Routledge, 2013), 2–3. Original emphases.

[117] Hunter Walk quoted in Wood, "About Startup Battlefield."

[118] Ross Baird, "Why This Investor Is Ditching Demo Days," *TechCrunch*, March 4, 2017, http://social.techcrunch.com/2017/03/04/why-were-ditching-demo-days/.

flash, Baird's concerns bespeak what Davis and Postlewait identify as longstanding suspicion that "the theatre reveals an excessive quality that is showy, deceptive, exaggerated, artificial, or affected," concerns espoused by adherents of wide-ranging critical traditions, from Plato to the Puritans.[119] At Disrupt, a "perfect theater for people who love startups," the theatricality of the event is intended not as aesthetic artifice but as a presentational mode of conveying information to an assembled audience and as a site of collectivity among dispersed members of an industry. However, the industrial audiences of these events are (like all audiences) particular. "Theatricality," argues Féral, "cannot *be*, it must be *for* someone."[120] The next section turns attention to the inclusions and exclusions of the tech world that fills the theatre of Disrupt.

Anyone who looks like Zuckerberg:
Inclusion and exclusion in startup performance culture

Disrupt is widely regarded as a premier tech industry event, "where startups start," however neither "tech" nor "startup" is a particularly stable term. Rather, they take shape through a complex set of economic shifts and cultural articulations. As a conference site, Disrupt is one such site where these articulations take place, engendering a sense of belonging and identification among those present in the room. If live performance "works," as Dolan argues, by creating unity among people in the same room at the same time, then *who* is in the room is a crucial part of a performance's efficacy.[121]

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[119] Davis and Postlewait, eds., "Theatricality: An Introduction," 5.

[120] Josette Féral, "Performance and Theatricality: The Subject Demystified," trans. Terese Lyons, *Modern Drama* 25, no. 1 (1982): 178, doi:10.1353/mdr.1982.0036. Original emphasis.

[121] Dolan, "Performance, Utopia, and the 'Utopian Performative,'" 458.

Attention to questions of inclusion at Disrupt brings us back to the notion of conferences as sites of public formation and Snoop Dogg's launch of Mary Jane. Introducing Mary Jane, Snoop and Chung took care to make the room feel included in their product. Chung invited the audience to join the site as beta users while Snoop encouraged smokers in the audience to out themselves, and modeled doing so: "I'm a smoker. My name is Snoop, and I'm a stoner." Still, when *TechCrunch* editor Jordan Crook, who hosted the session, asked for a show of hands from those in the audience who enjoyed smoking marijuana ("be proud!"), she got a tepid response, despite her encouragement. Faced with a seemingly unenthusiastic house, Snoop, a consummate performer, was unfazed. "It's okay, it's okay," he said, and raised his fist in solidarity. "We're going to make a way to get y'all out of that closet."[122]

When Snoop first introduced the rhetoric of "coming out," he got a surprised, delighted laugh from Crook, onstage beside him, but failed to elicit much of a reaction from the packed auditorium. Maybe Crook responded because, as host of the session, her job required her to have an engaged presence—or maybe she laughed because, as a queer person, she felt "in" on the bit. The audience, taken as a whole, did not have a similar laugh of collective recognition. While the friend who came with me to Disrupt and I were far from the only queer attendees at the convention (there were, after all, 5,000 people there), Silicon Valley has an uneven track record when it comes to acceptance of sexual diversity. A tech blog that recently cheered 2016 as "the best time to be gay in Silicon Valley," predicting the impending erosion of "an entrenched bro-culture that can create spaces that are uncomfortable for LGBT people," began by asking readers

[122] Dogg and Chung (with Crook), "A New Perspective on Culture and Industry with Snoop Dogg and Ted Chung."

a rhetorical question: "can you name one flamboyantly open gay man in the startup scene?"[123] Perhaps unwittingly, the blog echoed a *Gawker* post from nearly a decade earlier, which controversially outed venture capitalist Peter Thiel: "How many out gay VCs do you know?"[124] The social similarities between these two groups, of course, are linked. As *Gawker* put it, "The clubby ranks of VCs are mostly straight, white and male. They instinctively prefer entrepreneurs who remind them of themselves."[125] If the Disrupt audience lacked a queer sensibility, consider that it was comprised largely of startup founders and venture capitalists.

Not a lot of data exists on the social distribution of venture capital in general, and still less on whether and how sexuality factors into its allocation. However, statistical research at least partly confirms *Gawker*'s suspicions. As the number of venture capital firms expanded at the end of the twentieth century, the percentage of female venture capitalists declined, which researchers link to a paucity of women owned-businesses securing venture capital.[126] In 2016, a higher percentage of all U.S. venture capital deals went to companies led by women than at any point in

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[123] Zara Stone, "Why 2016 Is The Best Time to Be Gay in Silicon Valley," *The Hustle*, January 11, 2016, https://thehustle.co/the-best-time-to-be-gay-in-silicon-valley.

[124] Owen Thomas, "Peter Thiel Is Totally Gay, People," *Gawker*, December 19, 2007, http://gawker.com/335894/peter-thiel-is-totally-gay-people.

[125] Ibid.

[126] Candida G. Brush et al., "Gatekeepers of Venture Growth: A Diana Project Report on the Role and Participation of Women in the Venture Capital Industry," SSRN Scholarly Paper (Rochester, NY: Social Science Research Network, 2004), 6; 18, https://papers.ssrn.com/abstract=1260385. More recent research seems to call into question this study's contention that female venture capitalists are more likely to support female founders. See Alison Wood Brooks et al., "Investors Prefer Entrepreneurial Ventures Pitched by Attractive Men," *Proceedings of the National Academy of Sciences* 111, no. 12 (March 25, 2014): 4427–31, doi:10.1073/pnas.1321202111. However, the authors of the Brooks study cite the Brush study, and do not explicitly suggest that their research reverses this finding.

recent history: just under 5%.[127] When studies account for race as well as gender, the statistics are still more dire. Although black women own 1.5 million U.S. businesses (a 322% increase since 1997), startups founded by black women accounted for less than 1% of all venture capital deals made in the U.S. between 2012 and 2014.[128] Moreover, social inequity in the distribution of funding for startups extends into valuation: black women who successfully landed deals did so at an average funding amount of $36,000—just 6% of the $600,000 that the Y Combinator startup accelerator pegs as a standard amount of seed funding raised during a typical startup's first round of investment.[129]

Such intersectional analysis is unusual in research on startup funding, which, when it attends to social diversity at all, variously accounts for gender or occasionally race. Other intersectional dimensions, such as sexuality, ability, or age, are rarely if ever analyzed, either singularly or in connection to each other. What audits exist support a larger narrative, shaped by reports from those who work in the field, of a work culture where women and minorities are regularly sidelined.[130] Critics link the homogeneity of the tech workforce to a spate of recent

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[127] Valentina Zarya, "Venture Capital's Funding Gender Gap Is Actually Getting Worse," *Fortune*, March 13, 2017, http://fortune.com/2017/03/13/female-founders-venture-capital/.

[128] Kathryn Finney, "The Real Unicorns of Tech: Black Women Founders" (Atlanta: Digital Undivided, 2016).

[129] Finney, "The Real Unicorns of Tech: Black Women Founders"; Geoff Ralston, "A Guide to Seed Fundraising," *Y Combinator*, January 7, 2016, https://blog.ycombinator.com/how-to-raise-a-seed-round/: "There is enormous variation in the amount of money raised by companies. Here we are concerned with early raises, which usually range from a few hundreds of thousands of dollars up to two million dollars. Most first rounds seem to cluster around $600,000 dollars, but largely thanks to increased interest from investors in seed, these rounds have been increasing in size over the last several rounds."

[130] Susan J. Fowler, "Reflecting on One Very, Very Strange Year at Uber," *Susan J. Fowler*, February 9, 2017, https://www.susanjfowler.com/blog/2017/2/19/reflecting-on-one-very-strange-year-at-uber; Leigha Mitchell, "I'm a Woman in Tech, and This Is What I Want in a Company,"

products that fail to account for diverse users, from smartphones awkwardly sized for women's hands to photo software that improperly tags people of color.[131] However, Katherine Finney, who authored the study on black female founders as part of an initiative to support women of color in tech, argues that, "the industry sees diversity and inclusion primarily as a human resource issue, but not a market opportunity."[132] Because most such research is undertaken not as part of projects devoted to enhancing diversity and inclusion but by industry analysts devoted to assessing market trends in technology, this relative inattention to social diversity reflects its failure to resonate as a central aspect of funding models.

A further challenge to statistical analysis of startup culture comes from lack of industrial consensus over precisely what kinds of companies should be included in startup roundups. In other words, controversy over what, and who, to include in startup culture exists at the level of company categorization, an issue linked to the lack of social inclusivity in startup culture, but

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Code Like A Girl, April 19, 2017, https://code.likeagirl.io/i-am-a-woman-in-tech-and-this-is-what-i-want-in-a-company-f6177569a287; Anonymous Author, "Building Better Tech Cultures for People with ADHD," *Model View Culture*, August 15, 2016, https://modelviewculture.com/pieces/building-better-tech-cultures-for-people-with-adhd; Eric M. Ruiz, "I'm a Latino in Tech, and I Think the 'Diversity' Discussion Is Utterly Broken," *The Observer*, October 31, 2016, http://observer.com/2016/10/lets-be-honest-we-have-no-idea-what-diversity-means/; Mark S. Luckie, "What It's Actually Like to Be a Black Employee at a Tech Company," *Medium*, September 15, 2015, https://medium.com/@marksluckie/what-it-s-actually-like-to-be-a-black-employee-at-a-tech-company-e32bb222818b; Shaft, "Thoughts on Diversity Part 2. Why Diversity Is Difficult.," *Medium*, November 3, 2015, https://medium.com/tech-diversity-files/thought-on-diversity-part-2-why-diversity-is-difficult-3dfd552fa1f7.

[131] Zeynep Tufekci, "It's a Man's Phone," Medium, *Technology and Society*, (November 4, 2013), https://medium.com/technology-and-society/its-a-mans-phone-a26c6bee1b69; Mike Ananny and Kate Crawford, "Seeing Without Knowing: Limitations of the Transparency Ideal and Its Application to Algorithmic Accountability," *New Media & Society*, December 13, 2016, 1461444816676645, doi:10.1177/1461444816676645.

[132] Kathryn Finney quoted in Davey Alba, "It's Embarrassing How Few Black Female Founders Get Funded," *WIRED*, February 10, 2016, https://www.wired.com/2016/02/its-embarrassing-how-few-black-female-founders-get-funded/.

also separate from it. For the purposes of ticketing, Disrupt defines "later stage startups" as those that are more than two years old; only newer startups are eligible for exhibition in Startup Alley.[133] When a company loses its startup status altogether is unclear. "Is it a test of profitability? Age? Management Structure?" asks *TechCrunch* reporter Alex Wilhelm, who, upon polling venture capitalists and Twitter followers, received answers related, separately, to each metric.[134] Although not uniformly accepted by the industry, Willhelm proposes defining startups according to a "50, 100 or 500 rule," which holds that a company ceases to be a startup once it has either a "$50 million revenue run rate (forward 12 months); 100 or more employees; [or is] worth more than $500 million, on paper or otherwise."[135] These guidelines, helpful for assessing the endpoint of a successful startup, raise a larger question: what constitutes a startup in the first place? Or, put a different way, what distinguishes a startup from any other kind of commercial enterprise?

Parsing the distinction between a startup and a small business, Mandela Schumacher-Hodge of Kapor Capital looks to intent: "a founder launching a startup *intends* to grow her/his business as big and as fast possible; whereas a founder of a small business *intends* to grow his/her business within particular limits that he/she is comfortable committing to."[136] Scalability models help account for how startup culture, in both popular and industry discourses, has

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[133] TechCrunch, "Disrupt SF 2017: TechCrunch's Iconic Startup and Thought Leadership Event," *TechCrunch*, accessed June 5, 2017, http://techcrunch.com/event-info/disrupt-sf-2017/.

[134] Alex Wilhelm, "What The Hell Is A Startup Anyway?," *TechCrunch*, December 30, 2014, http://social.techcrunch.com/2014/12/30/what-the-hell-is-a-startup-anyway/.

[135] Ibid.

[136] Mandela Schumacher-Hodge, "You Think You're a Startup, But You're Really a Small Business (and That's Totally Cool Too)," *The Startup*, July 30, 2015, https://medium.com/swlh/you-think-you-re-a-startup-but-you-re-really-a-small-business-and-that-s-totally-cool-too-cd45ff80e6be#d874. Original emphasis.

become nearly synonymous with tech culture. More so than, say, a brick and mortar storefront, digital technologies carry a promise of unencumbered growth—aided, of course, by the eagerness of venture capitalists to pour money into their development. At the same time, the cultural cache and financial valuation ascribed to startups and tech companies alike has led a range of enterprises to describe themselves as such. In the same way that companies continue to cling to the startup label long after exceeding the 50/100/500 rule (AirBnB, valued at $30 billion, calls itself a startup), so too do a broad range of enterprises just getting off the ground affix the label to their ventures. In selecting "The Hottest Startups of 2013," *Forbes* sifted through "organizations from real estate agents to nonprofits calling themselves startups because of the lure of innovation attached," and surmised that "to be a startup is to claim a freshness that suggests a finger on the pulse of the future."[137] Eschewing size or financial measures, founders profiled by the publication variously defined "startup" as innovative ("no matter what it is, it has to have not existed before"[138]), psychological ("a mentality"[139] or "a state of mind"[140]) and

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[137] Natalie Robehmed, "What Is A Startup?," *Forbes*, December 16, 2013, https://www.forbes.com/sites/natalierobehmed/2013/12/16/what-is-a-startup/.

[138] Ayah Bdeir, quoted in Natalie Robehmed, "Ayah Bdeir, Founder of littleBits," *Forbes*, December 16, 2013, https://www.forbes.com/pictures/emjl45hjge/ayah-bdeir-founder-of-littlebits/.

[139] Mathew Salzberg, quoted in Natalie Robehmed, "Matthew Salzberg, Cofounder of Blue Apron," *Forbes*, December 16, 2013, https://www.forbes.com/pictures/emjl45hjge/matthew-salzberg-cofounder-of-blue-apron/.

[140] Adora Cheung, quoted in Natalie Robehmed, "Adora Cheung, Cofounder of Homejoy," *Forbes*, December 16, 2013, https://www.forbes.com/pictures/emjl45hjge/adora-cheung-left-cofounder-of-homejoy/.

affective ("an emotion"[141] or "hope"[142]). In terms of pitch-off competitions, these characteristics become stage directions. More than mere industry mythology, presenting big ideas with conviction and optimism articulates a company as a startup and therefore as belonging to the ranks of companies whom venture capitalists consider supporting.

At the same time, these attributes are very much part of the mythology of startup culture. Ingenuity, confidence, and desire are hardly unique to entrepreneurs, let alone to self-described startup founders. Given the wild under-representation of women and people of color in startup culture, however, there is a particular irony to the latter distinction: startup business models have roots in marginalized communities. "Entrepreneurship was borne out of a need for economic survival," argues Kara Melton, who looks to twentieth century business strategies developed by women and people of color, barred from entry into corporate workforces, as unacknowledged precursors of today's startup practices.[143] Melton's insightful analysis shows how the very designation "startup" serves in part as a way of placing distance between founders and histories of undervalued "businesses and industries that white workers found undesirable."[144] Paul

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[141] J Sider, quoted in Natalie Robehmed, "J Sider, CEO and Cofounder BandPage," *Forbes*, December 16, 2013, https://www.forbes.com/pictures/emjl45hjge/j-sider-ceo-and-cofounder-bandpage/.

[142] Edward Saatchi, quoted in Natalie Robehmed, "Edward Saatchi, Cofounder of National Field," *Forbes*, December 16, 2013, https://www.forbes.com/pictures/emjl45hjge/edward-saatchi-cofounder-national-field/.

[143] Kara Melton, "How Tech Business Models Come From Marginalized Communities, But Startups Are Still Mostly White," *Model View Culture*, February 22, 2016, https://modelviewculture.com/pieces/how-tech-business-models-come-from-marginalized-communities-but-startups-are-still-mostly-white.

[144] Ibid.

Graham, founder of the Y Combinator accelerator, makes this maneuver explicit. "Not every newly founded company is a startup," he explains, rather, "most are service businesses."[145]

Graham distinguishes the startup economy from the service economy in order to illustrate scalability in startup business models.[146] Like Schumacher-Hodge, Graham sees capacity for exponential growth as a startup's defining characteristic. While he surely did not intend to reject a startup lineage in the labor histories of the very populations regularly excluded from venture deals, it's worth noting that Y Combinator only began making strides to improve diversity among the cohorts of founders it supports after the conclusion of Graham's tenure as director.[147] Perhaps the most prestigious accelerator in the world, Y Combinator has faced backlash since at least 2013, when Graham told the *New York Times* that he could be "tricked" into backing "anyone who looks like Mark Zuckerberg."[148] Graham would later insist he was joking, which would be a more credible defense against the ensuing accusations of racism and misogyny had he not equated people taking his words at face value with members of the "birther" movement refusing to believe that President Obama was born in the United States. Graham explained that he was posting a clarification to his website – "the statement was a joke" – so that going forward, when he found anyone repeating the quote, he would have "proof that either (a) they didn't do

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[145] Paul Graham, "Startup = Growth," September 2012, http://www.paulgraham.com/growth.html.

[146] Ibid. "A barbershop isn't designed to grow fast. Whereas a search engine, for example, is…startups are different by nature, in the same way a redwood seedling has a different destiny from a bean sprout."

[147] Megan Rose Dickey, "Y Combinator's Quest for Diversity," *TechCrunch*, March 20, 2017, http://social.techcrunch.com/2017/03/20/y-combinator-diversity-2017/.

[148] Paul Graham quoted in Rich, "Silicon Valley's Start-Up Machine."

their research or (b) they have an ideological axe to grind."[149] His defense neatly demonstrates the neoliberalism and libertarianism pervasive in much tech industry thought: it flatly rejects grotesque forms of racism while failing to take responsibility for systemic racism and unconscious bias.

A complex set of barriers contributes to lack of diversity in tech employment, ranging from access to STEM education to hiring criteria that prioritizes "culture fit."[150] Despite a host of diversity initiatives (Lesbians Who Code, Black Girls CODE, People of Color in Tech), a recent audit documents the persistence of the tech industry's homogeneity, particularly in the United States, where black and Latinx adults, who account for 30% of the population, make up just 15% of the tech industry; where 75% of employees are male; and where employees quit as a result of discrimination more frequently than in other industries.[151] However, the "performance culture" of contemporary institutions, argues Sara Ahmed, has come to incorporate "consequences of race equality,"[152] such that nearly every major tech company, including Apple, Intel, Microsoft,

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[149] Paul Graham, "I can be tricked by anyone who looks like Mark Zuckerberg.," *PaulGraham.com*, November 2014, http://www.paulgraham.com/tricked.html. (In repeating the quote here, I am, obviously, guilty as charged.)

[150] Stacy-Ann A. Allen-Ramdial and Andrew G. Campbell, "Reimagining the Pipeline: Advancing STEM Diversity, Persistence, and Success," *BioScience* 64, no. 7 (July 1, 2014): 612–18, doi:10.1093/biosci/biu076; Lorelle Espinosa, "Pipelines and Pathways: Women of Color in Undergraduate STEM Majors and the College Experiences That Contribute to Persistence," *Harvard Educational Review* 81, no. 2 (June 1, 2011): 209–41, doi:10.17763/haer.81.2.92315ww157656k3u; Katherine Reynolds Lewis, "How 'Culture Fit' Can Be a Shield for Hiring Discrimination," *Fortune*, December 7, 2015, http://fortune.com/2015/12/07/culture-fit-hiring-discrimination/; Gill, "Cool, Creative and Egalitarian?"

