Access Ability: Policies, Practices, and Representations of Disability Online

By

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A dissertation submitted in partial fulfillment of

the requirements for the degree of

Doctor of Philosophy

(Communication Arts)

at the

UNIVERSITY OF WISCONSIN-MADISON

2012

Date of final oral examination: 5/14/12

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Web accessibility–the processes by which online content is made usable by people with disabilities–is a complex process, which is governed by several official policies, implemented by various websites and professionals, and experienced differently by individuals with specific disabilities. As a result, it has not been seamlessly integrated with web content, and people with disabilities remain less likely to be web users than other Americans. In its complexity, web accessibility encourages consideration of media access not as a goal, but as a variable arrangement of conditions.

This dissertation looks to the social history of web accessibility in order to consider how access to media might better be understood and implemented across a variety of bodily abilities. Three main methodologies are used: first, historical research draws on archival documents, open-ended interviews, and policy documents to detail the formation of accessibility policies in the United States between 1985 and 2010; secondly, representational analysis of media texts, including popular press and fictional portrayals, demonstrates the ways in which disability was understood in relation to online technology; finally, participant observation of a disability blogosphere and open-ended interviews with bloggers illustrate the continuing challenges for people with disabilities in having their accessibility needs met. Together, these methods illustrate

persistent tensions surrounding intended audience, technical knowledge, disability rights, and the consumption and production of online content. By highlighting these tensions among stakeholders, and the resulting incomplete implementation of accessibility policies, this project challenges media studies' optimistic notions of "participatory culture," contributes to debates about an online public sphere, and augments critical disability studies' work on accommodation and equity. Finally, a new model for the study of media access is proposed, in which sociohistorical contexts, diverse points of entry, varied content, divergent media forms, and countless intended uses of media are treated as articulated spheres of analysis.

qualifications other than curiosity. She and Karen Wolf introduced me to web development, and web accessibility, and remain good friends and some of my most trusted sources regarding the technical material in this dissertation. At UW, Julie D'Acci gave me confidence in discussing theory and identity. Mary Beltrán encouraged me to look at disability in terms of representation and identity. And finally, Michael Curtin pushed me to consider questions of policy and industry; I vividly remember a moment in his television and new media seminar in which I went on a tangent about the variability of web content that is fully developed here.

I would also like to extend my gratitude to all of my graduate school colleagues in the Communication Arts department. As a masters student, I was welcomed and challenged by the other founding members of the New Media Studies Collective – Megan Sapnar Ankerson, Ben Aslinger, Germaine Halegoua, Josh Jackson, and Derek Johnson. All of them have contributed significantly to the ideas within this dissertation. My officemates over the years, especially Colin Burnett, Chris Cwynar, and Danny Kimball, provided many Thursday afternoons full of wide-ranging conversations from which I came away a smarter person. Kyle Conway, Evan Elkins, Kit Hughes, Kyra Hunting, Nick Marx, Myles McNutt, Sarah Murray, Nora Patterson, Matt Sienkiewicz, and Alyx Vesey have always asked me good question and provided valuable encouragement. Finally, Sreya Mitra, Lindsay Hogan, and Erin Copple Smith have been not only inspiring colleagues but fabulous friends, without whom I cannot even imagine having finished this project. I am particularly grateful to Erin for her support as we cross this milestone together– it's been really hard, but we have good lives ahead of us.

I would be remiss not to thank those who made this research possible. I received a Doctoral Dissertation Research Grant from the National Science Foundation, which facilitated a research trip to Washington, DC, enabling me to consult resources at the Library of Congress

a physics professor, who has been so supportive and enthusiastic about having yet another academic in the family.

Finally, my deepest thanks go to my husband, Sean Duncan. I watched him during his own dissertation process, but I know now that I could not have fully understood what he was going through. I, on the other hand, had the benefit of a partner who knew exactly what I was going through, and who still promised me that everything would be okay. I thank him for his unfailing belief in me, his willingness to make me dinner, and his ability to lighten my spirits even in the blackest moods. Additionally, I thank him for helping me talk through the most crucial parts of this project, including a major reorganization; I don't take criticism very well, but he still gives it to me when I need it, and this project is better because of his involvement. As much as this dissertation is a product of all of the aforementioned experiences and relationships, it is everything that he and I have accomplished together that makes it all worthwhile.

Introduction

Media Studies, Internet Studies, and the Intervention of Disability

The story, told and retold with somewhat different names and details, has become an academic

urban legend. Its outline is as follows: a male psychiatrist, Alex, entered online spaces under an

assumed identity as a woman with a disability, "Joan,"[1] described by Sherry Turkle as "severely

handicapped and disfigured," and unable therefore to leave the house or meet people in person,[2]

and by Jodi O'Brien as having damaged "speech and motor coordination."[3] Through

conversations over an extended period of time, "Joan" gained the trust of many women,

occasionally offered them therapy, and in some accounts, engaged in cybersex or set up dates

between these women and her "friend" Alex, leading to sexual relationships. Eventually, the

strain of passing under an assumed identity became too much for Alex, who decided to kill

"Joan" in order to end the elaborate deception. Going online, he posted that "Joan" was ill, and

those who befriended her attempted to contact hospitals and send their condolences, only to find

that she did not seem to exist. Those who considered Joan a friend, or even an inspiration due to

her attitude in the face of disability,[4] experienced shock, betrayal and outrage at the deception. In

fact, if this tale is treated as an urban legend—always a moralizing genre—its lesson is that we

must be wary of the truthfulness of those we encounter online, as they may easily be deceptive.