[151] Allison Scott, Freada Kapor Klein, and Uriridiakoghene Onovakpuri, "Tech Leavers Study" (Oakland: Kapor Center for Social Impact, April 27, 2017).

[152] Sara Ahmed, *On Being Included: Racism and Diversity in Institutional Life* (Durham: Duke University Press, 2012), 84, http://public.eblib.com/choice/publicfullrecord.aspx?p=1173269.

Google, and Facebook, have launched diversity initiatives in recent years. In 2016, *TechCrunch* itself adopted such an initiative, which, to parallel "Disrupt," is dubbed "Include." A multi-pronged effort, the mission of Include consists of expanding *TechCrunch*'s editorial coverage of diversity issues, in addition to implementing systems that track the demographic makeup of its own editorial staff as well as Disrupt speakers and Battlefield contestants (what Ahmed calls performance culture's "procedures, materials, and methods") and increasing the percentage of under-represented groups onstage at events (the "theatrical sense" of performance culture).[153]

Neither of these practices, however imperfect, have trickled down to the performance culture of startups. Following Finney's contention that the tech world views diversity and inclusion as strictly a "human resource issue," one aspect of the tech's diversity issue stems from the fact that small startups, just getting off the ground, tend not to have the human resource departments, or policies, of bigger companies. A 2016 survey of over 700 startups found that just 14% had strategies in place for promoting diversity or inclusion; relatedly, 61% either mostly or exclusively employed men, the same percentage that reported all-male boards.[154] If at least some of these companies will eventually be acquired by larger companies or grow into sizable corporations in their own right, the industry's struggles to diversify will continue.

Just as the startup world lacks methodological emphasis on tracking diversity, it also lacks theatrical attention to its appearance. Instead, the performance culture of startups centers on something very different: a performative normcore masculinity. Recall, for instance, the iterations of t-shirts, blazers, and hoodies worn by the finalists of the Startup Battlefield in San

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[153] TechCrunch, "TechCrunch Include: Mission and Board," *TechCrunch*, accessed May 31, 2017, http://social.techcrunch.com/include/mission-statement/; Ahmed, *On Being Included*, 84–85.

[154] First Round Capital, "State of Startups 2016" (San Francisco: First Round Capital, 2016), http://stateofstartups.firstround.com/2016/#complete-results-diversity-inclusion.

Francisco 2013, outfits meant to signal the contestants' belonging in the industry through their embrace of its sartorial norms. "If you show up to a VC pitch on Sand Hill Road wearing a suit, you'd look out of place," cautions startup founder Zack Fisch, who describes "the look of horror when the three-piece recognizes they're floating in a sea of v-necks." Fisch prefaces his fashion-focused blog post by explaining that he is "not a fashion blogger" and doesn't "read fashion articles," a disclaimer that recalls Arrington's insistence that although he writes news articles, he is not a journalist.[155] These rhetorical devices bespeak a standard tech industry maneuver of subsuming the practices of other industries without regard for their norms. In Fisch's case, it also distances tech expertise from feminine knowledge (where "fashion bloggers" are coded as female), a casual sexism that his fashion advice compounds. Despite the gender-neutral pronoun Fisch ascribes to "the three piece," the outfits that concern him ("shorts are almost always easier to put on than cufflinks") coupled with the care he takes to distance himself from so-called fashionistas fail to imagine a place for femininity in the tech scene's presentational paradigms.[156]

In a classic Bourdieuean inversion of cultural capital, Fisch specifically contrasts working at a tech company with working at a law firm: he argues that lawyers wear suits because the legal profession "prides itself on appearance (and degrees)," whereas in tech, "output and quality trump all."[157] And yet, Fisch prides himself not on a rejection of appearance but on the substitution of an alternate aesthetic. "The dispositions associated with a certain social origin are specified by being enacted in structurally marked practices," argues Bourdieu, and, moreover,

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[155] Zack Fisch, "T-Shirts And Tech: Solving The Sartorial Equation," *TechCrunch*, October 9, 2015, http://social.techcrunch.com/2015/10/09/t-shirts-and-the-casualness-of-tech/.

[156] Ibid.

[157] Ibid. This conclusion, in the context of a blog post on the significance of fashion in the tech sector, constitutes a logical fallacy so basic that it suggests the merits of law school.

"the same dispositions lead to opposite aesthetic or political positions, depending on the state of the field in relation to which they express themselves."[158] Thus, Fisch prescribes a highly particularized aesthetic for aspiring entrepreneurs, even as he declares tech "a strict meritocracy" where all that matters is "the quality of the work you do."[159] That he makes this argument while suggesting that "looking out of place," can keep a founder from securing venture capital in fact implies that in tech, as elsewhere, evaluation of merit hinges at least in part on self-presentation, no matter how neutral its adherents believe the codes of presentation to be.[160]

The emergence of presentational performance as a key means of evaluating a startup's potential for success poses challenges for founders from underrepresented groups, who don't easily fit within the tech industry's imaginary of technological or entrepreneurial authority. At Disrupt SF 2015, Bri James and Schery Mitchell-James, mother-daughter founders of Scrumpt, a school lunch subscription service, were the only black women in the Battlefield, and also the only team asked, during the Q&A, to name their "entrepreneurial heroes," that is, companies they "admire" in their product category.[161] While some of the other contestants were likewise asked to list established companies in their sectors, the phrasing of this particular question perhaps more directly situated the Scrumpt team as ingénues lacking in seniority. Age perhaps partly accounts for this; Mitchell-James, a pediatrician, mostly acted onstage in a support role for her daughter, who delivered the presentation and answered questions during the Q&A; the

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[158] Bourdieu, *The Field of Cultural Production*, 70–71.

[159] Ibid.

[160] Ibid.

[161] Bri James, "Scrumpt" (Disrupt SF, San Francisco, September 21, 2015).

question was primarily directed to the younger member of the pair. However, the young men who competed in the Battlefield were not similarly asked whether they looked up to anyone.

A groundbreaking study of pitch-offs and gender, conducted in 2014 by Brooks et al, found that research participants opted to invest in video pitches narrated by men at more than twice the rate of identical scripts narrated by women.[162] Live pitch-off competitions at tech events analyzed by the authors bore out the experiment's findings: across three competitions, researchers found that male contestants were 60% more likely to be successful.[163] On the one hand, the high success rate of male founders at these competitions may result from what the authors call "rational statistical discrimination by investors," which leads them to favor "male-led ventures that other investors and future customers are most likely to prefer."[164] Such thinking, of course, compounds and continues the broader cultural practices to which they respond, what *Gawker* called "prejudice with a handy alibi."[165] It also ignores recent research that concludes female founders outperform their male peers.[166] Still, under this scenario, investor preference for male founders is explained not by implicit bias but explicit calculation.

On the other hand, when it comes to the selection of pitch-off winners, judges may be guided by something of a combination of bias and calculation, what Baird, the angel investor critical of pitch-offs, refers to as the "quick heuristics" that investors utilize when confronted

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[162] Brooks et al., "Investors Prefer Entrepreneurial Ventures Pitched by Attractive Men," 4429. Interestingly (and counter to Brush et all), participant gender had no effect on investment decisions.

[163] Ibid., 4428. The study does not reference any non-binary gender entrepreneurs.

[164] Ibid., 4427.

[165] Thomas, "Peter Thiel Is Totally Gay, People."

[166] First Round Capital, "First Round 10 Year Project" (San Francisco: First Round Capital, 2015), http://10years.firstround.com/.

with "an onslaught of knowledge" across a slew of presentations.[167] In other words, given only six minutes to learn about a company, investors draw conclusions based on the stylistics of presentation, which necessarily include performances of identity.[168] Baird thus objects to these events not only out of distrust of theatricality but because "they aggravate blind spots that investors already face," damaging the prospects of not only under-represented entrepreneurs but also investors who stand to make money by investing in them, stymying industrial growth more broadly, and perpetuating the homogeneity of the industry.[169]

However, a provocative aspect of Brooks et al's findings suggests something more complex than a venture capital iteration of the widely documented (if outrageous) discrimination that women face across a range of professional environments. The best predictor of pitch-off success, at the tech events analyzed by the study, was not gender alone, but male physical attractiveness.[170] That is, physically attractive men were more likely to be successful in startup competitions than were their less attractive counterparts, while for female competitors, physical attractiveness had no effect on their success.[171] This phenomenon merits greater analysis than fits within either the scope of the Brooks study or within this dissertation (although the next chapter will look more closely at the standards of physical appearance for women at tech conferences). However, given that pitch-off competitions, as I have argued, are in part contests to determine

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[167] Baird, "Why This Investor Is Ditching Demo Days." Bair relies on Brooks et al's findings to support his critique.

[168] Even this rare critique of the presentationalism in tech business cultures has precedents in artistic performance cultures. For a analysis of "blind" auditions in classical music, see Jessica Holmes, *Music at the Margins of Sense*, forthcoming.

[169] Baird, "Why This Investor Is Ditching Demo Days."

[170] Brooks et al., "Investors Prefer Entrepreneurial Ventures Pitched by Attractive Men," 4428. Statistically, attractiveness gave male contestants a 36% edge.

[171] Ibid., 4430.

the future of the tech industry, it's worth noting that the future of the tech industry, as identified by panels of venture capitalists, is a physically attractive man. Having the right kind of appearance can determine a startup founder's success.

Beyond gender presentation, what constitutes the right kind of appearance? The authors of the Brooks study gauged physical attractiveness by asking a panel of 60 angel investors to watch video pitches and rate them according several metrics; one of the questions asked, "How physically attractive was the entrepreneur?" It then asked respondents to select a numerical value between one and seven.[172] Yet attractiveness, of course, is qualitative as well as quantitative. That particular characteristics elided by the invocation of attractiveness, such as fondness for a particular fashion aesthetic or (still more troublingly) preference for a specific ethnicity necessarily contribute to these calculations. As Katherine Hayes, founder of a cloud-based advertising startup, told the Wharton business school, she "sometimes" thinks her company would attract more venture capital were she "a 21-year-old male in a hoodie."[173]

Rather than embracing a performance culture of diversity and inclusion, the performance culture of tech startups center on "culture fit" and exclusivity. The former bespeaks a hiring practice that assumes unchallenged social dynamics lead to increased productivity; the latter signals a company whose "next big thing" demands competitive venture deals. Both maneuvers disarticulate "startup" from "small business" and the networks of women and marginalized communities who have long engaged in entrepreneurial activity outside the bounds of corporate frameworks. In that sense, a conference devoted to disruption becomes, instead, a conference

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[172] Ibid. The authors further explain: "investors were blind to the actual competition outcomes and had more than 16 y of investment experience on average."

[173] Katherine Hayes quoted in "Why VCs Aren't Funding Women-Led Startups," *Knowledge@Wharton*, May 24, 2016, http://knowledge.wharton.upenn.edu/article/vcs-arent-funding-women-led-startups/.

devoted to reconstitution. Onstage at startup competitions like Disrupt, aspiring entrepreneurs invite audiences to share in their visions of their technologies by articulating their companies, and themselves, as belonging within the frameworks of the industry. Through these acts, the industry evaluates the field's most "attractive," prospects, indicated by both the technologies on display as well as the presentational stylistics used to introduce them. The next chapter looks at still more concerted efforts to make emerging technologies appear attractive through tantalizing display.

Chapter 3:
Booth Babes and Expo Erotics

Four women stand, statuesque, on pedestals arranged in the shape of a plus sign. Hard drives by Hyper, whose logo is a plus sign, sit atop display tables on the periphery of the company's allotted exhibition space. Convention attendees mill through the booth, dressed in suit jackets or company t-shirts and jeans. The women on the pedestals wear pasties, thongs, and body paint. They hold their gaze above the crowd.

After a few minutes, a DJ turns up the music. The women break their stillness. They execute stylized, halting choreography, in time to the beat. *I don't care what you dress like*, sings Calvin Harris over the sound system, *or what you wear*. The women raise and lower their painted arms. *But please make sure, baby, you've got some colors in there*. They turn inward, facing each other. *Get some colors on*. They turn outward, facing the crowd. *Get some colors on*. Two of the women are painted in bright stripes; the other two dusted in silver and gold with Hyper's candy-colored plus signs dotted along their skin.[1]

If advertising is how capitalism says "I love you" to itself, as Michael Schudson famously put it, then the tradeshow is its come-hither look.[2] At tradeshows, as with ads, capitalist companies give their products enticing narratives. Yet where companies use advertising to target potential consumers, they use tradeshows to attract prospective business partners. Tradeshow exhibitions may borrow advertising's aesthetics, but in terms of capitalism's circulations, they

[1] Hyper TV, *CES 2013: HYPER Booth Visitors Speak* (Las Vegas, 2013), https://www.youtube.com/watch?v=5enVQnFjaAM.

[2] Michael Schudson, *Advertising, the Uneasy Persuasion: Its Dubious Impact on American Society* (New York: Basic Books, 1984), 232.

are its antecedent. At tradeshows, investors, buyers, and distributors select prototypes for commercial circulation. So where advertising, in Schudson's formulation, functions as a visual art form that reconstitutes participation in the system of capitalist consumerism, tradeshow exhibitions utilize performance art as a means of setting capitalist circulation in motion.

To entice prospective partners, as well as to lend new products an inviting narrative, many companies – particularly tech developers – hire female models, conventionally known as "booth babes," to work their tradeshow exhibitions. These women have a range of official duties: in addition to executing performance routines, like the dancers described above, they might stage demos of a new product, pose for photos with convention-goers, disseminate brochures and answer questions about a new technology, and otherwise engage prospective business partners until a full-time employee of the exhibiting company becomes available for a meeting. Each of these tasks relates to the two chief functions of booth babe labor: presenting new technologies and representing the companies that create them.

The vitality that accrues to emerging technologies through live presentation, discussed in Chapter 1, encompasses the erotic performances of tradeshow models. Unlike the wealth of attention devoted to the presentational skills of Steve Jobs, however, booth babe labor rarely merits serious industrial recognition, as the flippant colloquialism given to the work suggests. All job titles, official or not, reflect industrial ideology—perhaps nowhere more so than in the case of the term "producer." In Vicki Mayer's analysis, "the term *producer* in media organizations has been ideological, used to justify why some workers command more labor value than others."[3] In the tech world (as elsewhere) those ideologies rest in part on misogyny, skewing industrial valuation of the feminine erotics that expo labor is tasked with cultivating. However, if

[3] Vicki Mayer, *Below the Line: Producers and Production Studies in the New Television Economy* (Durham: Duke University Press, 2011), 4. Original emphasis.

we accept that live performances at industry conventions drive the production of new technologies, as I argued in Chapter 2, then we also need to take seriously the work performed by women who introduce emerging technologies at tradeshows.

Employing a production studies approach to media research, which advocates attention to media industry workers at odds with industrial self-narratives, this chapter begins by situating booth babes within discourses of gender politics in the tech industry, where their work is both hyper-visible and overlooked.[4] Next, I turn to job calls placed by exhibitors for tradeshow model labor, grey literature that evidences not only their employment in the industry but the values that exhibitors place on their work. I then turn to their labor conditions, as conveyed through interviews with women who do the work. From there, I look backwards in time, at the historical relationship between the Consumer Electronics Show (CES) and the Adult Entertainment Expo (AEE), in order to theorize longstanding links between the erotic and the debut of media technology. Finally, I return to the concept of promosexuality, theorizing booth babes' erotic performances as integral to the sexual dimensions of corporate personhood.

Perhaps the use of eroticism at sites where emerging technologies acquire social meaning should not come as a surprise, not only given sexuality's longstanding use as a promotional tactic, but also because of the erotic's potential for social transformation, theorized across a range of scholarly traditions, from classical and continental philosophy to queer theory. Corporate manifestations of the erotic at tech expos lack the sheer force ascribed to eroticism in

[4] Vicki Mayer, Miranda J. Banks, and John Caldwell, "Production Studies: Roots and Routes," in *Production Studies: Cultural Studies of Media Industries*, ed. Vicki Mayer, Miranda J. Banks, and John Caldwell (New York: Routledge, 2009), 4.

these critical lineages: expo erotics neither compel subjects to seek truth,[5] confront mortality,[6] nor apprehend political power.[7] Instead, expo erotics instantiate what I propose we identify as "promosexuality," erotic expression oriented toward capitalist promotion. A practice perhaps most commonly associated with advertising, as in the adage "sex sells," the ubiquity of booth babes at tech expos shows that capitalist industry relies on eroticized femininity not only as an agent of commercial circulation but also as part of its cultures of production.

I locate this chapter at CES, the largest technology tradeshow in the world, where nearly 4,000 exhibitors, from Fortune 500 companies to startups, show off their newest products and prototypes.[8] Originally named the Consumer Electronics Show, today the tradeshow is officially known only by the moniker CES. As outlined in the introduction to the dissertation, the professional membership organization that owns and operates CES, formerly called the Consumer Electronics Association (CEA), renamed itself the Consumer Technology Association (CTA) in 2015, in order to better reflect the increasingly broad array of sectors represented by the trade group. "CES is the global stage for innovation and it touches nearly every industry," explained CTA President Gary Shapiro.[9] However, he continued, while it made sense for the trade organization to update its name, the group was reluctant to rebrand a massive tradeshow

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[5] Plato, *Plato: Complete Works*, ed. John M. Cooper and D. S. Hutchinson (Hackett Publishing, 1997), 526.

[6] Georges Bataille, *Erotism: Death and Sensuality*, trans. Mary Dalwood (San Francisco: City Lights Publishers, 1986), 11.

[7] Audre Lorde, "The Uses of the Erotic: The Erotic as Power," in *Sexualities and Communication in Everyday Life: A Reader*, ed. Karen E. Lovaas and Mercilee M. Jenkins (Thousand Oaks: SAGE, 2007), 89.

[8] Vault Consulting, "Attendance Audit Summary", 1; 5; Veris Consulting, "Attendee Audit Summary", 1; 5.

[9] Shapiro, "Press Conference."

with a global reputation.[10] Indeed, the reach of CES is enormous. When I conducted research there in 2015 and 2016, more than 175,000 people from over 150 different countries came to the show each year.[11] For perspective: over the four-day duration of the tradeshow, CES's 2.5 million square feet of exhibition space swelled with roughly the population of Fort Lauderdale.[12]

Open only to members of the tech industry and the press, CES is the sort of conference where, as discussed in the previous chapter, an otherwise dispersed group comes into formation. Stretched across four properties along the Vegas strip, CES encompasses keynote addresses, panel discussions, seminars, and the aforementioned pitch-off competitions. Unlike at TechCrunch Disrupt, where the exhibition hall is a sideshow of the conference, at CES, the exhibition halls, which house elaborate displays on a grand scale, are the main event. The Hyper exhibition described above, literally dubbed "HyperWorld," typifies a tradeshow booth as a temporary brandscape, a spatial rendering of a company that, as the last chapter showed, situates products and prototypes within cultural frameworks. This chapter, in turn, focuses on an under-recognized workforce that facilitates the conference by bringing the tech tradeshow's exhibitions to life.

An army of 20-something-year-old females:
Booth babes in the tech industry

In January of 2016, I boarded a CES shuttle bus in downtown Vegas, heading toward the Las Vegas Convention Center (LVCC) on the Vegas Strip. Luckily for me, CES runs its morning

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[10] Ibid.

[11] Veris Consulting, "Attendee Audit Summary," 4; Vault Consulting, "Attendance Audit Summary," 4.

[12] Fort Lauderdale, "About Fort Lauderdale," *City of Fort Lauderdale*, accessed October 2, 2016, http://www.fortlauderdale.gov/government/about-fort-lauderdale.

shuttles from downtown at regular intervals, because I got to the pickup spot around the corner from my hotel just in time to watch the previous shuttle pull away. That made me first in line for the next bus, so when it came, I climbed into a first row seat, and counted: 34 convention-goers got on the bus after I did, 33 of whom, I believe, were men.