The first telling of this story seems to have been Lindsy Van Gelder's "The Strange Case

of the Electronic Lover," initially published in *Ms*. Magazine in 1985 and reprinted in several

anthologies dedicated to cyberculture.[5] Van Gelder described personally meeting "Joan" in 1983

on CompuServe, and living through Alex's revelations. Van Gelder's telling of this story, and

analysis, drew on interviews with others who knew Joan/Alex and their experiences with

"Joan's" sexual aggressiveness and eagerness to help, which often fostered dependency through the building of intimacy and, later, sexual intimacy.[6] Her focus was on the questions of intimacy and deception within the case of "Joan," not solely in relation to gender but in reference to online communication as a whole. However, Van Gelder also offered information related to the role of disability in the "Joan" incident. First, she stated that Joan had been embittered about the disabilities caused by the car accident and had been encouraged to reach out to others online by her mentor[7]; the internet, here, was posited as a solution to disability within the story, as "Joan" appeared to thrive through technology. She eventually traveled to conferences, got married, and appeared to be a widely known and liked individual, who, nonetheless, refused to meet her online friends. Notably, the first to question "Joan's" persona were disabled women in the community, for whom "Joan's" fantastic successes did not ring true.[8] This detail is left out of retellings of the deception and aftermath of Joan/Alex, apart from Roseanne Allucquère Stone's account, in which she wrote that these women "knew the exquisite problems of negotiating friendships, not to mention love relationships" with nondisabled peers,[9] and "Joan's" experiences did not reflect these experiences.

In analyzing this story, theorists took diverse approaches, nonetheless united in their general inattention to the role of disability.[10] Turkle was primarily interested in the boundaries between identity play as a healthy form of experimentation and identity deception as betrayal, leading her to focus on the aftermath of the revelation of "Joan" as Alex. Howard Rheingold invoked this story to discuss the assault on the community's trust, and the necessity of online communities understanding the very real possibility of deception in online interactions in order to deal with it productively and maintain a sense of community.[11] O'Brien used the story to make arguments about the importance of gender to organizing interpersonal interactions online and off.

Thus, she highlighted Alex's choice to pose as a woman because of the ways in which it led people to be more open in communication and ruminated on the perceived advantages of passing as specific genders and the potential violence in "coming out" as a different gender.[12] For Mark Poster, as well, the case was one of gender deception in which Alex used the "virtual community to make up for a perceived lack of feminine traits in his masculine sexual identity,"[13] demonstrating how gender could be reinscribed online in ways that differed from daily life. In Stone's chapter, "The Cross-Dressing Psychiatrist," she presented this story as an illustration of postmodern identity. Stone's analysis has drawn criticism for its reliance upon disability and prosthetics as "a touchstone, a prop, for her reflections here on the body and the difficulties of defining where it begins and ends."[14]

The widespread use of this particular story indicates that disability was not absent from early internet studies, but neither was it integrated; studies of online interaction, identity, and community breezed past disability and the attendant questions of access, non-users, and embodiment, of how actions are physically accomplished, or what technological tools are used. In interrogating other elements of identity, including self-presentation and gender fluidity, these theorists did not incorporate possible insights from consideration of a disabled identity. "Joan" could equally have been used to illustrate the persistent narrative of technology as "fixing" offline deficits, the conflict between online disembodiment and the legibility of the abled, as well as gendered, body, or the cultural norms by which disability is positioned as individual, domestic, and private (which made it such a convenient excuse for "Joan" to remain unseen). That none of these considerations, let alone passing or the processes by which people with disabilities actually interface with technology, were raised, indicates that early internet studies easily looked past disability even when it was directly in front of them.

This dissertation attempts to invert this inattention to disability in studies of digital media by analyzing the development of the internet, the World Wide Web, and the cultural hopes for these networked media through a lens of disability. From such a perspective, web accessibility– the means by which web content is made usable by people with a variety of disabilities, with or without the use of assistive technology–is a central concern. This study produces a critical cultural history of web accessibility in the United States, contributing to the existing body of literature on the evolution of the internet and the web by asking how disability, technology, and accessibility have been conceptualized in U.S. policies and the voluntary guidelines of the World Wide Web Consortium, how accessibility has been implemented, and how it is experienced by users with disabilities. This alternate history of the internet and World Wide Web is produced through mixed qualitative methods, including archival research, analysis of cultural texts, open-ended interviews with policymakers, and ethnographic study of a disability blogosphere. Throughout, my most crucial question is how we might better understand accessibility– conceptually, politically, and practically–in order to denaturalize generalizations about digital media use and ultimately foster more functional, inclusive, and personalized experiences with online technologies for a wide variety of users, including people with disabilities.

What is Web Accessibility?

The dream of the World Wide Web was of an egalitarian, global information space, for as Sir Tim Berners-Lee stated, "The Web must allow equal access to those in different economic and political situations; those who have physical or cognitive disabilities; those of different cultures; and those who use different languages that read in different directions across a page."[15] Yet, equal access has remained elusive. Barriers of geography, political situation, language, cost, race,

gender, and disability persist.[16] Disability, in particular, offers a productive stance from which to reexamine the advances of the internet and the web in the past 25 years, as the bodies and experiences of users with disabilities illustrate the assumptions built in to contemporary technologies and policies, as well as the ways in which such assumptions limit the potential of these advances for all people.[17] While computers and the Internet have been described as "liberation technologies,"[18] which give people with disabilities greater access to social, political, and cultural realms from which they had historically been excluded, these technologies have also produced disability by creating barriers to use by those whose disabilities place them outside the figure of the normative user. For instance, early on, the World Wide Web introduced graphical content that could not be understood by blind users, instituting a barrier to access that had not been present to the same degree in the text-only Internet. More recently, voice-over IP, online video, and dynamic Web content have introduced additional challenges for users with disabilities, whose bodies do not meet the often unstated requirements of these technologies.