Once we arrived, I entered through the LVCC Central Hall, where a team of tradeshow models invited new arrivals to join their guided tours of the Changhong company's mock-up domestic space, a multi-room model home filled with product prototypes, beginning with digital door locks at the entrance and looping through a living room, bedroom, and kitchen. These tours were led by polished young women, dressed in matching red shirts and black leggings, with expertly styled hair and makeup. The only woman on my eight-person tour was me.

While plenty of women can be found walking the CES show floor and managing exhibitions as well as delivering keynote addresses and participating in CES panel discussions, there are far more men than women engaged in each of these activities. No official gender breakdowns of CES registrations exist, despite an annual CES audit that tracks other social factors, such as nationality, job type, and level of seniority, which count as salient business data.[13] As discussed in the last chapter, nearly every major corporation lists increased inclusion of women and racial minorities among their goals; Intel used its keynote address at CES 2016 to launch a company diversity initiative.[14] Still, lack of attention to these factors in the trade group's annual report shows their failure to count as key to business dealings, a neutrality that masks inequity.

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[13] Vault Consulting, "Attendance Audit Summary"; Veris Consulting, "Attendee Audit Summary."

[14] Brian Krzanich, "Intel Keynote" (CES 2016, Las Vegas, January 5, 2016).

Upon completion of the Changhong tour, I sat down to make notes, wishing I knew computational statistics so that I could analyze gender at CES beyond my own experience with booths and busses. Happily, when I looked up, I found myself staring at a bright orange sign that read "Big Data." Beneath it, an LCD screen that demoed Changhong's surveillance software confirmed the CES gender imbalance more broadly: using cameras programmed to detect gender, the screen graphed hourly visitors to the booth, with separate bars for male and female visitors. An hour and a half into the show that day, 736 visitors had participated in tours that never included more women than men. As a prototype, the graph struck me as bit hard to read (I couldn't figure out a precise breakdown), and, of course, the software may not have detected gender accurately; at the very least, it miscategorized any non-binary guests at the exhibition. Nonetheless, the graph offers a basic illustration of both the overwhelmingly male attendance of CES and also the way that gendered presentation functions as foundational to demos of technological development.

These phenomena are key to understanding the role of booth babes, whose feminized, sexualized performances are a standard practice of technological exhibition within a male-dominated industry. Popular coverage of the paucity of women working in the tech industry occasionally points to the presence of booth babes at tech events as indicative of rampant industrial misogyny. A 2014 report in *The Guardian*, for instance, headlined "Women 'Belittled, Underappreciated, and Underpaid' in Tech Industry," described women "required to attend trade shows where 'booth babes' – scantily-clad models promoting products – were commonplace."[15]

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[15] Hannah Jane Parkinson, "Women 'Belittled, Underappreciated and Underpaid' in Tech Industry," *The Guardian*, November 21, 2014, sec. Technology, https://www.theguardian.com/technology/2014/nov/21/tech-sector-sexist-survey-guardian; See also Nina Burleigh, "What Silicon Valley Thinks of Women," *Newsweek*, January 28, 2015, http://www.newsweek.com/2015/02/06/what-silicon-valley-thinks-women-302821.html.

Similarly, trade publications and critical scholarship alike regard booth babes as symptomatic of an industrial ethos that presumes a workforce of male heterosexuals and disregards anyone else. Tech analyst-turned-journalist Wendy Shuchart's dismay that booth babes mark "the ladies in attendance" at tech shows as "tolerated visitors" to a "male-dominated landscape" and games scholar Nina Huntemann's contention that "more young girls would aspire to work in video games if they could imagine themselves as more than exhibition props," rightly express concern for female tech workers made to feel out of place and for *potential* female tech workers kept from joining the industry altogether.[16] At stake in these arguments is a fight over who "belongs" in the tech industry.

Yet concern that booth babes create an inhospitable environment for women who work in the tech industry skips over an oddly invisible foundation of the critique: booth babes *are* women who work in the tech industry. Moreover, they are more than an index of industrial sexism: their performances shape the debut of new technologies. Perhaps the greatest irony of tradeshow model labor is that the industrial misogyny that enables companies to deploy female sexuality as a promotional tactic also relegates the workforce that stages sexual spectacles to the outskirts of the industry's narratives of itself. Consider CTA President Gary Shapiro's retort to a question from a BBC journalist about the presence of booth babes at CES: "your effort to try to get a story based on booth babes…it's frankly irrelevant."[17] Later, he would respond to criticism of his

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[16] Wendy Schuchart, "International CES: Women in Technology Versus Female Objectification," SearchCIO, *TechTarget*, (January 2013), http://searchcio.techtarget.com/feature/International-CES-Women-in-technology-versus-nude-women-in-body-paint.; Nina Huntemann, "Pink Slips for Booth Babes?: No Way! Re-Train and Re-Skill!," *Flow*, February 2007, http://flowtv.org/2007/02/pink-slips-for-booth-babes-no-way-re-train-and-re-skill/.

[17] Shapiro quoted in Matt Danzico, "'Booth Babes' Stir Controversy at 2012 CES," *BBC News* (London: BBC, January 12, 2012), http://www.bbc.com/news/technology-16533289.

failure to condemn the practice with a statement calling the BBC segment "a media 'gotcha' piece" that distracts from his "record of support for women in the technology industry."[18] In Shapiro's statement, as elsewhere, the women who work the technology tradeshow don't count as part of the tech industry. "The reporter frankly befuddled me," wrote Shapiro, "with a story angle that was bizarre." The question that so confounded him, omitted from the segment itself, was this: are booth babes consumer electronics professionals?[19]

For both the president of the tech trade organization and the reporter covering it, that booth babes were functionally irrelevant to the work of the tech industry went without saying.[20] The trap laid for Shapiro by the BBC – the "gotcha" question – asked him to square that reality with their presence at CES. Yet the very fact of their employment at the world's largest tech expo means that models, by definition, work in the tech industry, however discomfiting their alignment with industrial perceptions of consumer electronics professionalism.

Invisible feminized labor, a historical bedrock of industrial capitalism, drives a paradox of booth babe labor: even as models execute spectacles (by definition, highly visible acts), their industrial contributions go unrecognized. Traditionally, invisible feminine labor takes the form of social reproduction, supplying the labor force on which capitalist industry relies.[21] In a sense,

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[18] Shapiro quoted in Mat Honan, "This Kind of Ignorance Is What Gives Gadget Guys A Bad Name (Updated)," *Gizmodo*, January 17, 2012, http://gizmodo.com/5876507/this-kind-of-ignorance-is-what-gives-gadget-guys-a-bad-name.

[19] Ibid.

[20] The BBC hammers home this view by closing its segment with a model who explains that she and all the women she knows prefer "shopping, cooking, or taking care of kids" to "the tech world." See Danzico, "'Booth Babes' Stir Controversy at 2012 CES."

[21] Kathi Weeks, *The Problem with Work: Feminism, Marxism, Antiwork Politics, and Postwork Imaginaries* (Durham: Duke University Press, 2011); Silvia Federici, *Caliban and the Witch* (New York: Autonomedia, 2004); Leopoldina Fortunati, *The Arcane of Reproduction:*

expo labor, while part of the waged economy, serves a similar social function, at a different node in the circuits of capital: rather than prepare laborers for entry into the commercial workforce, tradeshow models prepare goods for entry into the commercial marketplace. They do so affectively, as conduits of corporate feeling toward new products; they do so theatrically, through demos of new technologies performed for industry insiders; and they do so erotically, by presenting themselves, along with the companies they represent, as tantalizing. In other words, they are tasked not with the social reproduction of labor but with the social production of technology: booth babes' affective labors ready products for their cultural circulation in commercial markets.

The Hyper dancers, who performed at CES in 2013, constitute but one example of the erotic aesthetics common to booth babe performance. Sometimes their performances directly reference a product's social meaning, as when a company that makes waterproof cases for tech devices staffed its 2015 CES booth with dancing mermaids: women in sparkly bikinis and gauzy, fin-like capes. Still larger corporations sometimes use booth babe aesthetics to distinguish between different product lines, as when Samsung dressed the majority of its 2014 exhibition team in company shirts and leggings, but had its most-hyped product of the year – a curved TV set – exhibited by a woman in a one-shouldered cocktail dress. While leggings drew casual attention to models' bodies, the model in a cocktail dress marked the TV as a technology of glamour. More importantly, models' affective performances enliven the aesthetics of their costumes. In 2016, for instance, LG's household technology team, a coed cadre in cheery red t-shirts and white slacks (for the young men) and skirts (for the young women) chatted about the

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Housework, Prostitution, Labor and Capital (New York: Autonomedia, 1995); Mariarosa Dalla Costa and Selma James, *The Power of Women and the Subversion of the Community* (Bristol: Falling Wall Press, 1975).

Figure 9: A model dressed as a mermaid presents waterproof tech cases, CES, 2015. (Photo by the author)

Figure 10: Models with a convention-goer, CES, 2016. (Photo by the author; names blurred where not deliberately obscured.)

technologies on display in the manner of exceptionally enthused sales reps. A few feet away, a smaller set of female models, dressed in form-fitting black dresses and heels, adopted a more self-possessed, proprietary pose as they demoed LG's upscale "Signature Collection" kitchen.

Despite the sexualized aesthetics common to booth babe costumes, the Hyper spectacle drew outsized attention as particularly audacious. Its "explicit bodies in performance," to borrow Rebecca Schneider's phrase, underscore the more widespread use of female bodies at the tech expo, while also serving as a limit-case of the modes of undress permitted on the show floor: the following year, the CTA issued guidelines discouraging pasties. While the Hyper number lacked the radical political valence of the feminist performance artists whose material concerns Schneider, the controversy it provoked, as with more radical work, centered on questions of "who has the right to author the explicit body in representation" and "who determines the *explication* of that body, what and how it *means*," [original emphases].[22] These questions cut to the heart of the tensions inherent in the dual functions of the booth babe, whose bodily performance is used to convey meaning that accrues to new technologies, even as those meanings are unstable and indeterminate, and whose performances are devised by commercial exhibitors, even as their right to use women's bodies for promotional performance comes under fire.

Galvanized by the Hyper dance routine, critics circulated an online petition (as yet unsuccessful) demanding that CES "ban booth babes."[23] In response, the CTA (then the CEA), responded by critiquing the colloquialism. "I am offended by anyone calling anyone a babe

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[22] Rebecca Schneider, *The Explicit Body in Performance* (New York: Routledge, 1997), 3.

[23] Connie Guglielmo, "Gary Shapiro, CEO of the Consumer Electronics Association: Adopt a Dress Code Policy That Bans Booth Babes from CES," *Change.org*, 2013, https://www.change.org/p/gary-shapiro-ceo-of-the-consumer-electronics-association-adopt-a-dress-code-policy-that-bans-booth-babes-from-ces.

under any circumstances," Senior Vice President Karen Chupka told the tech journalist behind the petition, "We're in the year 2013 and it's rude."[24] Chupka's remark demonstrates the CTA's savvy with political talking points (in addition to running CES, the trade group functions primarily as a lobbying organization), but avoids confronting the charge: the world's largest expo of new technologies employs a workforce of sexualized young women. When I refer to this work as booth babe labor here, I do so out of hesitation at exclusively invoking managerial language designed to obfuscate the eroticism at the work's core. Instead, I argue, the eroticism which the organization takes pains to avoid referencing is central to the contingent labor on which CES relies.

Even as the CTA disavowed sexualized language, it expressly defended the sexual spectacle staged by the Hyper dancers. Asked whether "painted women in pasties and thongs," violated CES's "basic decency policy," Chupka justified the performance as "art."[25] The company itself made the same argument: in response to critics, Hyper produced a web video during the expo that defended its spectacle as "not offensive" because, "it's a piece of art."[26] These claims invert a rhetorical practice that Horkheimer and Adorno identify in their foundational critique of the culture industry. "Films and radio," according to their analysis, "no longer need to present themselves as art. The truth that they are nothing but business is used as an ideology to legitimize the trash they intentionally produce."[27] Hyper reversed this formulation: it invoked art as a means of legitimizing an otherwise prurient industrial practice. In other words,

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[24] Ibid.

[25] Ibid.

[26] Hyper TV, *CES 2013*.

[27] Horkheimer and Adorno, *Dialectic of Enlightenment*, 95.

where Horkheimer and Adorno saw the industrialization of cultural practice leading to aesthetic debasement, Hyper's spectacle instantiates corporate use of live art to aestheticize industrial commodities. Its live spectacle served as a legitimation of the tech accessory company's aspiration to cultural significance, elevating its products from utilitarian devices to cultural technologies.

We need neither accept nor reject Hyper's claims to artistry in order to recognize its invocation as an effort at cultural import, which also means recognizing the dancers' involvement in cultural production. That their labor goes under-recognized aligns with a larger failure by the tech industry to value cultural labor, particularly when performed by women. When the tech industry celebrates immaterial labor, what Maurizio Lazzarto terms "labor that produces the informational and cultural content of the commodity,"[28] it prioritizes information work over cultural production. Where producing a commodity's "informational content" requires "skills involving cybernetics and computer control (and horizontal and vertical communication)," production of its "cultural content" includes "the kinds of activities involved in defining and fixing cultural and artistic standards, fashions, tastes, consumer norms, and, more strategically, public opinion."[29] Importantly, these latter forms of labor are frequently feminized, compounding their devaluation. For instance, a particularly striking example of the misogyny detailed in Marwick's Silicon Valley ethnography relates reverential praise given to a tech developer's professional accomplishments in contrast with the condescension reserved for the

[28] Maurizio Lazzarato, "Immaterial Labor," in *Radical Thought in Italy: A Potential Politics*, ed. Paolo Virno and Michael Hardt (Minneapolis: University of Minnesota Press, 1996), 133.

[29] Ibid.

contributions of his frequent collaborator and ex-girlfriend, a marketer and author.[30] Booth babes, as women who shape the "fashions, tastes, and consumer norms" that accrue to commodities through sexualized, affective performance (rather than through ad campaigns and books) are still further debased by tech industry status hierarchies.

Perhaps because critical scholarship tends to mirror the industry's register of tech work, for all of the scholarly research on gender and labor in the media and technology sectors since the beginning of the twenty-first century, tradeshow modeling has received minimal attention.[31] What little research exists comes from studies of the gaming industry, where Huntemann identifies booth babes at the gaming expo E3 as symptomatic of an increasingly flexibilized late capitalist workforce. At the same time, she argues, "the longevity of the promotional model throughout significant industry and market changes highlights the endurance of an industrial logic that continues to frame women as escorts to the technologies of contemporary work and leisure."[32] Similarly, Nicholas Taylor, Jen Jenson, and Suzanne de Castell locate booth babes within a network of female participation in competitive gaming circuits, women whose various

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[30] Marwick, *Status Update,* 264–65.

[31] Angela McRobbie, *Be Creative: Making a Living in the New Culture Industries* (Cambridge: Polity, 2016); Marwick, *Status Update*; Gina Neff, *Venture Labor: Work and the Burden of Risk in Innovative Industries* (Cambridge: MIT Press, 2012); Trebor Scholz, ed., *Digital Labor: The Internet as Playground and Factory* (New York: Routledge, 2012); Melissa Gregg, "Home Offices and Remote Parents: Family Dynamics in Online Households," in *Work's Intimacy* (Cambridge: Polity Press, 2011), 121–37; Andrew Ross, *No Collar: The Humane Workplace And Its Hidden Costs* (Philadelphia: Temple University Press, 2004).

[32] Nina Huntemann, "Working the Booth: Promotional Models and the Value of Affective Labor," in *Production Studies, the Sequel!: Cultural Studies of Global Media Industries*, ed. Miranda J Banks, Bridget Conor, and Vicki Mayer (New York: Routledge, 2016), 45.

contributions are invisible and whose presence at competitions is sexualized.[33] Building on these two foundational studies, this chapter looks beyond the gaming industry, with its particular modes of systemic and interpersonal misogyny,[34] by locating booth babes at an expo where "technology" is more widely defined.

"Promotional models," notes Huntemann, "are common at expositions for construction tools, audio equipment, guns, cycling gear, cell phones, cameras, computers, and many other consumer electronics, as well as enterprise-level products like solar energy installations and data security systems."[35] Significantly, each of these sectors currently exhibit at CES, which, as Shapiro put it, "touches nearly every industry." This wasn't always the case. The first CES, held in 1967, grew out of the annual tradeshow National Association of Music Merchants (NAMM). As discussed in the introduction to the dissertation, exhibitors came to CES wanting a show with a specific focus on home entertainment media. In the ensuing decades, that limited focus has expanded to encompass 20 different product sectors and tech industry personnel from countries around the world. Because tradeshow models introduce new technologies wherever they debut, expanded industrial designations of "technology" have made CES a central site of booth babe labor and the codification of corporate erotics.

While the diversification of technologies on the show floor took place at CES over time, tradeshow models were part of the show from its inception. Photos from the 1967 show feature

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[33] Nicholas Taylor, Jen Jenson, and Suzanne de Castell, "Cheerleaders/ Booth Babes/ Halo Hoes: Pro-Gaming, Gender and Jobs for the Boys," *Digital Creativity* 20, no. 4 (2009): 239–52, doi:10.1080/14626260903290323.

[34] Lisa Nakamura, "Queer Female of Color: The Highest Difficulty Setting There Is? Gaming Rhetoric as Gender Capital," *Ada: A Journal of Gender, New Media, and Technology*, no. 1 (November 11, 2012), http://adanewmedia.org/2012/11/issue1-nakamura/.

[35] Huntemann, "Working the Booth: Promotional Models and the Value of Affective Labor," 41.

women in filmy dresses and fanciful hats festooned with ribbons over their chests that label them "Consumer Electronics Show Guides."[36] The following year, when the Association of National Advertisers (ANA) published its guide to exhibitions, it noted the popularity of employing "young ladies" to assist with tradeshow visitors during busy shows.[37] In the popular discourse of the twenty-first century, "booth babe" constitutes the job's most universally employed description.[38] Reflecting a widespread departure from the veiled references to sexuality that dominated discourse in the mid-twentieth century, "booth babe" emphasizes the eroticism attached to the practice.[39]

Although the ANA aimed its manuals at exhibitors in any sector, the very term "booth babe" has origins at CES. The first known published usage of the term appeared in a 1986 *Toronto Star* dispatch from the tradeshow, which reported that "the quality of the products was inversely proportional to the chest size of the booth babes handing out the literature."[40] The *Star*'s early usage of the term has gained some interest among lexicographers (Grant Barrett tracks it in his archive of "unofficial English") and from journalists compiling popular histories

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[36] These photos circulate on the internet without attribution; my emails to editors at sites that have published them, asking for more information, have gone unreturned.

[37] Goodale Stewart, *Trade Shows and Exhibits*, 94. Debates about booth babe expertise are, evidently, as old as the practice: the section on the popularity of these young ladies is devoted to the importance of "briefing" them.

[38] Other colloquialisms, such as "booth bunny" and "demo dolly" that likely emerged around the same period as "booth babe" have more or less failed the test of time, although an occasional usage still surfaces: George Franken, *Carol: Trade Show Booth Bunny*, Hotwife Stories 2 (Electric Ink Publishing, LLC, 2015).

[39] See Maggie Nelson, *The Red Parts: Autobiography of a Trial* (Minneapolis: Graywolf Press, 2016), 77. Nelson contrasts sexualized descriptions in news accounts of violence against women from the early twenty-first century with newspaper reports of similar crimes from the 1960s: "The main difference was that the '60s articles used a more modest lexicon."

[40] Jonathan Gross, "Run-Free Nylons," *Toronto Star*, June 28, 1986, sec. STARWEEK, 6.

of booth babes (Rebecca Greenfield deems the *Star*'s reference sufficiently casual to wager that the term was a commonplace colloquialism rather than a coinage).[41] For my purposes here, the reference is compelling for two key reasons. First, it explicitly links booth babes to CES and the exhibition of new technology, evidencing the persistent corporate erotics of the show floor. Second, it illustrates a longstanding skepticism of booth babes as anything other than a distraction from the technology on display.

Those eager to separate booth babes from the tech industry are quick to suggest the practice is dying out. Shapiro described booth babes to the BBC as "old school" and insisted the practice was "decreasing rather rapidly."[42] In fact, news outlets and trade publications have predicted the end of booth babe labor for at least a decade,[43] conjecture belied by pinup-styled photos of booth babes that continue to appear as part of CES coverage each year.[44] "You're

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[41] Grant Barrett, "Booth babe," *A Way with Words*, January 11, 2006, http://www.waywordradio.org/booth_babe_1/; Rebecca Greenfield, "A Brief History of CES Booth Babes," *The Wire: News from the Atlantic*, January 7, 2013, http://www.theatlanticwire.com/technology/2013/01/ces-booth-babes-history/60619/. Greenfield draws attention to Stewart's tradeshow handbook, a citation for which I am grateful.

[42] Shapiro, quoted in Danzico, "'Booth Babes' Stir Controversy at 2012 CES."

[43] Lisa Johnston, "Signs CES Is Moving Beyond The Booth Babes," *Twice*, January 14, 2016, http://www.twice.com/news/international-ces/signs-ces-moving-beyond-booth-babes/60143; Jean Sorensen, "'Booth babes' Fading from Tradeshow Floors," *Journal of Commerce*, February 21, 2011, http://www.journalofcommerce.com/Home/News/2011/2/Booth-babes-fading-from-tradeshow-floors-JOC042964W/; David L. Margulius, "The End of Booth-Babe Culture?," *Network World*, September 20, 2007, http://www.networkworld.com/article/2285852/infrastructure-management/the-end-of-booth-babe-culture-.html.

[44] Wyatt Swain, "CES 2016 Booth Babes: Hottest Photos From Las Vegas," *COED*, January 6, 2016, http://coed.com/2016/01/06/ces-booth-babes-hot-photos-sexy-instagram-pics-consumer-electronics-show-international-vegas/; Angela Moscaritolo, "The Booth Babes (and Bros) of CES 2016," January 9, 2016, http://www.pcmag.com/slideshow/story/340982/the-booth-babes-and-bros-of-ces-2016; Bryant Jackson, "CES 2015 Booth Babes [PHOTOS]," *COED*, January 9, 2015, http://coed.com/2015/01/09/ces-booth-babes-hot-photos-instagram-pics/; Angela

deluding yourself," wrote *Business Insider*, the publisher of one such photo spread, "if you think you can spend any time at the show without encountering this army of 20-something-year-old females." Although the spread included a group of models dressed as a cheerleaders and another as a French maid, the accompanying copy identified the rise of a booth babe aesthetic that forgoes overt sexual fetish-ware in favor of leggings and t-shirts.[45] (My Changhong guide, in leggings and a collared company shirt, wore a variation of this aesthetic.) "It's an ingenious solution," *Business Insider* mused, "because it solves the overt symptom of booth-babeism (the girls are semi-dressed) but keeps the underlying sexism (the outfit only works if they're young, hot and female, and there is no equivalent for men)."[46] Even when these women exposed less flesh than, say, a model in a sequined bra top (also pictured in the photo spread), they dressed according to codified visual vocabularies of feminine eroticism.

Predictions of the end of booth babe labor thus function as shadowy inversions of what Jennifer Pozner terms "false feminist death syndrome," a tendency of the media to routinely pronounce the feminist movement over in spite of its robust endurance.[47] These predictions dismiss the booth babe, and the industrial misogyny that enables their employment, as outmoded

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Moscaritolo and Chloe Albanesius, "The Booth Babes of CES 2015," *PCMAG*, January 9, 2015, http://www.pcmag.com/slideshow/story/330991/the-booth-babes-of-ces-2015; Alex Colon, "Our Favorite Booth Babes at CES 2013 - Slideshow from PCMag.com," *PC Mag*, January 10, 2013, http://www.pcmag.com/slideshow/story/306862/our-favorite-booth-babes-at-ces-2013; Bob Buskirk, "CES 2009: The Booth Babes," *ThinkComputers.org*, January 12, 2009, http://www.thinkcomputers.org/ces-2009-the-booth-babes/.

[45] Jim Edwards, "The CES 'Booth Babe' Is Nearly Extinct — Here's What's Replacing Her," *Business Insider*, January 15, 2014, http://www.businessinsider.com/ces-booth-babes-in-2014-2014-1.

[46] Ibid.

[47] Jennifer Pozner, "The 'Big Lie': False Feminist Death Syndrome, Profit, and the Media," in *Catching a Wave: Reclaiming Feminism for the 21st Century*, ed. Rory Dicker and Alison Piepmeier (Boston: Northeastern University Press, 2003), 31.

and insignificant. Yet the very solutions proposed to the problem of booth babe labor – experiments in a more dressed-down aesthetic for models – treat the most visible signs of sexism without addressing the endurance of its gendered, sexualized logics.

Tradeshow models costumed less like showgirls and more like they are going to the gym is not nothing: a more subdued version of the tradeshow model aesthetic puts at least some female convention-goers at ease: the petition that purportedly calls on CES to "ban booth babes," in fact demands not the elimination of the practice but the implementation of a dress code.[48] "Let me just say," wrote the tech journalist who penned the petition, "I'm not opposed at all to exhibitors' hiring attractive models to pitch their products and help their company stand out."[49] The underlying dynamics of this solution, as *Business Insider* acknowledged of the companies that adopted the strategy of their own accord, would do little to alter the erotics of exhibition practices. If a turn by some (though by no means all) employers of tradeshow models toward more casual attire makes their use of sexuality less overt, erotic performance persists as the chief reason exhibitors hire models to staff their booths.

Model/ hostess:
The grey media of expo erotics

"Can a Wi-Fi router be sexy?" The question, posed by Bloomberg News in a review of a router that boasts both innovative technology (it pairs devices with a bandwidth-appropriate network) and innovative design (a white triangle rather than grey rectangle), found its answer in

[48] In fact, the petition is a modest proposal. (Sorry.)

[49] Guglielmo, "Gary Shapiro, CEO of the Consumer Electronics Association: Adopt a Dress Code Policy that Bans Booth Babes from CES."

the next sentence: "Yeah, it can."[50] A connotation of market desirability, journalistic pronouncements of sexiness apply equally to singular products and to whole business sectors. Reflecting the range of sectors competing for Silicon Valley investment capital, finance and tech headlines promise to explain, variously: "Why Real Estate is the New Sexy Tech"; "Why B2B Startups Are Suddenly So Sexy"; "Why Fin-tech is Suddenly Sexy" and "Why Hotel Tech Can Be Sexy (to Investors)."[51] So too does journalistic discourse use "sexy" to characterize company brands, as when a CNET journalist covered a sleek line of Hewlett Packard computers by asking the company, "Is HP trying to be as sexy as Apple?" to which an HP spokesperson replied, "correct."[52]

Discursive sexiness signals the appeal of individual technologies, sectors, and brands. On the CES show floor, where each exhibitor seeks to promote its products, company, and corporate sector as desirable to industrial partners, sexiness is affective and embodied rather than discursive. As Huntemann puts it, booth babes, in the popular imagination, "bring sex appeal to

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[50] Joshua Brustein, "Can a Wi-Fi Router Be Sexy? Yeah, It Can," *Bloomberg Businessweek*, March 16, 2016, http://www.bloomberg.com/news/articles/2016-03-16/can-a-wi-fi-router-be-sexy-yeah-it-can.

[51] Caren Maio, "Why Real Estate Is the New Sexy Tech," *LinkedIn Pulse*, June 21, 2016, https://www.linkedin.com/pulse/why-real-estate-new-sexy-tech-caren-maio; Jill Krasny, "Why B2B Startups Are Suddenly So Sexy," *Inc.com*, September 24, 2013, http://www.inc.com/magazine/201310/jill-krasny/why-b2b-start-ups-are-suddenly-sexy.html; Mark Calvey, "Why Fin-Tech Is Suddenly Sexy," *Upstart Business Journal*, February 8, 2015, http://upstart.bizjournals.com/companies/startups/2015/02/08/whyfin-tech-is-suddenly-sexy.html?page=all; Kevin May, "Hotel Tech Startup Explains Why Hotel Tech Can Be Sexy (to Investors)," *Tnooz*, September 3, 2015, https://www.tnooz.com/article/a-hotel-tech-startup-explains-why-hotel-tech-can-be-sexy-to-investors/.

[52] Chris Matyszcyk, "HP Wants You to Believe It's as Sexy as Apple," *CNET*, June 17, 2016, http://www.cnet.com/news/hp-wants-you-to-believe-its-as-sexy-as-apple/.

unsexy products" like "external hard drives and console cooling systems."[53] Yet hardly anybody believes that a hard drive is sexy simply because an ad features a sexy woman holding it, much less that it becomes sexy because a woman in body paint danced beside a prototype at a tradeshow. My aim here is not to equate booth babe labor with discursive habit but to put them into relation. Consider, for instance, how the CNET article describes HP's quest "for allure" as the company's attempt to "seduce you" by framing its line of computers as "the one to be seen with."[54] These discourses of sexiness, which mark HP as both competitive and desirable, articulate the company to its products. Booth babes are hired to perform similar acts of articulation on the tradeshow floor, deploying erotic performance to introduce new technologies to the industry, as agents of a company's brand. However, compared to the widespread instantiations of sexiness in journalistic discourse, tradeshow models are permitted a far more limited range of sexy performance.

This section shifts attention from popular discourses surrounding tech sexiness to industrial, grey literature that outlines how exhibitors value sexualized performance at expos. I base my findings on 23 ads for CES booth assistance (excluding re-posts) that appeared on the "jobs" section of the Las Vegas Craigslist classified site in December 2015. These ads represent but one mode of CES talent recruitment: some women secure CES gigs through job calls posted across social media sites while others are affiliated with talent agencies under contract with CES exhibitors. However, unlike proprietary correspondence between an exhibitor and a talent agency, Craigslist ads are publically searchable, though not widely circulated. Following Matthew Fuller and Andrew Goffey's advocacy of scholarly attentiveness to internal corporate

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[53] Huntemann, "Working the Booth: Promotional Models and the Value of Affective Labor," 40.

[54] Matyszcyk, "HP Wants You to Believe It's as Sexy as Apple."

media, I apprehend these job calls not as "bearers of some sort of hidden meaning" but as indicative of the corporation's operational logics.[55] Here, these ads evidence the perpetuation of a tech industry workforce otherwise considered professionally outside the bounds of the very industry whose companies place the calls.

Booth babes are, by definition, public facing positions: the women hired for these jobs represent a company to other members of the industry. While an occasional classified ad suggests internal designs (as when a 2016 ad for "the HOTTEST booth girls" informed applicants, "You only goal [sic] is to be very outgoing and engage customers in our booth, and if all goes well PARTY like a VIP with the CEO"), the work that models perform on the show floor is both erotic and valuable in its own right. The language used in job calls indicates that the values companies derive from models' work are rooted in their physical labor (the ability to stand for nine hours at a time; polished physical beauty) as well as their affective labor (the ability to captivate convention-goers; smiling). As a typical 2016 call for someone "attractive" and "personable," explained, "what we really want are girls who will stop traffic and intelligently interact with them [sic]." At the same time, corporate language that both acknowledges and obfuscates the role of sexuality in these jobs suggests both the erotic core of tradeshow model work as well as industrial instability over how to account for it.

In advance of the 2016 show, Craigslist job calls advertised day rates between $100 and $350. Companies that contract with agencies pay higher rates, which firms apportion to the models on their rosters who work the show. For their part, models can make anywhere from

[55] Matthew Fuller and Andrew Goffey, *Evil Media* (Cambridge: MIT Press, 2012), 12.

$12.50 an hour to $150 an hour, with the average wage hovering at $62.50.[56] While coming home at the end of a ten-hour day with a check for $125 or $1,5000 no doubt makes an enormous difference to the women hired for these positions, both ends of the wage spectrum constitute small percentages of companies' tradeshow expenditures. At CES 2016, exhibition rates started at approximately $6,000 for 10 by 10 feet booths and ran over $26,000 for the largest areas. Given these economic structures, it should not come as a surprise that models often staff midsize booths: companies that seek an outsized presence at CES but that lack the resources of major corporations can hire models to enliven their booths at a fraction of the cost of floor space.

An hour of a tradeshow model's labor, in the calculus of CES exhibition, is thus roughly the equivalent of a square foot of floor space. While the sheer numbers of exhibitors at CES mean few if any universal trends (some midsize booths contain only year-round employees while both small and large booths are staffed by day-rate hires), my point here is that, in literal terms, the tech industry values booth babes as an extension of the floor. By securing cheap labor as a solution to expensive rent, exhibitors engage in labor relations as old as capitalism itself: booth babes give special meaning to Marx's observation that "the capitalist system demanded" from feudalism's expropriated laborers "a degraded and almost servile condition."[57] At the same time that it sexualizes their deferential labor, it underestimates the work involved in sexualized performance.

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[56] The industry average, quoted to me by the owner of a newly opened event modeling agency based in Las Vegas, who arrived at the figure by researching job listings on Craigslist, postings in Facebook groups, and contacting other agencies. Models I interviewed confirmed that their wages fall into this range.

[57] Karl Marx, *Capital: A Critique of Political Economy. Vol. I, Book One*, ed. Friedrich Engels, trans. Samuel Moore and Edward B. Aveling (London: Electric Book Co., 2001), 1029.

The range of official titles applied to the work reflects both industrial instability regarding how best to apprize expo labor and also efforts to reconcile the use of sexualized workforces with professional ideologies that disavow the practice. "It's frowned upon" advises *TechCrunch*, "when you actually put booth babes as line item [sic] in your budget."[58] Consequently, some staffing agencies refer to their clients as "event models" and "atmosphere models," appealing to companies exhibiting at expos as well as producers of events such as restaurant and nightclub openings; other agencies, geared more directly to expos, refer to their clients as "tradeshow models," and as the more entrepreneurial-inflected "promo models," and "brand ambassadors." Promotional models thus constitute an explicit if under-theorized aspect of promotional culture. According to Wernick's foundational definition, a promotional message "at once represents (moves in place of), advocates ("moves on behalf of"), and anticipates ("moves ahead of") the circulating entity or entities to which it refers."[59] It follows then that booth babes, as promotional *messengers*, have a complex set of tasks: they simultaneously represent the companies that hire them, advocate on behalf of the company brand, and preemptively shape the cultural meanings of products in development.

That varied titles apply to uniform job functions is made clear by ads that used language relating to modeling and promoting interchangeably, as in the case of one such ad that read, "If you are a tradeshow model, promotional model, or brand ambassador with a BIG personality, we need you!" This litany suggests an awareness of an array of search terms to which Craigslist wanted ads must appeal; it also reflects an industrial ethos that celebrates entrepreneurialism (as in "tradeshow," "promotional," and "brand," while spectacularizing polished femininity

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[58] Spencer Chen, "Booth Babes Don't Work," *TechCrunch*, January 13, 2014, http://social.techcrunch.com/2014/01/13/booth-babes-dont-convert/.

[59] Wernick, *Promotional Culture*, 182.

("model.") If the word "model" is generally coded as female, ads make the code explicit: nearly every job call placed on Craigslist in the lead-up to CES 2016 specified female applicants only. Similarly, agencies tend to maintain rosters primarily, and sometimes exclusively, of women. Like all performances of gender, modes of femininity manifest in particular ways, which here shape the affective codes of specific brands, distinctions the ad above referenced by listing the ability to "pull off the 'sexy-nerd' look" as "a plus." Another, similar ad that announced "Attractive, Outgoing, and Engaging female needed to Work Trade Booth," registered backlash against the use of feminine sexuality as an exhibition strategy by reassuring applicants, "you don't have to wear anything too revealing." So much rests on that "too," an assurance that underscores the eroticism of the work through its intent to impose a partial limitation.

The sexualized dimensions of the job become more apparent, perhaps, through a final category of job title: "booth hostess." Exceeding both the presentionalism of modeling and the entrepreneurialism of brand advocacy, hostess labor aligns the job with service industry work, and in particular with the relation between service work and sexual service. As Emily Raine argues in her study of affective labor in the service industry, "women's bodies in public space mean differently than men's do, such that part of the display of women's bodies in public entails some performance of sexuality."[60] Categorizing expo labor as hostess work reflects this gendered differential: as with much gendered language, "hostess" connotes more than merely the female equivalent of the male "host," which lacks the sexualized connotations of its female counterpart. A feminine term long used for sexualized service workers, from maître d's to flight attendants to escorts, women employed as hostesses are tasked with making clients feel at home in

[60] Emily Raine, "On Waiting: A Political Economy of Affect in Restaurant Service" (Dissertation, McGill University, 2013), 155, http://digitool.Library.McGill.CA/R/?func=dbin-jump-full&object_id=114210.

commercial spaces (restaurants, airplanes) and with providing a form of companionship that has the allure of sex, if not the contractual obligation to participate in it (escort services). CES models serve the tech industry by performing a similar form of domestication: they introduce conference goers to technologies on the brink of their commercial release, and, through flirtatiousness and presentationalism, help convention-goers feel simultaneously excited by the unfamiliar and at ease with it.

In a further indication of both the multi-faceted nature of expo work and industrial uncertainty over how to categorize it, calls for hostesses likewise appear alongside other forms of the job title. For instance, one CES 2016 job ad appeared under the heading, "MODELS/HOSTESSES FOR CES" while another announced, "We are looking for a blonde tradeshow or promotional model to be a booth hostess." The casual slash of the first formulation indicates an interchangeability between the two modes of work, while the second interpolates "model" as a fulltime identity and the directive "be a booth hostess" as a job function. A key aspect of a booth hostess's job function, clarified by a third such ad, entails managing the degree to which her presence eroticizes the expo: in seeking women to "greet and show visitors around the booth" and "present our products," the company took care, in the form of a caps lock key, to describe its "casual business environment" as "NOT a suit & tie or sleazy type atmosphere." The ad's disavowal of suits even as it defends against the presumption of sleaze makes clear how, as elsewhere, hostesses are here instrumental in guiding visitors through a site of business that presents itself as a site pleasure.

If, as Fuller and Goffey propose, attention to grey media reveals "hints of contrast" in the operational sensibilities of media industries, these CES job calls are as rich in the wide-ranging terminology they use to describe booth babe labor as they are in their erasures: the negations

("NOT") and adverbial phrases ("too revealing") that parse the managed eroticism of the expo landscape.[61] These ads make clear that, while maintaining an attractive, feminized appearance and developing an engaging, invitational affect are key job requirements of expo labor, so too must tradeshow models police a boundary between sleaziness and sexiness.

Hot mannequin:
Performing the expo spectacle

Three models in pastel polka-dot dresses, bright beaded necklaces, and strappy white heels stood at the entrance of a front-row booth on the first floor of the LVCC South Hall at CES 2015. They wore rainbow stripes in their hair and had colorful eyelashes. A fourth model with big, dark eyelashes wore a short black dress with a fitted grey blazer, hoop earrings and black heels, a grey baseball cap slung sideways over one eye. When I asked why, she told me that the exhibitor, an audio accessory company called iHip, wanted to make clear that it had two looks: one for men and one for women. If these choices reflect a trend in products designed according to gendered market segmentation, they also illustrate how, in the theatrical vocabulary of tradeshow modeling, the cultural connotations of any technology become transcribed through the lens of feminine sexuality.