In order to use websites and services, many people with disabilities rely on assistive technologies to alter the format of Web pages (such as screenreaders, which transform text into audio); however, this alteration relies upon Web pages being coded in such a way that technologies can parse and transform the code. This kind of code is described as "accessible," and best practices for accessible development are laid out in a variety of Web accessibility policies. The Web Accessibility Initiative (WAI) of the Worldwide Web Consortium (W3C) released the Web Content Accessibility Guidelines (WCAG) 1.0 in 1999 and released WCAG 2.0 in 2008, establishing voluntary guidelines for creating websites that would be accessible for users with visual, motion, aural or speech, and cognitive limitations. Legal standards in the United States were established by Section 508 of the Rehabilitation Act, and went into effect in

2001. These standards are currently being updated to accord with contemporary technological

tools and uses, and the Department of Justice is currently investigating means by which to

enforce accessibility under the Americans with Disabilities Act (ADA), passed in 1990. Despite

the existence of these policies, accessible sites have continued to be more the exception than the

rule,[19] and people with disabilities remain significantly less likely to be Internet users than the

population at large. As of 2010, only 54% of Americans with disabilities use the internet, as

compared to 81% of able-bodied Americans.[20] Web accessibility relies upon countless variables,

including policies, varied implementation by a host of Web developers and users, the capacities

of assistive technologies, and the expertise and motivations of users with disabilities.

Thus, in recounting the history of web accessibility within the United States, there is a

need to consider how accessibility is conceptualized and enacted at the levels of policy,

practices, and representations. My focus is accessibility within the United States, as the bulk of

critical literature on web accessibility comes out of British and Australian contexts,[21] and U.S.

standards often exert influence on other national and industrial policies, particularly given recent

attempts to harmonize international standards. The study of web accessibility is valuable for its

own sake, as this is an area of media history which has received relatively little attention, even

within bodies of work that trace internet and web history.[22] However, with a few notable

exceptions,[23] accessibility for people with disabilities has also been largely absent from studies

of earlier media forms. For all the discussion of "user-friendly" computer and internet

technologies and all the academic attention to digital media's new forms of participation and

interaction, disability has remained marginalized. This is both a problem and an opportunity, as

studying media from a point of view that is regularly hidden from view can expose new and

nuanced means of considering media access in general. By drawing attention to the issues of

embodiment, use, and equity that are crucial to fully understanding the history and experiences

of web accessibility, it is also possible to reconceive of the study of media access in these terms.

Such an approach builds on the legacy of cultural studies in analyzing popular media with an eye

on imbalances of cultural power, looking not to media content but to the simple means by which

media is (or is not) made usable to various individuals and groups of people.

Media Access as Theory, Experience, and Politics

Cultural studies offers a productive basis for the study of web accessibility, due to its focus on

how cultural politics expressed in popular media construct and perpetuate relationships of power

and experiences of identity and oppression. Furthermore, cultural studies requires close analysis

of cultural practices and artifacts, but it also attempts to tie these small moments to broader

theoretical constructs and structures of meaning in socio-historically specific contexts. The

negotiation of culturalist and structuralist strands of cultural studies, as described by Stuart Hall,

entails the simultaneous attempt to think through the specificity of cultural practices and to

attend to the unities and continuities that they produce.[24] Through the study of articulation, the

connection between discrete cultural texts or practices and their connection to political, material,

and economic conditions, cultural studies engages at the point where specific conditions meet

deep-seated structures of power.[25] The detailed examination of web accessibility and disability in

the online environment speaks back to contemporary discursive practices and material

articulations of access, equity, identity, and democratization of media production, among others.

Web accessibility–lodged as it is between legal codes, digital technologies, cultural

representations and physical embodiment–forces contention with the ways in which practices

and structures speak to one another. Additionally, by centering the study of disability as identity

and experience, the normative identities produced in and through digital media are revealed to have been constructed through the difference[26] of disability. Though this is true at the levels of representation and legal codification, as will be discussed in later chapters, the question of materiality in the use of media and the embodiment of users is particularly crucial in this study. As Julie D'Acci reminds us, the meanings and articulations of cultural studies analysis is "not simply about the meanings generated in TV programs or about meanings in the sense of ideas about things, but about meanings in the material sense of discursive practices that involve physical bodies, physical workplaces, the materiality of households or other viewing spaces, and subjective feelings generated."[27] As she indicates, the study of cultural meanings is broader than interpretations or texts, and extends to considerations of the means by which individuals come to and experience those meanings. This project takes up cultural studies attempts to demonstrate connections between the representational and the material, allowing the study of culture to illuminate the structures of society.

Furthermore, cultural studies political commitments to both theory and political practice are honored within this project, which aims not merely to theorize disability and media access, but to contribute to the real inclusion of people with disabilities in online media and cultural practices. Following Hall, the production of theory within this dissertation is a dialogic practice that is interested in intervening in the material, political world.[28] Through engagement with accessibility professionals and web users with disabilities, I have endeavored to make this research representative of and responsive to the experiences and theorizations of those about whom I speak. My hope is that this research contributes not just to theories of media access and participation, but to practical knowledge of web accessibility that may increase its implementation and benefit web users with disabilities. As cultural studies "holds theoretical and

political questions in an ever irresolvable but permanent tension,"[29] so this project attempts to balance the theoretical analyses of new media use with the political imperatives of a disability politics.

Building upon these theoretical perspectives, this alternate history of the web intervenes in media studies work on access. The inability of people with disabilities to access the Web, or other media, creates a climate in which they are only partially invited to participate in the kind of semiotic democracy[30] that informs the formation of political and cultural identities.[31] As Hall has insisted, identities are produced and performed through cultural texts and practices that enable forms of identification[32]; lack of access to texts and practices that foster such identification thus creates particular limitations on the taking up and expression of identities.[33] Furthermore, identity is closely connected to ideas of agency and the ability to take up a position as a political actor.[34] Because media play an important role in the creation of civic cultures through which individuals come to understand themselves as members of an identity group, nation, or international sphere and take political action,[35] lack of access to the media may lead to broader civic disenfranchisement. Online media in particular offer a space for the formation of supranational political publics capable of considering global challenges, such as pollution or human rights.[36] As disability rights gain prominence on the international stage, through the United Nations Convention on the Rights of People with Disabilities and the incipient European Union accessibility regulations, the opportunity for people with disabilities to advocate for themselves on a global scale through online media is of crucial importance.