The following year, iHip scaled back its CES presence, forgoing its front row exhibition space in favor of a smaller booth on the second floor. Its models' aesthetic, too, was less high concept: they wore slinky black cocktail dresses and go-go boots. Elsewhere on the show floor, black cocktail dresses abound. Costumed like hostesses at an upscale restaurant or nightclub, these models mark their booths as sites of exclusivity and indulgence, blurring distinctions between a business trip and a Vegas vacation.

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[61] Fuller and Goffey, *Evil Media*, 12.

Black cocktail dresses are ubiquitous in part because models are sometimes required to supply their own clothing. That wasn't the case at iHip, where matching outfits indicated the company had ordered them in advance, according to the measurements of the models with whom it had contracted. However, at other booths, particularly those that belong to companies with limited resources, requests that models arrive for work in black cocktail dresses assures a uniform aesthetic that signifies sexiness, without requiring that companies invest in designing and ordering costumes. (This logic also, perhaps, bespeaks the increasing popularity of the aforementioned black leggings, which models are often asked to supply.) Instructions for hair and makeup are likewise included in model's contracts, where it goes without saying that any necessary products – and the skill needed to apply them – are the responsibility of the model. These are just some of the ways that exhibitors extract models' labor value; they also rely on model's bodily and emotional labors.

Following production studies' call to investigate "how media producers make culture, and, in the process, make themselves into particular kinds of workers," this section analyzes the lived experiences of tradeshow models at CES.[62] I draw from my observations on the CES show floor, and from from approximately 25 interviews conducted there between 2015 and 2016. Selection criteria consisted of women who held temporary contracts to work booths at CES, hired either directly by exhibitors or through agencies. These agencies are located both in Las Vegas and around the country: one indication of the prevalence of models at CES is the fact that the show's demand for booth assistance exceeds the labor pool of Las Vegas, a city whose labor infrastructures are largely organized around business tourism events such as expos. However, in a further indication of models' exclusion from the tech industry's discourses of itself, no record

[62] Mayer, Banks, and Caldwell, "Production Studies: Roots and Routes," 2.

of how many models work CES each year exits; they go unaccounted in the CTA's detailed annual audit of the titles and job functions represented at the tradeshow.[63]

Women come to CES from a variety of backgrounds: for some, event modeling constitutes a full time career, while others have part-time jobs in related industries, such as performing in Vegas casinos and clubs. Some are college students (CES takes place over winter break) and some are actors (pilot season begins on the heels of CES). Models of diverse races are represented at the global tradeshow, but as in the fashion industry, where bell hooks identifies "an aesthetic that suggests black women, while appealingly 'different,' must resemble white women to be considered beautiful," tradeshow models of all ethnicities adhere to similar white, Western beauty ideals.[64] CES's perpetuation of these ideals is indicated less by occasional Craigslist requests for blonde applicants than by the fact that models of all ethnicities wear their hair painstakingly straightened, a key convention of tradeshow model aesthetics.

Hair plays a prominent role in racialized cultural identity. Cheryl Thompson argues that "for Black women, gender (and sexuality) comes into being through adherence to an *inauthentic* hair standard," linking the politics of hair to "the *performance* of beauty and to a large extent, heterosexual courtship."[65] The expo's invocation of these aesthetics thus places an extra (racial) burden on models whose hair requires additional work to meet this conventional feminine beauty

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[63] Vault Consulting, "Attendance Audit Summary," 6; Veris Consulting, "Attendee Audit Summary," 6.

[64] bell hooks, *Black Looks: Race and Representation* (Toronto: Between the Lines Publishing, 1992), 73.

[65] Cheryl Thompson, "Black Women, Beauty, and Hair as a Matter of Being," *Women's Studies* 38, no. 8 (October 15, 2009): 849, doi:10.1080/00497870903238463. (Emphasis of "inauthentic" is original; emphasis of "performance" is added.)

standard.[66] Moreover, Thompson's insights underscore how feminine beauty and heterosexual courtship rituals can both constitute acts of performance requiring physical and emotional effort.[67]

The purported celebration of the sexualized female body, coupled with a narrow range of bodies deemed acceptable to public presentation, constitutes a central tenant of what Rosalind Gill terms postfeminist media culture.[68] This tension drives the most uniform aspects of the tradeshow model labor pool: gender and age. Most tradeshow models are women in their twenties, and some Craigslist ads specify that they must be. The ageism of tradeshow model hiring practices becomes clear even in good-natured attempts to argue against it, as when a model I interviewed reported having worked alongside models in their early thirties by assuring me, "they look like they've got a few more miles on them." I approach such disclosures as instances of what Caldwell terms "trade stagings." Advocating critical attention to media industry labor, Caldwell reminds scholars that, "what one sees in a corporate environment has almost always been strategically designed" and "what high-level professionals say has almost always been scripted and rehearsed."[69] Compounding these performance elements, the women I interviewed held jobs that contractually obligated them to play a performative role, one that

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[66] See Susan Bordo, *Unbearable Weight: Feminism, Western Culture, and the Body* (Berkeley: University of California Press, 1993), 254–255: "even as we are all normalized to the requirements of appropriate feminine insecurity and preoccupation with appearance, more specific requirements emerge in different cultural and historical contexts, and for different groups."

[67] For analysis of ambiguous authenticity in gendered and racialized performances of heterosexual femininity, see Laura Grindstaff and Emily West, "'Hands on Hips, Smiles on Lips!': Gender, Race, and the Performance of Spirit in Cheerleading," *Text and Performance Quarterly* 30, no. 2 (2010): 143–62, doi:10.1080/10462931003628910.

[68] Rosalind Gill, *Gender and the Media* (Cambridge: Polity, 2007), 255–56.

[69] Caldwell, "Para-Industry", 162–63.

requires they entertain questions from conventioneers, and do so while smiling.[70] Moreover, while these women don't rank as "high-level professionals," they are indeed hired, in many instances, to follow pre-scripted talking points, and are, in every instance, actively responsible for executing strategically designed trade stagings. In other words, even though booth babes constitute a flexible workforce on the outskirts of the tech industry, they are expected to toe the company line like seasoned executives.

If late capitalism calls on laborers to identify with capital, that practice is heightened in the tech industry, as Gina Neff demonstrates in her analysis of early startup culture.[71] Yet tech workers' adoption of company goals extends beyond the office spaces where optimistic employees work long hours with little security: recognizing promotional models as a tech industry workforce shows how these still more precarious laborers identify with industrial values as a means of maintaining their own jobs within the industry. As a model demoing kitchen appliances told me, "my best work is when we help to lead-generate and reach goals," although the company she represented did not track her lead-generation. Her statement shows, perhaps, that her identification with industrial entrepreneurialism exceeds the exhibitor's valuation of her labor—or else demonstrates an awareness that a successful booth babe performance required her to claim affective investment in the company and an industry-appropriate work practice.

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[70] Models are not required to answer *every* form of question from every conference attendee, however, and many declined to participate in this study, sometimes citing my Research Ethics Board's consent form as a document they couldn't sign while in costume, because they are authorized only to represent the company, but more often because they were overwhelmed attending to actual clients. Despite my adherence to REB protocols, analysis of the research dynamics involved in ethnographies of affective laborers required to be approachable and inviting deserves further study.

[71] Neff, *Venture Labor*, 10.

Some of the chief labor complaints of CES booth babes relate to their struggles to have their work recognized *as* work. As one of the iHip models put it, "people are like, oh, you stand there and look pretty? Must be hard. But the reality is, I'm more exhausted at the end of these days than when I worked a nine to five." These remarks express frustration with tradeshow modeling's presumed inferiority to office work, underscoring the paradoxical invisibility of the work that goes into staging promotional spectacle. Despite the requisite appearance of effortless ease, she continued, "it's very exhausting: having to be on point, smiling all the time, you're a cheerleader." Her reflection explicitly echoes Arlie Hochschild's foundational study of emotional labor, which describes the archetypal female employee as "the conversational cheerleader" who celebrates and enhances the status of others.[72] In Hochschild's analysis, emotional labor falls disproportionately to women, who are socialized to manage emotions more so than are men, even as the emotional skillsets that such work requires are essentialized and therefore unrecognized as a form of skilled labor.[73] More than three decades after Hochschild's study, a period in which notions of gender have undergone profound change and the industrial uses of employee affect have intensified, low compensation of gendered, affective skillsets points to the perpetuation of these ideologies.[74] At CES, models function as cheerleaders for both

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[72] Arlie Russell Hochschild, *The Managed Heart: Commercialization of Human Feeling* (Berkeley: University of California Press, 1983), 168–69.

[73] Hochschild's binary gender framework reflects the time period in which she wrote, however, remarkably, she footnotes ways in which sexuality influences gender socialization and performance, hypothesizing that gay male flight attendant's "anticipation of company and public prejudice against homosexuality led them to adjust the value of their respect currency to that of their female co-workers." Ibid., 179.

[74] Andrew Ross, "In Search of the Lost Paycheck," in *Digital Labor: The Internet as Playground and Factory*, ed. Trebor Scholz (New York: Routledge, 2012), 13–32; Melissa Gregg, "Learning to (Love) Labour: Production Cultures and the Affective Turn," *Communication and Critical/Cultural Studies* 6, no. 2 (June 1, 2009): 209–14, doi:10.1080/14791420902868045.

prospective distributors and investors (whom they encourage to learn more about new company technologies) as well as for the technologies themselves (which require varying degrees of demystification). At the same time, as Laura Grindstaff and Emily West argue of actual cheerleaders, the feminization of their work relegates to them to the field's ideological sidelines.[75]

Like cheerleaders, booth babes are not only feminized, but sexualized; in that sense, their gendered labor exceeds the "conversational cheerleader" that concerns Hochschild.[76] As sex symbols, Taylor, Jenson, and de Castell argue, booth babes mark a male homosocial space (here, the tech industry rather than the sporting arena) as a site of heterosexual desire.[77] Costumes are perhaps the clearest indication of their sexualization, however, mastering an appropriately flirtatious affect is a crucial component of the work. As a model working a display of television sets told me, "they hire us because we look good, especially at shows where there are a lot of men, and we all know that, but you have to-" and then she paused, before finishing, "you have to pull them in." While an enticing image might circulate as part of press coverage, models on the show floor focus not on media images of their work but on interpersonal connections – flirtation – with convention-goers.

Models often described this aspect of their work through discourses of "fun," as in, "guys want to see girls having fun," and "they have fun when we have fun." These descriptions echo language sometimes used in job calls for tradeshow models while suggesting that in this case,

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[75] Laura Grindstaff and Emily West, "Cheerleading and the Gendered Politics of Sport," *Social Problems* 53, no. 4 (2006): 500–518.

[76] For a study of cheerleading as a pornographic motif, see Emma A. Jane, "Is Debbie Does Dallas Dangerous?: Representations of Cheerleading in Pornography and Some Possible Effects," *Feminist Media Studies*, May 27, 2016, 1–17, doi:10.1080/14680777.2016.1187641.

[77] Taylor, Jenson, and de Castell, "Cheerleaders/Booth Babes/ Halo Hoes," 248.

appeals to "fun" signal playful, heterosexual flirtation.[78] For instance, in 2015, perhaps the apex of hoverboard exhibition at CES,[79] more than one exhibitor of the devices employed models to ride the self-balancing scooters around the show floor. The models' jobs combined physical aptitude (demoing a hoverboard) with emotional labor (teaching others to use the devices). In the floor space around one such booth, models in plaid skirts and knee socks glided back and forth, asking, with easy double entendre, if anyone wanted to ride them. Because learning to ride a hoverboard takes practice, when an onlooker asked to try it, a model would hold his or her (but usually his) hands as they experimented, offering encouragement and pointers. Two men whom I watched try out the devices seemed disappointed that the skill didn't come as instantly as they'd expected, but happy to have the models hands for support. Everyone laughed good-naturedly whenever the men began to fall. Here, as elsewhere, the refrain, "they have fun when we have fun" indicates how flirtation functions as a form of emotional labor, which asks that workers manage the display of their own feelings as a means of cultivating feeling in others. "It's like you're supposed to be somebody's fantasy," explained a model tasked with ushering conventioneers into a lighting company's display. Or, as a one of the Hyper models put it, when asked to describe her performance on the tradeshow floor: "hot mannequin."

At the risk of reading too much into her quip, I wonder if we might register "mannequin" as signifying the physical presentation of feminine, white, Western beauty norms, and "hot" as their infusion with sensate liveness. In this reading, the model's warm-bloodedness gives the

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[78] See Bonnie Ruberg, "No Fun: The Queer Potential of Video Games That Annoy, Anger, Disappoint, Sadden, and Hurt," *QED: A Journal in GLBTQ Worldmaking* 2, no. 2 (2015): 108–24: "fun itself is not a natural and invariable experience…Fun is cultural, structural, gendered, and commonly hegemonic."

[79] The following year, citing safety concerns, CES banned hoverboards except in roped-off areas permitted to exhibitors only.

staid mannequin dynamism, even as she concertedly limits her affective register to being "hot." A mannequin that failed to register hotness would fail to manifest appropriate affective enticement. The association between temperature and affect has a long history; some of the earliest scientific studies of emotion, as Otniel Dror has shown, measured emotion through bodily temperature.[80] In a similar vein, though with a different disciplinary perspective, George Lakoff and Zoltan Kovecses argue for emotion's conceptual complexity by pointing to its semantic structures, which frequently rely on idiomatic temperature: "Let him *stew*" and "You make my *blood boil*" (original emphases).[81] As these examples indicate, in the Lakoff and Kovecses framework, reference to "increased body heat" signifies anger.[82] Here, I suggest we expand their focus to include its signification of eroticism. At times, the temperate idioms they identify as expressions of anger in fact suggest heat's erotic contours: "When the cop gave her a ticket, she got all *hot and bothered*" they write with emphasis, helpfully adding, "and started cursing."[83] Presumably, this example requires an additional clause because without it, the woman's encounter with the cop would seem to produce a different sort of affective intensity.

That the "hot" in "hot mannequin" signifies erotic affect no doubt most closely aligns with the model's intended meaning. I place it here alongside historical theories of affect and temperature because it alludes to the affective labor that enlivens the tech tradeshow. Shaping the

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[80] Otniel Dror, "Creating the Emotional Body: Confusion, Possibilities, and Knowledge," in *An Emotional History of the United States*, ed. Peter N. Stearns and Jan Lewis (New York: NYU Press, 1998), 173.

[81] George Lakoff and Zoltan Kovecses, "The Cognitive Model of Anger Inherent in American English," in *Cultural Models in Language and Thought*, ed. Dorothy Holland and Naomi Quinn (Cambridge: Cambridge University Press, 1987), 198.

[82] Ibid., 203.

[83] Ibid., 197.

cultural sensibilities of the tech expo through their own emotional management and the cultivation of affect in others, booth babes show how affective labor functions as a form of immaterial labor. Michael Hardt goes so far as to argue that affective labor constitutes the "binding element" of immaterial labor due to its relevance across a range of industrial sectors—including the entertainment industry, which he sees as "focused on the creation and manipulation of affects" and the service sector, where he locates affect in "moments of human interaction and communication."[84] Tradeshow models, as job calls outline, engage in both entertainment and service work, making affect doubly central to their jobs. For Hardt, these labors qualify as both affective and immaterial for the somewhat obvious reason that they produce immaterial affects: "a feeling of ease, well-being, satisfaction, enticement, passion—even a sense of connectedness or community."[85] At tradeshows, in addition to these affects, booth babes are tasked with creating a sense of the erotic.

Yet even affective, immaterial labor takes corporeal forms. Booth babe labor shows how affective labor and physical labor are not categorically distinct forms of work, because erotic performance is one very explicit way of using one's body to cultivate an embodied, affective response in someone else. For booth babes, the physical demands of the work take two primary forms. First, there are the physical demands of the day's work. Booth babe gigs often entail performing periodic dance routines throughout the day, as with Hyper's stylized dance routine set to an electro-pop number. While body-painted models set the tech accessory company apart among other exhibitors, its use of dance was (yes) routine. In 2015, for instance, audio company 808 had women in wedged heels and chunky headphones bopping in front of a DJ booth

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[84] Michael Hardt, "Affective Labor," *Boundary 2* 26, no. 2 (1999): 95–96.

[85] Ibid., 96.

pumping house music. The different styles invoked by these two routines worked to shape the ambiance of each booth, providing a specific cultural frame for its products. The performances, however, exceed the art of creating brand individuation through musical selection, a strategy deployed by corporate storefronts.[86] At these expo booths, the recorded musical tracks, like the media technologies on display, were enlivened by women's physical, sexualized labors. Their efforts enticed onlookers and bolstered the company's aesthetics as a means of introducing new technologies to the industry.

Companies that hire models for more stationary tasks likewise rely on their physical labors, where their efforts more readily go unseen. "You stand in one spot, in stilettos, for eight hours," said one model of the work's under-recognized physical demands, "and tell me how your back and feet feel." She fondly recalled a previous expo where the exhibitor decided, after the first day, that the models could spend the rest of the week in sneakers. Wearing sneakers instead of heels, she remarked, made it much easier to stay upbeat. The affective demands of the job are thus not only intertwined with its physical demands but require overcoming them. The lighting booth model who described booth babe work as performing a fantasy, dressed in four inch heels and a fitted white dress shirt, noted that her instructions often include the directive, "wear comfortable heels," an expression of concern for models' personal comfort as much as for their ability to stay energized and upbeat in order to properly do the job. And yet, she explained, when you're standing all day, "there's no such thing" as comfortable heels—but she said it smiling.

CES 2016 may have seen fewer booth babes dressed in the requisite four-inch heels than in years past, but the trend indicated an intensification of the job's physical demands rather than their relaxation: a rise in fitness technology, such as biometric tracking devices and smart sports

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[86] Anahid Kassabian, *Ubiquitous Listening: Affect, Attention, and Distributed Subjectivity* (Berkeley: University of California Press, 2013), 84.

equipment, led multiple companies to employ booth babes dressed in sneakers, who spent the full show performing aerobic routines and demoing workout devices. Where dance routines like Hyper's borrow aesthetics of avant-garde art, and 808's invoke the ambience of club performance, these athletic spectacles resemble high-energy workout videos. However, that the performances run eight hours a day for four days straight brings these routines into the realm of durational performance art: in 2016, women representing a fitness tracker manufacturer spent the entirety of the show doing aerobic routines inside the confines of their small booth. Clearly exerting intense energy over the extended run of the show, they nonetheless maintained their composure, smiling warmly at passersby. Their emotional management, that is, worked in tandem with their physical performance in order to create the booth's expo erotics.

Larger booths render these fitness performances still more theatrical. Among the most spectacular of these is iFit, a company that produces biometric tracking technology, which has gained a reputation at CES for staging spectacles that draw big crowds. In 2016, the company came to Vegas with about a dozen dancers and a six-person lighting and stage crew. At one end of their exhibition space, the company erected a stage about five feet off the ground, which increased its visibility on the crowded show floor. Every half hour it ran high-energy, choreographed routines set to upbeat pop hits; in between numbers, dancers stretched and did aerobics onstage and on the show floor below it. Importantly, iFit was among the few exhibitors at CES to employ both male and female performers; perhaps, relatedly, their booth babe team was hired from their local dance community rather than through an event modeling agency. However, where all of the iFit dancers were costumed in neon-colored workout clothes, female dancers dressed in more revealing outfits than did their male counterparts. As elsewhere on the show floor, their sculpted abs and photo-ready up-dos pointed to a second set of physical

demands placed on booth babe labor: uncompensated hours spent, say, at the gym or engaged in personal grooming. One model I spoke with described this labor, too, in explicitly theatrical terms: "people think, oh, you're glamorous, but it's like, you don't see the behind the scenes." Because booth babe labor is performed by a casual workforce, the "behind the scenes" work required to maintain a body eligible for representing a company at expos falls outside the purview of the industry. The industry derives value therefore not only from models' exertions onsite but from their after-hours work to produce themselves in the industry's image.