Additionally, this dissertation research provides a necessary corrective concerning access to online media, calling into question generalizations about "participatory culture"[37] or "produsage"[38] that erase the differences in lived experiences of digital media. Media studies has

emphasized negotiations between cultural producers and consumers over the meaning of cultural artifacts, and literature on participatory culture attempts to address the shifts in these negotiations as consumers are empowered by digital and networked technology to create and distribute their own cultural knowledge and productions and to contribute to those of others.[39] In Henry Jenkins et al's "Confronting the Challenges of a Participatory Culture," the authors define participatory culture as having "low barriers to creative expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship," and treat it as a new form of cultural, economic and political activity that must be learned.[40] Jenkins' 2006 *Convergence Culture* focuses on the way that convergence–the flow of media across platforms, the cooperation between media industries, and migratory audiences–is altering relationships between media consumers and producers.[41] Jenkins sees audiences becoming more creative and participatory, and he sees media industries reaching out to encourage some forms of audience participation, in a convergence that is both bottom-up and top-down. Similarly, Axel Bruns' work on "produsage" uses concrete case studies to expand understandings of the cultural impact of participatory culture by focusing on the blending of the role of the online user and the producer along a continuum of produsage activities.[42]

Participatory culture offers an attractive vision of a techno-mediated future–or even present–in which increased access to cultural production, political participation, and social collaboration produces more just, egalitarian forms of culture. This is a world in which anyone can potentially be heard, transform the status quo, and build upon the work of others' outside of longstanding social hierarchies. The literature on participatory culture, however, suffers from a failure to seriously engage with issues of identity and social location as they relate to participation. Given the celebratory rhetoric of participatory culture regarding access, creativity

and political engagement, the cursory consideration of difference in these accounts represents a major oversight. If participatory culture only facilitates the participation of those who are already privileged, then its progressive potential is unrealized, if not transformed into a regressive affirmation of existing power structures. The necessity of understanding diverse users, particularly non-normative users, thus becomes a priority for extending this body of work. Furthermore, these cultural theorists tend to ignore the technical specificities that allow for participatory culture to develop, glossing over the databases, routers, screens, code, and links that make up the backbone of all internet content. By focusing on the access conditions and needs of people with disabilities in relation to digital media, these oversights spring into relief.

Finally, this project draws upon and contributes to studies of self-representation and audiences' use of media. Rather than focusing exclusively on the formation of accessibility policy or the practices of web development, ethnographic study of a disability blogosphere coupled with open-ended interviews create a vibrant picture of accessibility in the online lives of people with disabilities. To a degree, the promises of participatory culture extend to people with disabilities, who blog, Tweet, and produce a variety of other online content. Much of this content constitutes representations of the blogger him or herself, and supplements the paucity of mainstream media representations of disability.[43]

Self-representation is key to considering online media and participatory culture, as much of social networking, blogging, and other forms of online media creation draw heavily on the display of the self. Recently, some media and cultural studies scholarship has discussed "digital storytelling," a workshop practice in which people are given digital media tools and asked to use them to tell a story about themselves and put it online.[44] These workshops produce self-representations that draw on what participants know from their lives as media consumers, as well

as on older traditional and communicative practices such as scrapbooking, in what is described as "vernacular creativity.[45]" Similar identity and representational work is being done in a range of less-structured online media creation and participation, from YouTube videos to MySpace customizations and Flickr uploads.[46] Examining the ways in which such self-representations of disability challenge and accord with dominant disability formations will allow for greater understanding of how internet media tools and services, theories of participatory culture, and questions of access are being taken up and used by individuals.

The study of individuals' use of online media is similarly aided through ethnographic and interview research, which lends a quotidian perspective to the large-scale study of accessibility. Such an approach draws upon audience studies and studies of technological domestication. Studies of domestication have unified studies of audience reception of media texts with the symbolic and material meanings of technology in lived experience. In essence, I see this as a deeper level of the "intimate histories" of how we live with media. David Morley describes "intimate histories" as comprised of our memories of technology, historical shifts in meanings over time, and how technology is both domesticated (made familiar) and taken up in domestic spaces and lives.[47] Where Morley's reception research and theoretical contributions focus primarily on the use of media technologies in varied domestic spaces, I shift to studying the use of media technologies by individuals with varied bodies using variable technological configurations to achieve their goals.

Cyborgs, Difference, and Internet Studies

In addition to media and cultural studies, this project is indebted to the nebulous field of internet studies, especially its insights into online identity, interpersonal communication, and its

theorizations of bodies and technology. Internet studies, for lack of a more specific term with the needed flexibility, emerged in the 1990s. United by its object of study, in that scholars examined texts and activities that existed online, the field nonetheless has incorporated a diversity of foci, methodologies, disciplines, and theoretical perspectives. In his history of this field, David Silver posited an emerging canon including Donna Haraway, N. Katherine Hayles, Lisa Nakamura, Howard Rheingold, Roseanne Allucquère Stone, and Sherry Turkle, among others.[48] I revisit this canon (and related scholarship), aware of its limitations, in order to highlight the paucity of attention to differences of access and ability during this early phase of internet studies.

Identity, communication, and community were major foci in early internet studies, as scholars wrestled with the new affordances of online media. *The Virtual Community*, by Howard Rheingold, was published in 1993, and made a strong argument in support of the validity of online socialization, as "people in virtual communities do just about everything people do in real life, but we leave our bodies behind."[49] Rheingold further argued that the relationships and exchanges that occurred online had important implications for real life experiences and institutions, and particularly for democratic forms of government. However, this initial step in the study of online communities largely avoided questions of identity and difference. Rheingold displayed a utopianism about the possibility of leaving the body behind and interacting as disembodied individuals, away from the possible stigmas of difference. The notion of online identity as disembodied was taken up in Sherry Turkle's 1995 *Life on the Screen*, which used ethnographic methods to understand people's relationships to technology, as she investigated the possibilities for identity play and exploration within online spaces. Turkle suggested that computer technology was enabling better understandings of postmodern theories of self and society as multiple, fragmented, and overlapping. Turkle affirmed the value of online community

and identity play without much consideration of potential negative effects or exclusions from these opportunities.

Additionally, a number of works in internet studies in the late 1990s and early 2000s incorporated ethnographic approaches to understanding people's experiences of the internet and addressing questions of identity. Several scholars in this period conducted studies of limited sites and highlighted users' understandings of their own behaviors and social norms.[50] However, the locality of these studies resulted in fairly homogenous populations, and thus in little focus on issues of identity and differences in use, other than analyses of gender. Lisa Nakamura extended this work to race in *Cybertypes*. Drawing on online ethnographic methods, as well as discursive analysis of advertisements, cyberpunk fiction, and films, Nakamura argued that differences in identity and access continued to affect behavior and experiences online.[51] Nakamura's work indicated the importance of physical and social identity categories in shaping online interactions and representations, but it did not address ability or the physical experiences of using technology. The question of the physicality of internet use was central to Annette Markham's ethnography, *Life Online*. Though Markham mentioned the possibility of leaving bodies behind, she did not embrace this perspective, ultimately wondering whether cyberculture theorists "who write about the transcendence of the body, the fragmentation of identity in cyberspace, the hyperreal, etc., may be making too much of the entire phenomenon."[52] *Life Online* focused on the persistence of the physical body, its aches and pains during computer use, and hunger and other bodily needs encroaching upon active online life, and the degree to which participants' experiences remained rooted in their bodies. Though she offers an important rumination on the physicality of computer and internet use, Markham stopped short of considering disability or other forms of diverse

embodiment that would create different physical experiences that were more or less pleasurable or difficult.

Disability was invoked far more frequently in 1990s academic literature that investigated the cyborg, or the relationship between the human body and technology. As described in Donna Haraway's "Cyborg Manifesto," the cyborg represented the increasingly blurred boundaries between human and animal, human and machine, in postmodernity. It could stand in for "transgressed boundaries, potent fusions, and dangerous possibilities which progressive people might explore as one part of needed political work,"[53] offering new models of identity, identification, and politics based on partiality and liminality, drawing upon women of color feminisms, and continuing the postmodern project of breaking down binary systems of classification. Haraway invoked disability in describing the pleasures of blending the human and the other, but did not explore it, suggesting that "perhaps paraplegics and other severely handicapped people can (and sometimes do) have the most intense experiences of complex hybridization with other communication devices," and that "machines can be prosthetic devices, intimate components, friendly selves."[54] In these formulations, disability was treated as a site for speculation, an example to suggest her point, but was not addressed as an actual lived, material experience that could inform her theory. Incorporation of actual experiences with prosthetics could well have offered further depth to Haraway's speculative cyborg future, but it could also have troubled it, as lived experiences of disability and assistive technology are often frustrating, painful, or stigmatizing rather than politically liberating.[55]

Haraway's work was widely taken up throughout the 1990s both to speak to the increasingly digital environment of (primarily) Western subjects and to speak to the politics of the gendered body, technology, and feminism. Cyborg theory remained, however, largely silent

or speculative about its relationship to disability. Constance Penley and Andrew Ross opened their anthology, *Technoculture*, with an overview of the rising importance of technology in everyday life, going on to suggest that "the highly developed technoculture of the handicapped" would be important for the development of cyborg theory[56]; their anthology, however, did not attempt integration of this body of knowledge. Like Haraway's essay, Penley and Ross' anthology failed to consider the complicated technohistory of disability, in which assistive devices have been welcomed and discarded, have improved and reduced quality of life, and in which mainstream media and technology have as easily created disability as ameliorated it.[57]

An alternative formulation to the cyborg was the posthuman, which similarly sidelined questions of ability in its analysis. *Posthuman Bodies*, edited by Judith Halberstam and Ira Livingston, posited its titular object of study as emerging "at nodes where bodies, bodies of discourse, and discourses of bodies intersect," blurring distinctions between individuals and their surroundings, expanding notions of the self and creating new kinds of identity.[58] Yet, nowhere in this anthology were the normalizing discourses of the able body interrogated. N. Katherine Hayles' *How We Became Posthuman* figured the posthuman as a construct that privileged information over materiality, considered consciousness peripheral, considered the body as a prosthesis, and figured human beings so that they might easily be integrated with intelligent machines.[59] Once again, the prosthesis was invoked apart from experiences of disability, as a metaphor or example with a rich history that was roundly ignored in service of a larger, and generalized, argument about the intersection of human and technology.

This literature only skims the surface of the available work on the cyborg. Countless anthologies, monographs, and academic articles addressed the cyborg or the posthuman in connection to a wide range of themes, including feminism, race, masculinity, medicine,

militarization, and reproduction, among others.[60] Yet disability remained largely unspoken within this work on the blending of the human and the technological, except at the metaphorical level.

The postmodernism of cyborg and cyberculture theory evidenced an optimism regarding the potential of new technologies to transform social relations, but demonstrated a lack of attention to the software and hardware interfaces that enabled these activities and fusions, and how they might disable other individuals or disallow particular activities. Lawrence Lessig's *Code* raised these questions by demonstrating the ways in which code dictates the possibilities and impossibilities of online activities, even using the example of disability. In writing about the ways in which the affordances and constraints of the early internet enabled and disabled certain ways of being, Lessig invoked the "blind, deaf, and ugly" as populations for whom the anonymity and text-based nature of the Web represented an improvement on face-to-face social interactions.[61] He went on to describe how the introduction of images, sound files, and multimedia recreated "blindness" and "deafness" as disabilities online, as the inability to see or hear were irrelevant in earlier code structures.[62] This was a relatively sophisticated description of online disability, but here, as when he later brought up the Americans with Disabilities Act as an example of regulation, Lessig admitted that his point was "not really about the 'disabled' at all"[63]; rather, disability was invoked as an example of how code can create and limit possibilities for users. Disability, then, was once again not treated on its own merits, but as a metaphor by which to make a larger point.