Other women made cases for their labor-value by describing themselves as knowledge-workers, even as they noted they aren't always utilized as such. "I like tech shows where I can have more of an educated, informative role, instead of being just another pretty face," reported a model at an audio booth. In a separate interview, a home appliance model articulated the work in near-identical terms: "We like to be trained, so we're not just a pretty face. We can give the information, as well." These statements anticipate and defend against a sentiment summed up by a lyric from librettist-turned-tech journalist David Pogue's musical number *Say C-E-Yes*: "The booth attendants may not know much tech/ But hey, they're really hot, so what the heck!"[87] The models' insistence that they're not "just" pretty reflects their bids for inclusion, or at least recognition, within an industry that considers them outsiders. By articulating their work according to the industry's labor values, these models argued against their irrelevancy in the face of critique that would have them displaced.

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[87] David Pogue, "Say C-E-Yes" (Keynote, CEA Innovate, New York, November 10, 2015). For further indication of the risqué or untoward connotations of the word "hot," see a music video version of the song produced by Yahoo, which replaces the lyric "they're really hot" with "they look like that": David Pogue, *CES: The Musical!* (Las Vegas: Yahoo, 2016), https://www.yahoo.com/tech/ces-the-musical-las-vegas-ces-the-annual-107639111709.html.

My point here is not that booth babes are experts in tech but that their lack of access to technical knowledge is a key aspect of what keeps the industry from recognizing their value. Failure to appreciate tradeshow modeling as tech industry labor dovetails with industrial bias against labor not categorized as a form of knowledge work. Marwick's study of Silicon Valley sociality shows how status accrues to those with access to knowledge of key topics in the industry (2013, 78). It follows, then, that to police divisions between industry "insiders" and the women hired to introduce new products, convention attendees sometimes make a point of showing gaps in booth babe knowledge. Many of the women with whom I spoke described their ideal CES interaction as encounters with conference-goers who get excited by their presentations; conversely, a near-universal complaint involved a certain type of CES attendee, always a man, who approaches models specifically to make them feel ignorant and out of place. For instance, a model tasked with guiding visitors through a TV network's interactive display described a man who cut her off partway through her demo ("do you even know what you're saying?") before asking for one of the free t-shirts that the booth was distributing. That is, he questioned her understanding of her own presentation not to gain clarification on a particular point but to make clear that, in his eyes, she didn't belong in tech. (Still more egregious are questions unrelated to technology altogether, as when a buyer asked a woman demoing a flat screen TV if she knew the capital of Vermont.)

These quizzes, intended to show that models lack the intelligence of tech workers, likewise reinforces bias that regards them as sexual objects rather than as laboring subjects, a sexism that sometimes leads to more explicit harassment. Noting that a chief task of tradeshow modeling involves posing for selfies with convention-goers, the audio booth model who previously described herself as a cheerleader remarked that a "normal guy," will pose beside her

and hold up his camera; a "creep" will start with an arm around her waist and inch it further down. Representing corporations, but without the protections of a corporate HR office, models develop their own strategies for addressing harassment without rupturing the affective performance required by the job. The model who described the offending selfie-takers, for instance, explained, "I literally just smack at their hands," which gets them to move their hands, and move along. Her coworker, who confirmed she's had the same experience, employs a slightly different strategy: "I'm like, 'don't touch me.' But you have to say it smiling." If the classified ad that promised CES would not be a "sleazy type atmosphere" implied the gig wouldn't involve sex, or sexual fondling, instances such as these make clear how the burden of maintaining the desired atmosphere falls on models themselves.

Regarded as tech industry outsiders and unprotected by the industry's cultural protocols, the booth babe workforce creates its own codes of professional conduct. The affective management central to booth babe labor is especially crucial in the face of the hostilities their work sometimes incurs. In addition to dispatching promptly and appropriately with inappropriate conventioneers, so too must models keep such encounters from coloring subsequent interactions with others who might be more receptive to their efforts, and, consequently, invested in the products they introduce. Contrary to the belief that booth babes constitute what one critic terms an "indefensible practice" in the tech industry because they are "hot girls" who are "lazy,"[88] the problem with booth babes is neither their work ethic (which goes unrecognized) nor their sexualization (which gets spectacularized), but the exploitation that their sexualization enables. "You know you're being used for your face, sex appeal, whatever," one of the models explained, "I just want to work the system."

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[88] Chen, "Booth Babes Don't Work."

The handmaiden of technology:
Exhibition and techno-eroticism

Despite the industry's disavowal, booth babes are entrenched in the exhibitionary logics of the tech tradeshow. Although the language applied to the job has shifted in accordance with cultural and industrial mores, women hired for their youth and beauty have been part of the show since its 1967 inception, when the newly-launched Consumer Electronics Show split from the National Association of Music Merchants. CES has long since ballooned to encompass dozens of sectors, swallowing competing events more often than it spawns offshoots.[89] The major annual tradeshow of at least one sector, however, originated in the halls of CES: the Adult Entertainment Expo.

Any accounting of the erotic economies of CES must include its longstanding, uneasy relationship with the porn industry. If booth babes have a sex industry analogue, it is the adult film stars who serve as talent at porn production company tradeshow exhibitions. In this case, however, the porn stars model themselves after booth babes more than the other way around. At the Adult expo, porn stars serve as brand images, used to draw visitors to the exhibitions of the companies they represent.[90]

The Adult Entertainment Expo's roots at the tech expo date to the advent of home video technology. A prototype of the videocassette recorder (VCR), produced by Sony, debuted at CES in 1970; its commercial release came the following year. By 1977, when Hollywood first began

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[89] Most significant of these is the Computer Dealers Exhibition (COMDEX), held primarily in Las Vegas from 1979 to 2003.

[90] Kevin Esch and Vicki Mayer, "How Unprofessional: The Profitable Partnership of Amateur Porn and Celebrity Culture," in *Pornification: Sex and Sexuality in Media Culture*, ed. Kaarina Nikunen, Susanna Paasonen, and Laura Saarenmaa (Oxford: Bloomsbury Academic, 2007), 99–114; David Foster Wallace, "Big Red Son," in *Consider the Lobster: And Other Essays* (New York: Little, Brown and Company, 2006), 11; Wendy McElroy, *XXX: A Woman's Right to Pornography* (New York: St. Martin's Press, 1995), 25.

putting major releases on video, the porn industry had already sold movies on videotape for at least a year, and it continued to outpace Hollywood for the rest of the decade; by the late 1970s, more than half of all videotapes in the United States featured pornographic content.[91] The reasons behind porn's early adoption of video technology are documented in legal histories and histories of media alike.[92] For one, VCRs afforded consumers newfound privacy, meaning that those reluctant to attend screenings of adult films in public could, after purchasing a VCR, watch video pornography in their own homes. Private viewing also offered protection to producers: in the 1970s, the United States tightened federal regulation of pornographic content, prompting porn producers, newly vulnerable to legal battles over public screenings of their work, to turn to video technology, playable on home VCRs rather than screening house film reels. These factors helped place the porn industry at the vanguard of the video revolution, which, in turn, led porn companies to CES.

By the mid-eighties, enough porn companies exhibited at CES that they received inclusion in the list of sectors officially represented at the show, along with a designated group exhibition space. To facilitate to the work of investors and buyers scouting prospective partners from particular sectors, CES allots proximate booth space for exhibitors from large sectors, such "Communications/ Infrastructure," or "Digital Imaging/ Photography." Inclusion in an official

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[91] Edwin Meese, "Attorney General's Commission on Pornography: Final Report" (Washington, DC: United States Government, 1986), http://www.porn-report.com/video-tape-cassettes-production.htm.

[92] For Legal arguments see Peter Johnson, "Pornography Drives Technology: Why *Not* to Censor the Internet," in *Pornography: Private Right or Public Menace?*, ed. Robert M. Baird and Stuart E. Rosenbaum, Revised ed. edition (Amherst, N.Y: Prometheus Books, 1998), 83–84; Frederick S. Lane, *Obscene Profits: The Entrepreneurs of Pornography in the Cyber Age* (New York: Routledge, 2001), 33; for media studies see Patchen Barss, *The Erotic Engine* (Toronto: Doubleday Canada, 2010), 91–92; Jonathan Coopersmith, "Pornography, Technology, and Progress," *Icon* 4 (1998): 105; Stephen Maddison, "From Porno-Topia to Total Information Awareness, or What Forces Really Govern Access to Porn," *New Formations*, no. 52 (2003): 51.

area thus signals a given sector's prominence within the multi-faceted tech industry. However, the emergence of the "Adult Video Section" reflected the adult entertainment sector's significance to the tech industry as much as it did CES's misgivings about granting porn a seat at the proverbial table: for the duration of its existence, the Adult Video Section (later, the Adult Software Section) took place in facilities far removed from the rest of the show.

The writer David Foster Wallace, who pseudonymously covered the Adult event for *Premiere* magazine in 1998, described it as "far and away CES's most popular venue…despite the fact that the CES itself treats the Adult tradeshow kind of like the crazy relative in the family."[93] Originally housed in the basement of the Sahara Hotel on the outskirts of the Vegas Strip, the Adult section eventually shifted west, to the Sands Expo and Convention Center at the midway point of the strip, long before CES began placing other events in adjacent spaces.[94] In press accounts, occupants of these spaces seem to resent their basement placements at least as much, if not more, than they do the distance between these venues and the rest of the show, particularly since they had no trouble attracting convention-goers, despite the distance.[95] Put a different way, Adult exhibitors may not have minded being represented as adjacent to the tech industry; that porn is more readily identified as an industry unto itself, rather than as a sector,

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[93] Wallace, "Big Red Son," 10.

[94] Similarly, in the years when CES held a summer show in Chicago, the Adult section took place in an air-conditionless tent outside the main exhibition halls. See Nick Wingfield, "Silicon and Silicone Split, as C.E.S. and Adult Entertainment Expo Part Ways," *The New York Times*, January 9, 2012, sec. Gadgetwise Blog, https://gadgetwise.blogs.nytimes.com/2012/01/09/silicon-and-silicone-split-as-c-e-s-and-porn-show-part-ways/.

[95] Gearlog, "Why the Porn Show and CES Happen the Same Week in Vegas," *Geek.com*, January 8, 2011, http://www.geek.com/ces/why-the-porn-show-and-ces-happen-the-same-week-in-vegas-1355453/; Wingfield, "Silicon and Silicone Split, as C.E.S. and Adult Entertainment Expo Part Ways."

attests to this separate status. But exhibitors took umbrage at the poor ambient conditions of their exhibition ("an enormous windowless all-cement space," wrote Wallace, "manages to induce both agoraphobia and claustrophobia"[96]) as well as the implication that their work was literally not respectable, that is, not respected by the tech expo.

The CTA (then the CEA) made its anxiety over porn's inclusion in the tradeshow felt in ways that exceeded the Adult section's remote placements. Perhaps most egregiously, adult film star Ron Jeremy recalls a time when "CES put up signs saying, 'Warning: Porn stars are using these bathrooms.'"[97] Another time, in a less personal affront to Adult exhibition booth staff but in a greater hindrance to their displays, the CEA sent a memo forbidding imagery of full-frontal nudity in exhibition signage, requiring exhibitors to place black dots over any offending images.[98] (Years later, in a refrain of this logic, the CTA would insist that Hyper dancers adhered to decency guidelines by wearing pasties.[99]) Observing the Adult exhibitors' resignation in response to the memo, libertarian feminist Wendy McElroy, who conducted research at CES 1994, surmises that, "pornographers were inured to being treated with contempt. What other

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[96] Wallace, "Big Red Son," 11. These conditions have little to do with the porn industry and everything to do with the space itself: today, it houses CES's startup section, where the ambient experience is similar.

[97] Ron Jeremy quoted in Christopher Trout, "Sex at CES: An Uncomfortable Coupling," *Engadget*, December 29, 2016, https://www.engadget.com/2016/12/29/sex-at-ces-an-uncomfortable-coupling/.

[98] See McElroy, *XXX*, 16: "The hotel management had provided sheets and sheets of these dots."

[99] Connie Guglielmo, "CES Doesn't Think Booth Babes Are A Problem. Here's Why They're Wrong," *Forbes*, January 30, 2013, http://www.forbes.com/sites/connieguglielmo/2013/01/30/ces-has-no-formal-complaints-about-booth-babes-time-to-change-that/.

industry would so blithely accept not being able to display its wares at its own conference?"[100] McElroy's book, one of the earliest critical studies of hard-core pornography's work cultures, in fact begins with CES, suggesting the strength of the porn industry's association with the tech expo, even as the policies she describes indicate CES's attempts to distance itself from porn's tawdry cultural connotations.

Despite these tensions, CES remained the primary annual gathering of the North American porn industry throughout the 1980's and 1990's—and even, more or less, the 2000's, although by then the Adult show had splintered into its own event. Beginning in 1998, *Adult Video News* took over the Adult exhibition from CES, renaming it the AVN Adult Entertainment Expo. The industry trade publication already enjoyed prominence at the tradeshow because of the AVN Awards, the so-called "Oscars of porn," held annually during the event. Because the Adult show continued alongside CES, the industrial reorganization had little impact on CES attendees, who, as presumed fans and prospective business partners, continued to receive free admission to the porn expo with a CES conference badge.[101] By some measures, CES attendees constituted 30% or 40% of AVN foot-traffic into the end of the 2000s.[102] In fact, the relationship remained so close that in 2012, when the AVN pushed its expo to later in the month, the rupture

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[100] McElroy, *XXX*, 17.

[101] In the early years, that the shows were actually two separate events was imperceptible to attendees; tellingly, although Wallace's *Premiere* story covers the first year the AVN owned the event, he writes about it as a component of CES.

[102] Chris Matyszcyk, "How Will CES Cope Without Porn Stars?," *CNET*, January 3, 2012, https://www.cnet.com/news/how-will-ces-cope-without-porn-stars/; Wingfield, "Silicon and Silicone Split, as C.E.S. and Adult Entertainment Expo Part Ways"; Gearlog, "Why the Porn Show and CES Happen the Same Week in Vegas."

received national media attention: "Silicon and Silicone Split," announced the *New York Times*, which called the move "a rare disruption of two yin-and-yang forces."[103]

Dual explanations for the split proffered by the AVN and the CTA bespeak the organizations' asymmetrical relationship. In multiple press interviews, AVN representatives explained, over and over, how a 2012 "date pattern" required that the AVN take place later in the month, so that the awards night could fall on a weekend and not disrupt its members' weekday work schedules.[104] The CTA, meanwhile, said very little about the move until the BBC produced its segment on CES booth babes. Then, in his statement responding to the segment, Shapiro countered, "The suggestion that I somehow don't support women in the tech industry or at CES is demonstrably false. First, I led the internal battle to ensure our divorce from the adult video show."[105] The implication, of course, is that if booth babes are bad, porn is worse. Or, more, specifically, if booth babes make women feel they don't belong in a tech, a porn expo employs even more exclusionary logics.

Indeed, many of those who bemoaned the 2012 split between the porn tradeshow and the tech tradeshow candidly expressed regressive attitudes about who belongs at the events. "The demographic for CES is all men. Same with the porn convention," complained a research scientist to *The Las Vegas Sun*. "Realistically, they should go hand in hand. It was a perfect

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[103] Wingfield, "Silicon and Silicone Split, as C.E.S. and Adult Entertainment Expo Part Ways."

[104] Matyszcyk, "How Will CES Cope Without Porn Stars?"; Conor Shine, "Why Porn Queens and CES Tech Geeks Have Parted Ways," January 17, 2012, https://lasvegassun.com/news/2012/jan/17/why-vegas-porn-convention-decided-meet-week-after-/; Wingfield, "Silicon and Silicone Split, as C.E.S. and Adult Entertainment Expo Part Ways."

[105] Honan, "This Kind of Ignorance Is What Gives Gadget Guys A Bad Name (Updated)."

collaboration – like white on rice."[106] Attitudes such as his, which hail tech as a boy's club – or even as a "gentleman's club" – make clear why a CTA president who purportedly "supports women in tech" would seek a break with the porn expo.

On another level, however, Shapiro's defense misses the mark entirely. Pornography is not only intertwined with the tech industry, it frequently experiments with the very cutting edge technologies that CES is devoted to showcasing. McElroy, whose chief investment in porn lies in its potential as a tactic of feminist liberation, links porn's fallen prestige at CES 1994 to the erosion of videotape's status as an innovative technology. Attention to media history, however, shows that porn's relationship to technological innovation far exceeds the emergence of video technology that brought porn exhibitors to CES, a convergence which had as much to do with the legal and cultural landscapes of the late seventies and early eighties as with the media innovation of that period. Although the tech industry's trade publications tend to reject the thesis that porn drives technological innovation,[107] the popular press regularly heralds pornography as "the handmaiden of new technology,"[108] "the erotic engine,"[109] and, as in one much-cited *New York Times* op-ed, "the low-slung engine of progress."[110]

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[106] Jeff Lewis quoted in Shine, "Why Porn Queens and CES Tech Geeks Have Parted Ways."

[107] Chris Matyszcyk, "So Porn Revolutionizes Technology, Right?," *CNET*, June 20, 2009, https://www.cnet.com/news/so-porn-revolutionizes-technology-right/. Significantly, the rhetorical mode of this rebuttal is heavy on ridicule but light on facts.

[108] Mark Ward, "Will Porn Kick-Start the Video Phone Revolution?," *BBC News*, June 16, 2003, http://news.bbc.co.uk/2/hi/technology/2992914.stm.

[109] Barss, *The Erotic Engine*.

[110] John Tierney, "Porn, the Low-Slung Engine of Progress," *The New York Times*, January 9, 1994, sec. Arts, http://www.nytimes.com/1994/01/09/arts/porn-the-low-slung-engine-of-progress.html.

A major scholarly study of porn's intersections with technological innovation remains to be written. While a full historiographic account exceeds the scope of this chapter, its focus on the uses of eroticism at CES merits a brief sketch of some of the other roles that erotica plays across nodes of technological emergence. The decade before porn producers adopted the VCR, for example, instant photography, pioneered on the market by Polaroid, drew early adopters from 1960s swingers circles. Analyzing requests for photos that appeared in swingers' classified ads, Charles Edgley and Kenneth Kiser surmise that nude photos, taken with the first Polaroid cameras, became standard practice among swinging communities by serving a triple purpose: they provided potential partners the opportunity to assess each others' attractiveness, alleviated the social risks of using local film developers for nude pictures, and ensured trust between recipients by functioning as a form of "mutual extortion."[111]

In an instance of users and tech developers mutually shaping the social connotations of technology, Polaroid appears to have winked at this community of early adopters, and perhaps encouraged its growth, by naming its 1965 camera model "The Swinger." The marketing campaign that accompanied the camera's launch, "Meet the Swinger," promised users, "it's more than a camera – it's almost alive!" Whether the camera drew its liveness from the rapidity with which it developed a photographic image or from the virility of the images it could capture remained up to viewers to determine. Action sequences depicted in commercials – women and couples walking along the beach, playing volleyball, climbing trees, riding bicycles – capitalized on shifting cultural mores by adhering to norms of social propriety while keeping sexual subtext close to the surface for those in the know (or those who wanted to know). If these implications were subtle in 1965, to contemporary eyes, the allusions to mediated sex are striking: one

[111] Charles Edgley and Kenneth Kiser, "Polaroid Sex: Deviant Possibilities in a Technological Age," *Journal of American Culture* 5, no. 1 (1982): 60.

commercial begins with a close-up of a woman's bikini bottom as she dangles the camera from her hands; another features a quick but vivid shot of a Polaroid photograph in which a woman cups her lips around a hotdog that a man spears into her mouth.