Gerard Goggin and Christopher Newell have suggested that the shallowness of engagement with disability in internet studies results from a conceptualization of disability as deficit that prevented scholars from looking to disability in the same way they looked to other

identity categories for insights into the online experience.[64] They tied this to larger

understandings of disability as deficiency, or an "ableism" in which society understands the able

body as normative and routinely conceives of disability as lesser. Such theories stem from

disability studies, a field of study in which disability is taken as a starting point for the analysis

of society.

Models of Disability and Critical Disability Studies

In order to find theorizations of disability and its relationship to media, technology, and society, I

turn to the field of disability studies. Drawing upon origins in disability activism in the United

States and United Kingdom during the 1970s, disability studies as an academic field emerged in

the 1990s. Disability studies emphasizes the lived experiences of disability, the reclamation of

the roles of people with disability in history, culture, and society, and the analysis of society

through a lens in which disability is conceptualized not as individual deficit but as a category of

identity created through social interactions. It is widely interdisciplinary, includes those scholars

who make disability a focus of their work, and at its core are scholars who "place ideas about

disability in more specifically contingent relationships to the social situation of disabled people

and to the disability rights movement."[65] Disability studies offers a body of literature that

emphasizes the ways in which diversely embodied individuals interact with material structures of

the world and shape the symbolic meanings of those structures.

Much early work in disability studies drew on the social model of disability. Analogous

to the feminist distinction between sex (the physical bodily characteristics) and gender (the

socially constructed meanings of those features), the social model of disability distinguishes

impairment (the physical, or mental, difference) from disability (the stigmas, discriminations,

and barriers that come from society's unwillingness to address impairment). Thus, "it is society which disables physically impaired people,"[66] and people with disabilities are positioned as an oppressed class in society. The social model is a radical departure from previous ways of understanding disability, including the medical and charity models.[67] In the medical model, disability is conceived of as an individual failing, located in the body, to be treated by experts. In the charity model, disability remains an individual plight, but is understood as properly addressed through the haphazard charitable efforts undertaken by society out of pity or obligation.

The basic tenets of the social model shaped academic work in disability studies in the 1990s, offering a foundation for greater investigation of social constructionism. Rosemarie Garland Thomson adopts the social model in *Extraordinary Bodies*, arguing that disability is "not so much a property of bodies as a product of cultural rules about what bodies should be or do."[68] Her analysis of American freak shows and literary texts considers disability and its representations in the same ways that race, gender, class, and sexuality had been studied, formulating a model for humanistic disability studies. Similarly, Tom Shakespeare turns to questions of representation, suggesting a modification of the social model in which disability is understood as caused by prejudice (sustained through cultural channels) as well as through material discrimination.[69] Thus, the social model is conducive to reconceptualizing disability as a marker of identity, rather than as a medical condition or sign of stigma, based on collective experiences of discrimination or social opprobrium.[70] Much of the appeal of a social constructionist or rights-based approach to disability lies in its communicative efficacy, recalling other social justice concerns. The social model required that people with disabilities be recognized as part of the public, and emboldened to act as citizens rather than recipients of

medical or charitable offerings. As an alternative to prevailing attitudes and laws regarding

disability, the social model marked a first step in claiming a disability identity politics, using

disability as a category of analysis, and challenging existing scholarship.

Thus, those scholars who took up issues of internet technology or the cyborg from what

could be considered a disability studies perspective offered very different analyses than their

counterparts outside of the field, bringing nuance and often doubts about the transformative

nature of these shifts. Norman Coombs' "Liberation Technology," which predates the World

Wide Web, offered an optimistic view of the effects of computer technology on his students with

disabilities. Coombs described many of the benefits of going online that people with disabilities

experienced in this era of the text-based internet; independent communication, information

seeking, and the formation of new kinds of community. However, Coombs also addressed the

fear among visually impaired computer users "that graphic interfaces and touch screens may take

away all that the computer has promised to them," indicating a concern about the practical and

material experiences of users with disabilities that had not been seen in similarly optimistic work

within internet studies.[71] Turning to cyborgs, James Cherney investigated the trepidation about

cochlear implants in the Deaf community in light of academic promises about the potential of the

cyborg; pointing to invocations of disability among cyborg theorists, he tested hypotheses

regarding the close relationships between people with disabilities and technology. He found that

"instead of seeing the cyborgian potential of the implant as a positive future, the Deaf quickly

confronted it as a threat" to the future of Deaf culture.[72] The blurred boundaries of the cyborg

endangered the future of identity politics, which had only recently become a successful strategy

for people with disabilities. In this analysis, disability troubled the progressive potential of the

cyborg; what was a metaphorical argument in favor of a cyborg life and politics became its repudiation.

Challenges to the social model have revolved around its reliance on a simplistic model in which society creates structures that exclude people with physical impairments, a perspective which can ultimately erase important differences among people with disabilities' experiences and needs. Furthermore, the social model implies that it is possible to create a "barrier-free utopia" in which everything is accessible for all people, which would seem impossible even considering the extremities of nature.[73] The social model doesn't account for lived experiences such as pain, which are internal to the body and not rooted in social structures.[74] This has led much of disability studies to move toward a critical approach that draws on post-structuralism, phenomenology, and feminist theory.