Despite the underground rise of what Edgley and Kiser call "Polaroid sex," instant photography is no more inherently a pornographic medium than is video technology, but that is precisely the point. These are just two among many examples of emerging technologies finding early uses through the mediation of erotic content. These underground uses of new technologies are often a crucial phase of their commercialization. As Stephen Maddison argues, "pornography has been structurally important in sustaining the viability of new media forms until market penetration is sufficient to generate significant revenue streams from non-pornographic content."[112] Following this thesis, we might say that swingers, drawn to the reduced risks associated with what today would be called a nude selfie, purchased the first, expensive Polaroid cameras, which helped the company accrue the capital necessary to produce a less expensive model.

As countless studies of pornographic media are quick to note, humans have depicted nude bodies, sex acts, and other forms of erotica via every available medium of representation, from the paintings in the ancient brothels of Pompeii[113] to the markings on cave walls of the prehistoric world.[114] Perhaps it is unsurprising, then, when a new recording technology's earliest uses center on erotic content—however the link between techno-eroticism and emerging

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[112] Maddison, "From Porno-Topia to Total Information Awareness, or What Forces Really Govern Access to Porn," 52.

[113] Walter M Kendrick, *The Secret Museum: Pornography in Modern Culture* (New York: Viking, 1987), 5.

[114] Edgley and Kiser, "Polaroid Sex," 59.

Figure 11: Dancers perform onstage in the expo hall, CES, 2016. (Photo by the author.)

Figure 12: Polaroid photograph included in TV commercial, 1965. (Still from digitized commercial.)

technology exceeds representational media such as video and photography. Multiple studies of web pornography, for instance, credit it with establishing technological forms and protocols foundational to internet commerce, such as secure online credit card processing and monthly subscription fees, "greasing the rails," as David Bennett puts it, for the internet's widespread commercialization.[115] Moreover, pornography's influence in technological development surpasses even its influence on emerging media's financialization. Wendy Chun argues that web pornography not only "initiated the Internet gold rush," but "caused media, government, and commercial companies to debate seriously and publically the status of the internet as a mass medium."[116] In her analysis, the internet's early pornographic content shaped its emerging cultural connotations as a medium of social concern. In other words, pornography marked the internet not only as a medium of representation but of communication.

Finally, pornographic content drives the development of technological forms themselves. "Some of the most interesting ways that pornography has shaped the internet and other high-tech developments had less to do with money," contends Patchen Barss in his popular history of porn and media technologies, "than with a widespread and powerful desire to find new ways to manifest sexual expression."[117] In less rosy media histories, the convergences of pornography

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[115] David Bennett, "Pornography–Dot–Com: Eroticising Privacy on the Internet," *Review of Education, Pedagogy, and Cultural Studies* 23, no. 4 (January 1, 2001): 381, doi:10.1080/1071441010230404; See also David Slayden, "Debbie Does Dallas Again and Again: Pornography, Technology, and Market Innovation," in *Porn.com: Making Sense of Online Pornography*, ed. Feona Attwood (New York: Peter Lang, 2010), 58; Coopersmith, "Pornogoraphy, Technology, and Progress," 112–13; Maddison, "From Porno-Topia to Total Information Awareness, or What Forces Really Govern Access to Porn," 52.

[116] Wendy Hui Kyong Chun, *Control and Freedom: Power and Paranoia in the Age of Fiber Optics* (Cambridge: MIT Press, 2008), 79.

[117] Barss, *The Erotic Engine*, 4.

and technological development stem from the particular cultural enthusiasms – and gendered dynamics – of tech work cultures. For instance, Jonathan Coopersmith notes that, "in the era of punch cards and impact printers, some programmers posted low resolution computer printouts of pin-ups on their walls…as a visible testimony of the programmer's technical prowess."[118] In this anecdote, which bears traces of contemporary criticism that booth babes reflect a pervasive boy's club atmosphere in the tech world, the lineage of modern computing includes programmers who honed their skills through the reproduction of pinup girls.[119]

A more pronounced but less well-known example of the "interesting ways that pornography has shaped the internet" exists in the history of the Lena image, a standardized digital compression test-image whose origins Dylan Mulvin traces to a 1972 *Playboy* centerfold. In Mulvin's analysis, the image indexes a history of technological mastery demonstrated through the manipulation of women's images and the institutionalization of heterosexual male vision.[120] Although narratives of how engineers at the University of Southern California came to digitize the soft-core centerfold recount conflicting explanations, the account that Mulvin deems most credible locates its origins in a group of research scientists "hurriedly searching the lab for a

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[118] Coopersmith, "Pornography, Technology, and Progress," 108.

[119] In what is likely a digital mutation of this practice, early programmers posted pinup-styled images to early web-based bulletin board systems created out of the limited characters available in the ASCII text system, a practice known as "ASCII pr0n." Annalee Newitz dubs ASCII pr0n "the world's first Internet pornography." See Annalee Newitz, "On-the-Go Porn," *Salon*, June 4, 2001, http://www.salon.com/2001/06/04/handheld_pr0n/.

[120] Dylan Mulvin, "Reference Materials: The People, Places, and Things of Making Measurements" (Dissertation, McGill University, 2016), 155, http://digitool.library.mcgill.ca/R/LDS1FCXUELXC2RBNA32AC1GPSTXR4H6VG14ETPY89Q7MAIVI28-00140?func=results-jump-full&set_entry=000015&set_number=003829&base=GEN01-MCG02. Emphasis added.

good image to scan for a colleague's *conference paper*."[121] In other words, engineers wishing to impress an audience of their peers, at a live presentation, with their image processor's technological capabilities turned to an image of sexualized femininity, which then became a standard of digitization. Perhaps more than any other, this history makes clear how the modes of eroticism deployed as part of tech exhibition, far from superfluous to technological development, become encoded in emerging technologies.

When tradeshow models execute sexualized performance at CES, their work reflects the promotional logics of late capitalism, which the next section will consider in detail. However, their work should also register as part of a larger media history that locates erotica on the technological vanguard. Just as pornography influences the social uses, business models, cultural connotations, and technical standards of emerging technology, so too is erotic performance central to technology's industrial exhibition on the tradeshow floor. Porn's exclusion from the annual tech tradeshow, despite the porn industry's leadership in technological innovation, shows that industrial distinctions over what to include as part of the tech industry – and what to exclude – are tied to social values as much as they are to technological development. These values, which discount technology's erotic influences, enable the industry's under-valuation of its tradeshow model workforce, whose erotic performances fall outside the tech industry's definitions of itself, even as it relies on their labor for the presentation of its products.

Towards a theory of promosexuality:
A booth babe coda

The managed eroticism of booth babes' affective labor shapes the cultural connotations of the technologies they present, even as their labors go undervalued by an industry whose

[121] Jamie Hutchinson quoted in ibid., 91.

ideologies prize knowledge work and material production over the physical and affective labors of guiding prototypes to market. Despite industrial discourses that disavow the sexualization of women on the tradeshow floor, job calls make clear that models are hired according to a corporate erotics, used to entice conventioneers to visit their exhibitions and provide a living frame for its products. Whether labeled booth hostesses, brand ambassadors, or promotional models, the women who perform the work articulate the labor struggles of a precarious workforce, revealing disjunctures between the work involved in performing expo spectacles and industrial discourses that see their labor as decorative rather than productive.

Even as the tech industry relegates booth babes to its ideological outskirts, the modes of work involved in booth babe labor are becoming increasingly common across a range of late capitalist jobs and sectors. Hardt's identification of affect as "directly productive of capital" in post-industrial economies addresses a global rise in labor that entails managing emotional experience.[122] Particularly salient to booth babe work, Soile Veijola and Eeva Jokinen go so far as to theorize "hostessing" as the foundational principal of labor in the contemporary economy. They argue that, as jobs once performed "on assembly lines and in office cubicles" give way to work worlds dominated by "deliveries of *services* and *experiences*," work relations "have started to resemble affective and communication relations usually connected with the *home*," and, moreover, this work "specifically requires skills that are considered either *female virtues* or *feminine vices*," (original italics).[123] Flexibilized, feminized work—centered on hostessing—thus functions not as a peripheral mode of social labor but as a key form of work under post-Fordism.

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[122] Hardt, "Affective Labor," 97.

[123] Soile Veijola and Eeva Jokinen, "Towards a Hostessing Society? Mobile Arrangements of Gender and Labour," *NORA: Nordic Journal of Women's Studies* 16, no. 3 (August 2008): 168, doi:10.1080/08038740802279901.

Far from an outmoded holdover of some previous, more misogynist industrial era, in this final estimation, booth babe labor entails skillsets that drive late capitalist labor across the gender spectrum in a range of fields. Nancy Baym, for instance, recognizes a form of hostess labor in the social media presences of musical artists, through which they foster relations with fans; as with much feminized labor, musicians receive no direct compensation for this work, which is nonetheless crucial to their career development.[124] Like Veijola and Jokinen, Baym sees this trend as indicative of the future of work, broadly conceived. From a labor perspective, booth babes represent one of the great vanguards on display at CES, emblematic of late capitalist labor that increasingly requires cultivating one's own affective presence and forging affective connections with others, even as the skills required by such work are awarded erratic monetary valuation and precarious employment.

At the same time, booth babes explicitly represent the late capitalist corporation, a function signaled by their role as brand ambassadors. Unlike Baym's independent artists, whose hostess labor involves the construction of a coherent *personal* identity,[125] what some would call a *self-brand*,[126] booth babes perform a legible *corporate* identity, constitutive of a *company brand*. Might we regard this work as an affective embodiment of corporate personhood? Where "the branded self," in Alison Hearn's articulation, operates "as a commodity for sale in the labor market" by crafting "its own promotional skin within the confines of the dominant corporate

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[124] Nancy K. Baym, "Connect With Your Audience! The Relational Labor of Connection," *The Communication Review* 18, no. 1 (January 2, 2015): 19–20, doi:10.1080/10714421.2015.996401.

[125] Ibid., 19.

[126] Marwick, *Status Update*, 165–71; Banet-Weiser, *AuthenticTM*, 51–89; Alison Hearn, "'Meat, Mask, Burden': Probing the Contours of the Branded 'self,'" *Journal of Consumer Culture Journal of Consumer Culture* 8, no. 2 (2008): 197–217.

imaginary,"[127] CES exhibitors brand their capitalist enterprises with the skin of promotional models.

When Hyper literalized the metaphor, painting its logos onto models' bodies, the most prominent activist responses took aim precisely at issues of representation. First, The Representation Project, a nonprofit that fights for empowering representations of women and minorities in popular media, instigated a social media campaign critical of Hyper, whose online presences became flooded by commenters upset with images of its exhibition.[128] Similarly, the petition that urged CES to ban booth babes argued, "the problem is with what they're wearing—and what they represent."[129] An irony of these critiques is that they apprehend booth babes as egregious representations of women by the tech industry, but not as actual women employed by the tech industry.

A representational framework might more productively consider booth babe labor as representative of corporations. This approach takes up industrial discourses of tradeshow model labor, exemplified by a job ad that calls for applicants who will "engage and interact with consumers *on behalf of* the brand" (italics mine). Moreover, it aligns with models' own senses of the work, which they see not as emblematic of women but as representative of particular companies. "They want it taken seriously," explained one CES model, of her employer's expectations of her performance. "It's a brand image thing." Note the ambivalence: the exhibitor wants its brand image taken seriously, and, at the same time, wants its models taken seriously as

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[127] Hearn, "Meat, Mask, Burden," 201.

[128] Imran Siddiquee, "Sexism on Display: Women Openly Degraded at CES," *The Representation Project*, January 11, 2013, http://therepresentationproject.org/sexism-on-display-women-openly-degraded-at-ces/.

[129] Guglielmo, "Gary Shapiro, CEO of the Consumer Electronics Association: Adopt a Dress Code Policy That Bans Booth Babes from CES."

an image of the brand. As both symbol and agent of the company's brand, that is, tradeshow models give commercial technologies social meaning. Interfacing between disparate industrial sectors, booth babes function as a proverbial face of the corporation—but perhaps, more importantly, they function as its body. Hired according to cultural beauty standards and costumed in outfits designed to highlight their physiques, booth babes are tasked with cultivating a managed eroticism on behalf of the companies whose products they exhibit.

Taking seriously (or at least semiseriously) the corporation's claim to personhood under U.S. Constitutional Law,[130] I suggest we identify its sexual orientation as "promosexuality." The erotic expression of the corporation is oriented toward capitalist promotion. Tradeshow models' sexualized spectacles, through which corporations generate excitement for new products ahead of their commercial release, provide one example of how corporations utilize sexuality in the service of capital. Because depictions of eroticism in public spaces tend to include "only young, slim, and beautiful women" who appear to "desire sex with men,"[131] an exclusionary and exploitative practice that feminist critics rightly find troubling, the erotic representation of identities that fall outside that description can seem like an abject taboo—or else so personal and intimate as to be inappropriate for public depiction. One theory of booth babes would thus hold that they matter to corporations less for their appeal to particular heterosexual males with specific (if popular) sexual proclivities than in their presumed ability to signify enticement. In this reading, booth babes bolster corporate aspirations toward personhood by performing the

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[130] Rebekah L. Fox and Ann E. Burnette, "Reframing Corporations as Individuals: The 'Persuasive Marvels' Unleashed by the Citizens United Ruling," *First Amendment Studies* 47, no. 2 (October 1, 2013): 153–69, doi:10.1080/21689725.2013.852796; Craig R. Smith, "The Evolution of Citizens United v. Federal Election Commission," *Free Speech Yearbook* 45, no. 1 (January 1, 2011): 131–40, doi:10.1080/08997225.2011.10556372.

[131] Gill, *Gender and the Media*, 259.

identities that most universally connote sexual subjectivity as embodied representations of companies.

However, the dimension of corporate personhood that I am calling promosexuality may map onto a range of human sexualities. As queer theorists have argued since the early nineties, when mainstream advertising in the United States first began to depict gays and lesbians, diverse sexual identities are easily aestheticized as market images.[132] These studies identify the utility of queer sexuality to capitalist expansion, as companies target previously invisible consumer groups while rendering signs of sexual identity as consumer choice. In theorizing the sexual dimensions of corporate personhood, I am emphatically not arguing that a company's use of lesbian imagery in advertising makes it a lesbian, just as I am not arguing that the sexualized labor of tradeshow models makes tech corporations into heterosexual femmes. Rather, I propose critical attention to promosexuality as a means of theorizing the role of erotic expression under a phase of capitalism where corporations take on heightened cultural identities. That tradeshow model labor requires the performance of sexualized identities "closely resembling the heterosexual male fantasy that is found in pornography" no doubt indicates a cultural hegemony that drives the tech industry's corporate decisions; it also shows how marginalized, feminized labor shapes the cultural formation of company brands.

As branding intensifies as a central facet of corporate character, promotional technics shift from sales strategies to markers of corporate identity. When corporations position themselves "as though they are 'citizens' under the law and in the public mind," argues Hearn, "the degree to which a brand is able to embody human attributes is dependent on the degree to

[132] Hennessy, "Queer Visibility in Commodity Culture," 31–76, doi:10.2307/1354421; Gluckman and Reed, "The Gay Marketing Moment," 16–35; Clark, "Commodity Lesbianism," 181–201.

which it is able to insinuate itself into the lives of consumers."[133] Attention to tradeshows shows how corporate branding in fact occurs prior to capital's circuits of circulation. During the brief duration of the tradeshow, where companies establish inroads with prospective industrial partners, a brand's ability to "embody human attributes" hinges on the vitality of its exhibition. At CES, tradeshow models enliven technological exhibition through promosexual acts.

[133] Hearn, "Meat, Mask, Burden," 214.

Conclusion:
Performance on the Peripheries

"I'm giving you one final order. Come to the cage door and submit to hand restraints! One final opportunity."

"No that's alright," calls a man in an orange jumpsuit at the edge of the chicken-wired slab of pavement. "You guys come to us. Let's play."

The crowd of onlookers laughs. Behind me, someone shouts, "Give him another round of gas!" Instead, the prison guards fire a round of pepper balls, or pepper spray pellets, into the edge of the cage. Then they advance inside, single file, and break into groups of three. In each triplet, a guard holding a canister of gas stands behind a guard aiming a pepper ball gun, who crouches over a third guard in the front, kneeling behind a translucent shield.

The guards open fire. The inmates hit the pavement, except for one, who leaps into the air, trying to dodge the spray of pepper balls by jumping up rather than down. "Oh my god!" says a young man next me, his own orange jumpsuit unsnapped over a t-shirt. We watch as the remaining inmate twists and tumbles. The man beside me cracks open a Pepsi. "That's why when I played prisoner, I went down right away."

Overhead, a buzzing drone films the proceedings.[1]

The Mock Prison Riot takes place every spring in Moundsville, West Virginia. Run by a foundation affiliated with the West Virginia Division of Corrections and sponsored by many of the companies that exhibit their wares at the event, the Mock Prison Riot has two chief

[1] West Virginia Corrections Training Foundation, "Prison Yard Scenario" (The Mock Prison Riot, Moundsville, WV, May 4, 2016).

components: tactical training sessions and a "Technology Showcase." The former take place on the grounds of the decommissioned West Virginia State Penitentiary, where, as in the tactical scenario described above, teams of prison personnel practice subduing uprisings staged by volunteer role players. The latter, a tradeshow exhibition, takes place inside an expo hall added to the prison grounds, where companies debut products and prototypes like the guns, gas canisters, and shields used in the above scenario, sometimes demoing their products in the prison yard in front of the hall. To the extent that these products are part of tech, they fall within the peripheries of the industry—although the presence of the drone, circling above the training scenario as a surveillance tool, indicates the way that product categories can move between commercial sectors. Here, I look briefly at some of the sectors in the tech industry's borderlands, in order to propose avenues of future study and to better apprehend the edges that define the industry.

Throughout the dissertation, I have argued that the ways technologies are used and understood emerge in part through presentations of newly developed products that take place at industry showcases, a process signaled by the Riot's emphasis on "tactics." The event's training scenarios make clear that using and understanding a new technology requires knowledge of its technical capacities as well as familiarity with its social context. Tradeshows enable exhibitors to cue understanding of their products while enlisting convention-goers' participation in finessing both the technical and social dimensions of the products on display. The Riot articulates this process by promising that exhibitors in the Technology Showcase "have unfettered access to the men and women who use their products, and many products are actually deployed on site during

training scenarios or demonstrations."[2] As the ANA advised in its 1968 guide to exploiting the "direct contact" afforded by tradeshows and exhibits, *"live demonstrations or audience participation are the prime requisites of a good show*."[3]

The Mock Prison Riot, which I attended in 2015 and 2016, provides an extreme illustration of the political stakes involved in demoing emerging technologies. The devices debuted in the expo hall enable increasingly sophisticated technologies of incarceration. Corrections divisions from across the United States, faced with swelling prison populations arising from decades of so-called "tough on crime" judicial policy, send teams to the Riot in order to gain familiarity with what organizers call, "the newest, most cutting edge law enforcement and corrections technologies."[4] The Riot's mission statement identifies the production of these products as synergistic, in that Technology Showcase exhibitors receive "suggestions for improvement and modifications that save time and money in the development process, provide guidance for crossover in disciplines, and shape the future of technologies and tactics in the law enforcement and corrections industry."[5] In other words, as I argued at the beginning of the dissertation, the nexus of sectors that convene at tradeshows jointly influence technological production processes. At the Riot, the development of technology arises from points of shared interest between prison personnel and weapons designers, chief components of

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[2] MPR, "Mission and Vision," *Mock Prison Riot*, accessed June 28, 2017, http://www.mockprisonriot.org/events/mock-prison-riot-2017/event-summary-bc6eac1d72c34b4f9c91111b67753cdb.aspx?lang=en.

[3] Goodale Stewart, *Trade Shows and Exhibits*, 1; 37.

[4] Michelle Alexander, *The New Jim Crow: Mass Incarceration in the Age of Colorblindness* (New Press, 2012); Travis C. Pratt, ed., *Addicted to Incarceration: Corrections Policy and the Politics of Misinformation* (Los Angeles: Sage Publications, 2008); Angela Y. Davis, *Are Prisons Obsolete?* (New York: Seven Stories Press, 2003); MPR, "Mission and Vision."

[5] MPR, "Mission and Vision."

what prison industry critics and abolitionists refer to as the prison-industrial complex, drawing attention to the corporate capitalist interests that intertwine with the policies and practices of an ostensibly public institution.[6] The Riot indicates how cross-sector negotiations that take place at tradeshows frequently have broader social implications, here signified by the bolstered commercial prospects and cultural practices of carceral technologies.

Live events, as I have argued, cultivate shared sensibilities among disparate groups of people. The political dimensions of solidarity – whom it includes, and to what ends – are likewise pointed aspects of the Riot. While most corrections personnel at the event come from state and county corrections departments in the United States, increasingly, the event attracts an international attendance. In 2016, a record-breaking thirty countries sent delegations to the Riot, some sponsored by the U.S. State Department, as part of its broader partnerships with criminal justice departments around the world, initiatives linked with efforts to curb the global spread of terror networks. Part of the political work of the Riot thus entails establishing global carceral norms. As a State Department representative explained in 2016, during the Riot, foreign delegations benefit from trainings and workshops; afterwards, they may incorporate some of the technologies that they learned about from the vendors at the Riot into their own programs.[7]

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[6] Davis, *Are Prisons Obsolete?*, 84–85. Critiques of the prison industrial complex sometimes reference the massive annual tradeshow of the American Correctional Association (ACA) as the clearest indication of a burgeoning industry with a vested interest in the perpetuation and expansion of the carceral system. See, for example, Heather Ann Thompson, "Downsizing the Carceral State," *Criminology & Public Policy* 10, no. 3 (August 1, 2011): 776, doi:10.1111/j.1745-9133.2011.00742.x: "so many companies have come to rely on a large and growing carceral state, and so many now have strong economic incentives to make sure that prisons populations are not reduced, that they have their own trade show."

[7] Because penal codes differ by country, some of the products at the Riot, which violate regulations in some countries but not others, have limited utility; companies, in these cases, may opt to adapt their products in order to meet a particular market, while country representatives may initiate processes to revise local or federal regulations in order to utilize the technologies.

In some senses, the technologies showcased at the Riot have clearer implications than do the emerging products on display at tech expos with broader focuses. Yet even here – or especially here – organizers of the event take great care in crafting an appropriate cultural frame. The prison yard riot scenario described above is one of many "real world" trainings provided by the Riot; others take place in cellblocks, dining halls, and infirmary rooms. Somewhat paradoxically, organizers describe the setting as "the most realistic and ideal conditions for training, technology deployment, and feedback."[8] Put another way, "ideal" conditions in which to rehearse a violent encounter are here understood as those that most closely represent the real. Knowledge of technologies intended for deployment in violent scenarios, under this framework, accrues through carefully staged rehearsals. When Riot organizers tout the prison facility and role-players as fostering "a living, breathing environment," they refer to the ways that taking part in the live event enhances participants' understanding of the technologies on display.[9]

Even so, the scenarios rehearsed by the Riot are, quite clearly, representations only. In the tactical training described above, for instance, the pepper ball guns were loaded with inert payloads; the role players wore gas masks and kneepads. Moreover, the "real world" structure of the prison, a massive gothic compound built during the American Civil War, is a grandiose, awe-inspiring structure that perhaps better resembles prisons of the historical imaginary than it does the facilities where Riot participants actually work.[10] The superintendent of a county jail in Massachusetts whom I met at the Riot noted that the physical space in fact has limited

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[8] MPR, "Mission and Vision."

[9] Ibid.

[10] One indication of the building's ability to signal an iconic prison: in recent years, it has served as a shoot location for film and television prison dramas. See "Mindhunter" (Netflix, 2017), http://www.imdb.com/title/tt5290382/; Scott Cooper, *Out of the Furnace*, Crime, Drama, Thriller, (2013), http://www.imdb.com/title/tt1206543/.

applicability to most prisons of the modern era, but added that because of the role-played scenarios, the event is "more realistic for corrections" than are tradeshows that display similar products, such as gun shows. As with office technology, carceral technology gains saliency through live performance.

The similarities, I think, end there. A computer and a chemical projectile are altogether different kinds of technologies. The very title given to the Technology Showcase at the Riot constitutes an extreme example of the depoliticizing work that appellations of technology often entail. Referring to the products on display in the expo hall as technology rather than as weaponry decenters their material power and political purpose. But then, industrial invocations of "technology" regularly bring a product's technical characteristics to the fore while effacing its political dimensions. When Steve Jobs introduced the iPhone as a revolutionary technology, he meant that the device would be technically awesome. In the vision espoused from the MacWorld stage, the "revolution" that the iPhone promised would improve users' lives but would not upend the social order.[11] Similarly, when startup investors identify technology as synonymous with scalability, they naturalize capitalist production. And when journalists refer to industry verticals as "sexy tech," they imply a broadly defined, abstract form of desire, even as the particular sexualized labors involved in tech development go unacknowledged by the industry. Each of these rhetorical maneuvers celebrates the advancement of technology while obscuring its particular relationships to cultural power.

Of course, effort to frame an industrial sector as apolitical itself involves political work. Tellingly, some of the most prominent sectors that exist in the borderlands of the tech industry have a difficult time presenting their products as politically or culturally neutral. As discussed in

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[11] Apple, *Steve Jobs Introduces the Original iPhone at Macworld SF (2007)* (EverySteveJobsVideo, 2013), https://www.youtube.com/watch?v=-3gw1XddJuc.

the previous chapter, that we speak of "the porn industry" or "the adult industry" – rather than regarding the media and technology of erotic representation as part of the media or technology industries – has more to do with social history than with ontology. Porn may rightly drive technological innovation, but hesitancy on the part of CES to align itself with a socially taboo field has prevented the adult sector from playing a central role in the annual tech tradeshow, and at times has kept it out of the show altogether. Similarly, the "Technology Showcase" at the Mock Prison Riot debuts products designed by engineers and tech developers in university and corporate labs, but despite the presence of an occasional gun booth at CES, most of the technologies on display at the Riot belong more squarely in "the arms industry" or "the defense industry" than they do in "the tech industry." A provocative avenue of further study might more fully investigate how these sectors on the peripheries of the tech industry articulate their relationships to technology. At least at the level of logistics, this work would be uncomplicated: following the Adult Expo's split with CES, the porn show began a partnership with the Shooting, Hunting, and Outdoor Trade Show, or SHOT Show, the annual Las Vegas gun expo.

Conceptually, fields tangentially linked to the tech industry have complex inter-relationships. When companies that engage in these disparate sectors articulate their products as technologies, they do so for different reasons: at the AVN Adult Entertainment Expo, claims to technological production lend porn social legitimacy, while at the Mock Prison Riot, invocations of technology function euphemistically, avoiding explicit reference to tools of violence and domination. The genteelism of "Technology Showcase" within the context of an event with such a pulpy title suggests the power of "technology" as a professionalizing discourse. Although the training sessions are serious work for the corrections teams, and the foundation that organizes the Riot engages in extensive business discourse in its literature describing the event, the visual

Figure 13: Tactical training session, Mock Prison Riot, 2015. (Photo by the author.)

Figure 14: Conference badge, Mock Prison Riot, 2015. (Photo by the author.)

cultures of promotion surrounding the Riot frame it as thrilling game, a break from the mediocrity of a job that one participant described to me as "the red-headed stepchild of law enforcement." For instance, in contrast to the bland name badges ubiquitous at most conferences, the Riot badges depict a figure repelling down from the sky, above a splotchy font, reminiscent of a video game cover. Within that setting, the staid "Technology Showcase" helps keep weapons exhibitors above the fray.

The technologies of industrialized sex and violence each deserve further study in their own right. Here, they are helpful as limit-cases of the social work involved in affiliation with "tech." The point here is not that smartphone developers or social media companies, ventures that operate in the center of the field rather than at its margins, have neutral cultural or political valances. On the contrary, as I have argued throughout the dissertation, acts designed to shape a product's cultural connotations and social uses constitute a key component of the production process. Rather, articulating a product as first and foremost a technology itself entails acts of performance, which often involve acts of disarticulation from other fields with stronger political or cultural resonances. Consider, for instance, Agrilyst, winner of the Startup Battlefield at TechCrunch Disrupt SF 2015, which more successfully articulated yet another of tech's borderlands – agricultural technology – to the ethos of Silicon Valley. By devising their agricultural technology venture as a tech startup, and showcasing it at a high-profile tech conference, Agrilyst's founders presented a field culturally associated with an agrarian past and, through a software demo, articulated it to a technologized future. Although agribusiness constitutes a major industry, and farming has its own complex and controversial political dimensions, Agrilyst's narrative sidestepped these by focusing on how superior tech can make

farming easier.[12] In doing so, Agrilyst presented a peripheral sector as a tech vertical in its own right. Agrilyst may well participate in more sector-specific tradeshows too; positioning the company as part of tech reframes agricultural technology according to the fashion logics of venture capital, what a tech journalist might call "the new sexy tech."

And yet, agricultural technology long precedes the advent of software. Indeed, where Benjamin looks to the Parisian Arcades of the late nineteenth century as the foundational spectacles of modernity, an alternate approach might consider a more provincial lineage: the North American country fairs that emerged during the same period. The prized pigs and carved butter sculptures on display at these events constituted aspirational exhibition.[13] Through annual showcases, counties and states sought to inspire communal adoption of newly emerging animal husbandry techniques and aestheticized domestic skills, while commercial displays of tools and equipment promised to enhance the productive capacities of the farm.[14] Like today's conferences, country fairs provided homesteaders with an annual opportunity to convene across distance, take stock of the community's technical development, and imagine its next steps. As an article lamenting the decline of state fairs recently put it, at the fairs of the 1800s, early Americans established "best practices."[15] Crucially, they did so through modes of spectacle much

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[12] Darin Barney, "I Guess You Had To Be There: The Making of Battle River Railway: The Movie," *Canadian Journal of Communication* 37, no. 1 (March 29, 2012), http://www.cjc-online.ca/index.php/journal/article/view/2585.

[13] Karal Ann Marling, "'She Brought Forth Butter in a Lordly Dish': The Origins of Minnesota Butter Sculpture," *Minnesota History* 50, no. 6 (1987): 218–28.

[14] Julie A. Avery, ed., *Agricultural Fairs in America: Tradition, Education, Celebration* (East Lansing: Michigan State University Press, 2000).

[15] Pooja Bhatia, "State Fairs Are a-Changin'," *OZY*, August 16, 2014, http://www.ozy.com/fast-forward/state-fairs-are-a-changin/33319.article.

like those of today's tradeshows and conventions: through live competition and exhibitory display.

What would it mean to consider modernity's spectacular roots from the perspective of rural settler colonialism rather than continental cosmopolitanism? It's worth noting, perhaps, that the same year that Baudelaire, in Benjamin's citation, expressed a quintessential cosmopolitan distaste for the countryside's untamed landscapes ("an open body of water is a monstrous thing to me; I want it incarcerated,"), half a world away, 165 exhibitors assembled on Machinery Hill at the Minnesota State Fair, showcasing what would today be called agricultural technology.[16] There, the countryside indicated prospects for a future with its own variety of technological sophistication. The annual fair known as The Great Minnesota Get-Together would go on to host one of the largest annual expos of agricultural technology in North America through the 1960s. However, when I conducted research there in 2015, Machinery Hill exhibited nearly as many saunas and sailboats – leisure machines – as it did tractor-trailers. While fairs have found new social purposes in eras of increased suburbanization, traces of the practices they established exist in a range of expos as well as in agricultural tradeshows; this history, too, represents a potential subject of future study.

Within tradeshows and conventions, agricultural technology expos likely bear the most direct resemblance to historical expos such as Machinery Hill's. Following the rise of corporate agribusiness in the latter part of the twentieth century, tradeshows and conventions emerged with

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[16] Charles Baudelaire quoted in Benjamin, *The Arcades Project*, 284; 1887 Minnesota State Agricultural Society Annual Report, quoted in Elizabeth Mohr, "State Fair's Machinery Hill Still Packs a Thrill," *Pioneer Press*, August 31, 2013, http://www.twincities.com/2013/08/31/state-fairs-machinery-hill-still-packs-a-thrill/.

Figure 15: Postcard of the Minnesota State Fair exhibition grounds, 1910. (Image courtesy of Minnesota Historical Society)

Figure 14: Postcard of Machinery Hill at the Minnesota State Fair, 1960s (Image courtesy of lapsed eBay listings)

more exclusive focuses on the future business prospects of farming.[17] Yet these events sometimes gesture nostalgically to their fair predecessors. For instance, the Commodity Classic, which bills itself as "American's largest farmer-led, farmer-focused convention and tradeshow," invites prospective convention-goers with a whimsical expression of fellowship reminiscent of more community-centered fairs: it welcomes "all friends of soybeans, wheat, and sorghum."[18] As I have argued, any live communal event both reconstitutes and renegotiates cultural norms. The Commodity Classic's cultivation of fellow-feeling among its attendees – and affinity for the products they produce – aligns with the social synergies created by MacWorld, TechCrunch Disrupt, and CES, even as the rhetoric it employs bespeaks an industry with a distinct social lineage. Its very title, "classic," connotes continuity rather than *TechCrunch*'s titular nod to disruption. And yet, when the Commodity Classic promises convention-goers they will encounter "emerging innovation," it borrows from the same business textbook as the tech event.[19] However distinct their social expressions, cultural boundaries between industrial sectors are permeable, and attention to the borderlands of the tech industry illuminates points of tension and alliance between overlapping product categories. At the same time, crossover success stories, such as Agrilyst's Disrupt Cup victory, shows how processes of spectacular negotiation redefine the edges of a field.

The names applied to an industry reflect ideological organizing principles, particularly during periods of expansive growth. Business discourses and critical analysis alike engage in

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[17] Mohr, "State Fair's Machinery Hill Still Packs a Thrill."

[18] Commodity Classic, "Commodity Classic," *Commodity Classic*, accessed July 2, 2015, http://www.commodityclassic.com/home.

[19] Commodity Classic, "Why Attend?," *Commodity Classic*, accessed July 2, 2017, http://www.commodityclassic.com/why-attend-.

ideological work when categorizing industrial sectors. For instance, in Horkheimer and Adorno's seminal identification of "the culture industry," their coinage critiques the incursions of corporate influence over the production of culture, which in their analysis includes film, radio, music, and television.[20] Hesmondhalgh both acknowledges and departs from this critical lineage in titling his field-defining study *The Cultural Industries*, which, through pluralization, signals the complex array of competing industrial interests involved in the production of culture, as well as a broad array of forms that cultural products take.[21] However, his continued appellation of "culture" (even in its adjectival form) designates the "the industrial production and circulation of texts" as the organizing principle of the field.[22] Other, overlapping terms, used both within and beyond business discourses, utilize alternate systems of categorization, such as intellectual labor ("the creative industries") or media forms ("the media industries"). Consequently, policymakers tend to employ the former, and media theorists the latter. In practice, distinctions between these categorizations are subtle. Hesmondhalgh notes that his book deals chiefly "with what might validly be called media industries," and Holt and Perren's preliminary anthology devoted to media industries addresses the very categories that Hesmondhalgh places at the forefront of the cultural industries: "film, radio, television, advertising, and digital media."[23] At the risk of splitting interchangeable hairs, we might ask whether preference for the term "media" as a form of industrial categorization effaces the intersections of industry and culture or, conversely, essentializes the role of media technology in cultural production and distribution.

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[20] Max Horkheimer, Theodor W. Adorno, and Gunzelin Noeri, *Dialectic of Enlightenment* (Stanford: Stanford University Press, 2002), 96–97.

[21] Hesmondhalgh, *The Cultural Industries*, 25.

[22] Ibid., 16.

[23] Ibid., 16–17; Holt and Perren, eds., *Media Industries*, 2.

In either case, the emergence of the "tech industry" as a discursive categorization highlights the industrial development of technical tools, disarticulated from the production of culture. Theorists and industry advocates alike parse the relationship between technology and cultural production. For Hesmondhalgh, "consumer electronics" and "information technology" themselves exist within the borderlands of the cultural industries. He contends that companies like Apple do not properly fit within the cultural industry on the grounds that, "Apple designs and markets devices that have affected the cultural industries profoundly but it does not produce texts."[24] Indeed, the reverential bows that Tim Cook and Bono exchanged onstage at Apple's product launch bespeak the complexity of Apple's incursions in popular music, a form of cultural production foundational to Horkheimer and Adorno's critique. However, critical attention to Apple's elaborate product announcements shows that these events, more than superficial marketing stunts, reflect its products' statuses as cultural commodities. The Macintosh is not a cultural object merely because Apple cast it as an actor at the 1984 shareholder's meeting. Rather, the introductory performance staged a dramatic representation of the technology's cultural dimensions.

While technologies like the Macintosh may produce culture differently than do the representational practices more traditionally categorized as media, the work of cultural production involved in debuting emerging technologies reflect their function as sites through which users experience meaning. Moreover, the care taken with these acts indicates the degree to which emerging technologies seldom enjoy stable connotations. Rather, technology's meanings

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[24] Hesmondhalgh, *The Cultural Industries*, 19. This distinction perhaps reflects one of the subtle distinctions between articulations of the cultural industries and the media industries, where, as I argue above, the latter adheres more closely to abstract notions of culture while the former engages more directly with its material forms; Holt and Perren note that their anthology "could easily be expanded," to cover a wide range of media, "even telecommunications." See Holt and Perren, *Media Industries*, 2.

are subject to complex forms of social negotiation, beginning with its industrial introduction and continuing through its circulation in social life. "Although they possess extraordinary inertia," argues Gitelman, "norms and standards can and do change, because they are expressive of changeable social, economic, and material relationships."[25] Through acts of live performance, companies work to shape the norms and standards that accrue to new technologies early in their emergence, even as the industry's technological emphasis effaces these products' cultural dimensions. Ambiguous recognition of the relationship between technology and cultural production partly accounts for the extensive popular debate over the "real" contribution of Steve Jobs at Apple, as well as industrial disregard for the women who introduce new technologies on the tradeshow floor. Foregrounding technical development over cultural production renders labors of performance inessential, even though, as in the examples that bookend this study, performances both revered and reviled comprise integral components of technology's production processes.

Moreover, a promotional spectacle revered by some may well be reviled by others, because reception of promotional performance is neither uniform nor guaranteed. Recall, for instance, the wild enthusiasm of the Apple auditorium when Tim Cook and Bono announced mass distribution of U2's newest album, in contrast with the condemnation the stunt received from a wider public. Similarly, for every blog post and news article protesting CES exhibitors' employment of scantily clad women, another media outlet publishes a photo spread that delights in the sexualized spectacles of the tradeshow floor. Indeed, the very drama of the Startup Battlefield at CES turns on uncertainty over which pitches the judges will most favor, a source of speculation and debate among audiences throughout the conference. These controversies show

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[25] Lisa Gitelman, *Always Already New: Media, History, and the Data of Culture* (Cambridge: MIT Press, 2008), 8.

how live presentations of emerging technology both inspire and engage in processes of social negotiation that shape technology's emergence. Whether they draw on the labor of models dressed as mermaids or founders in company tees, tradeshows and conferences always feature acts of provocative performance: they propose new futures for the industry, forecasted by the products on display.

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