Post-structuralism is most evident in the use of Michel Foucault's notions of governmentality and biopower within disability studies. Shelly Tremain draws explicitly on these theories to argue that the social model of disability (in activism and academia) has been too reliant on laws and official structures of power, and not given enough attention to the diffuse workings of power at the level of embodiment. She suggests that thinking in terms of biopower, in which social structures are physically materialized, could lead to richer theorizations of disability.[75] Tobin Siebers also engages extensively with Foucault, as well as Judith Butler, discussing them as examples of "strong constructionism,"[76] in which the material world is understood as constructed through discourse and performance. Though he considers this useful, in terms of how identity is materialized within a particular context, Siebers criticizes these theorists for the lack of actual, lived bodies discussed within their abstract theory, and for the implicit reliance on a kind of "pure" (able) subject as the foundation of their work. Ellen

Samuels makes a similar point in relation to Butler, noting that Butler's avoidance of issues of disability in the text allows her to recuperate the homosexual body from the realm of the abject without interrogating what other non-normative bodies are still present in that realm of exclusion against which other identities are formed.[77]

Perhaps the most developed conceptual framework for extending post-structuralist theories of identity to disability while incorporating disability theorists' critiques and emphases on lived embodiment is Siebers' conception of "complex embodiment." Drawing on biopower and the governing of the individual and social body, as well as on the material construction of bodies through repeated performance, Siebers argues that a theory of complex embodiment would understand the material world and its representations as mutually transformative.[78] This means, of course, that discursive elements constitute the material world, but it also suggests the reverse–that the material world shapes the discursive. This move is part of what Siebers considers the necessary recuperation of realism for disability studies. This new realism would accept the social construction of the material world, but would then argue that the results of that (ongoing) construction are part of the realm of human action, available for observation, analysis and possible change.[79]

The duality of complex embodiment recalls work by philosophers of new media, who have argued for the importance of the body in processing information and interacting with digital media. Hayles argues that posthuman understandings of the brain as computer need to be augmented by the embodied elements of identity in relation to which we all take up identity positions.[80] Similarly, Mark Hansen's work on "mixed reality" employs a phenomenological perspective to discuss the ways in which motor activity and bodily perceptions can create a stronger sense of "virtual" reality than vision alone. He argues against straightforward

constructionism, calling attention to the embodied processes by which language is understood
and incorporated.[81] The similarity in theoretical claims in critical disability studies and
philosophies of new media makes for a potentially productive disciplinary union in studying
disability and online media. In bringing together disability studies, studies of internet and digital
media, and media and cultural studies, the complexity of the relationship between bodies,
technologies, and representations is made central to this investigation of accessibility.

Mixing Historical, Representational, and Ethnographic Methods

This project draws together the concerns of media and cultural studies, internet studies, and
disability studies in order to produce a critical cultural history of web accessibility from which
we might draw insights regarding media access more broadly. Such a theoretically diverse
perspective has necessitated the inclusion of multiple methods of qualitative analysis, including
archival research, cultural analysis of representations of disability and technology in television,
print, and online media, participant observation of a disability blogosphere, and open-ended
interviews with policymakers, developers, and users with disabilities. This mixed methodology
embraces the necessary interdisciplinarity of cultural studies research,[82] and draws upon several
methodological theories and traditions. Though specific methodological choices are described in
the relevant chapters, most simply, these methods can be separated into historical,
representational, and ethnographic strands.

The first strand draws on media historiography and software studies. It is grounded in the
location and analysis of archival sources in order to draw out a social history of accessibility
policy. The archives of the W3C are digitized and publicly available, as are a host of government
documents tracing the progression of Section 508 standards, enabling a large percentage or

archival research to be conducted online. These sources are particularly salient as old websites, with their accessible or inaccessible code, can only rarely be found and considered as evidence of the history of Web accessibility. Drawing upon historiographical methods used by scholars of similarly unreachable media artifacts, such as radio or live television, I searched for traces of Web accessibility, including advertisements, policy documents, the press, and meeting minutes.[83] Additionally, in keeping with production studies of media,[84] trade publications, textbooks, blogs, and other materials aimed at a professional audience of web developers have been consulted, in order to understand the ways in which accessibility was discussed among those tasked with producing it.

Software studies similarly calls for the interrogation of traces of software history, as technological advances may render old software artifacts impossible to access.[85] Software studies considers the intersection of the material, structural level of internet technology and the "cultural layer" of influences and creativity, arguing that something new is produced in digital media that may not have been possible in other media forms.[86] In considering the transformations of form and content that are central to web accessibility, this intersection is particularly intriguing. The method of software studies is essentially "the work of fashioning documentary methods for recognizing and recovering digital histories, and the cultivation of the critical discipline to parse those histories against the material matrix of the present."[87] By digging into the traces of old technology, as seen in popular, professional, and policy documents, the intersection of computer and cultural layers is made available to analysis.

This historical research further adopts a social shaping of technology perspective, drawn from science and technology studies. This approach argues that neither technology nor society singularly controls the direction of societal development, but that people and institutions shape

the development and incorporation of technology, while technological affordances may, in turn, shape some emergent behaviors and cultural forms. A social shaping of technology perspective allows for valuing the practices of users, attending to the intentions of producers, and investigating the technological specificities and limitations of a given media form. While existing work in cultural studies and the social history of technology has examined the ways in which built environments and artifacts reinforce conceptions of a "normal" or "able" body and exclude those whose bodies are disabled, or incapable of "normal" behavior,[88] this project turns to the effects of policies on shaping technology that, in turn, shapes understandings of access, disability, and normalcy. In conducting historical research into the social shaping of technology policy, I treat policy itself as a technology of power[89] that creates particular forms of institutions, artifacts, and behavior.

The representational methodological strand in this research involves the critical cultural analysis of media artifacts. This is done in order to elucidate the socio-historical context of the past 25 years, and demonstrate how popular conceptions of disability, technology, and futurism have helped or hampered polices and practices of Web accessibility. The analysis of these artifacts looks not to individual media texts in isolation or in terms of their formal qualities, but undertakes broad analysis of a discursive formation, in which the repetition of particular messages begins to comprise a kind of common sense understanding of the world.[90] The dominant discursive formation functions as a hegemonic form of knowledge, shaping expectations, behaviors, and innovation; thus, discursive study of the socio-historical context is expected to reveal some of the societal influences on accessibility policy. Beginning with the topics of disability and Web technology, I located and began analysis of a range of academic, popular press, fictional film and television representations, and commercials and print

advertisements. This form of discursive analysis follows many scholars who examine the imaginative components of Internet history by linking popular texts to the expectations and capacities of emerging online activities.[91] Popular understandings of the proper uses, meanings, and relationships to internet technologies form a hegemonic norm; these representations communicate appropriate uses and intended users, potentially signaling the inclusion or exclusion of particular alternative arrangements of use. As argued by Goggin and Newell, and more recently by Ellis and Kent, normative assumptions about online media and technology have resulted in the exclusion of users with disabilities from forms of content and participation.[92] Through detailed analysis of representations and cultural contexts in the United States, I analyze the formation of a normative user position and the ways in which users with disabilities challenge that norm.

The third methodological strand employed in this research is ethnographic, including participant observation of a disability blogosphere and interviews with bloggers and policymakers. As this research attempts to study the effects of accessibility policy on Internet users with disabilities, study of the online writings, interactions, and artistic creations of people with disabilities offers to demonstrate direct and indirect effects of accessibility. Such ethnographic research reveals the lived experiences of digital media and "push against peculiarly narrow presumptions about the universality of digital experience."[93] In this case, ethnographic research aims to demonstrate how people with disabilities' experiences of online compare to those of normative Internet users.

The research site was a dynamically constructed "disability blogosphere." In the formulation, disability refers to either a claimed identity, a topic of discussion, a framing theme, or a combination thereof, and blogosphere is intended to describe a linked network of blogs that

exist in conversation with one another and may share audiences. I use a modified form of Web sphere analysis to determine research site.[94] Participant observation entailed the entry into the disability blogosphere, where I maintained a personal blog for a period of time, linking to and exchanging comments with other bloggers, and my ongoing participation in Twitter and Tumblr conversations with research participants. This participation has been counterbalanced by ongoing detailed observation of the content and frequency of postings on the sample blogosphere, which has been recorded in regular fieldnotes. The final component of the ethnographic methodological strand involved the use of open-ended, in-depth interviews with bloggers from the disability blogosphere. These in-depth interviews focused on experiences with Web accessibility in particular, not on a longer life story. Anecdotes and experiences related to accessibility were elicited through open-ended questions, and were followed up with probes to clarify or amplify the participants' stories.

Finally, I conducted oral history interviews with individuals involved in accessibility policy formation. These interviews consisted of open-ended interviews designed to elicit context and alternative perspectives on the history of web accessibility in the U.S. This form of data is particularly valuable to media historians, as it can augment the available archival sources and lend further credence to preliminary research conclusions. In order to elicit oral histories, interview questions were open-ended and sought to elicit life histories and emphasize questions about memories and opinion rather than about factual information.[95] Occasionally, informative questions were included among these open questions, in an effort to confirm research findings or my interpretations of archival data.

These three methodological strands constitute the basis for this critical cultural history of accessibility in the U.S. They allow for a constant productive tension between institutional

attempts to shape technology policy and individual experiences with (in)accessible technology. Through this tension, the inherent contingency of web accessibility is made clear, and the necessity of incorporating the perspectives of people with disabilities in accessibility debates is emphasized. Web accessibility, like other forms of media access, exists only insofar as it is made materially and culturally available to a broad audience.

Situatedness, Disability, and Access

I would be remiss to conclude this introduction without elucidating the concept of disability and my own situatedness as a researcher. To begin, the term "disability" seems linguistically to imply a lack of ability, a deficiency, or inferiority. In much colloquial use, this is exactly the intended meaning, as those who are disabled are often treated as objects of pity or perpetual patients. Yet, in the United States, "people with disabilities" has become the preferred terminology, as it foregrounds the people rather than defining them by their ability status ("the handicapped," "the blind"). Among some people with disabilities, as well as disability advocates and scholars, this is often coupled with an effort to denaturalize the able-bodied status of others, by describing them as abled or temporarily-able-bodied rather than allowing a non-disabled state to pass as an unstated norm. Beyond terminology, however, attempting to define who has a disability, what constitutes a disability, and what degree of disability "counts" is a potential minefield.

The definition espoused by the Americans with Disabilities Act (ADA) is broad, describing disability as "with respect to an individual, (A) a physical or mental impairment that substantially limits one or more major life activities of such individual; (B) a record of such an impairment; or (C) being regarded as having such an impairment."[96] For the purposes of this dissertation, I understand disability to be any physical or mental condition that makes it

extremely difficult, if not impossible, to utilize default social, institutional or physical structures without some form of accommodation. This definition is intentionally broad, drawing on both the ADA and the social model of disability. My working definition of disability draws on the notion of social structures creating disability, seen in the social model and the ADA, but retains a connection to the body without use of the language of "impairment." This aligns my definition with critical disability studies in which social components of disability exist alongside the lived experiences of bodily pain and limitations that are not socially created. Furthermore, self-identification constituted sufficient basis for me to discuss an individual, community or topic in terms of disability, regardless of its fit with this definition.

It is crucial to note, however, that I do not identify myself as disabled. I am a young, white, heterosexual woman, a citizen of the United States, and an education- and class-privileged person. I have minor physical ailments–nearsightedness, rosacea, occasional repetitive stress problems in my wrists, and a possibly fading sense of smell–none of which I consider to be a disabling condition in my life. Thus, in attempting this project, I aimed to be sensitive to the power inherent in telling the stories of policies, experiences, and challenges that may not directly affect me. I understand my responsibility in what I write to be recounting my evidence and conducting my analysis as truthfully and respectfully as possible. To that end, I have shared all writing based on interview or ethnographic data with my research participants. Their understanding of their own motives, experiences, and statements will be held as equal to, if not superior to, my own and the results of these readings will be reincorporated into my writing. This is just one attempt to conduct feminist research, situating myself in relation to my work and attuning myself to power differentials within the research relationship.

The notion of situatedness is particularly crucial to this project, which draws upon feminist theories of intersectionality and critical disability studies in order to suggest that experiences of media and technology are, inherently, contingent and dependent upon the intersectional identities that we bring to them. This project began as an interrogation of web accessibility at the sites of policy, cultural representation, and experience. Through the course of research, this interrogation broadened and contracted, as it became clear that web accessibility, in fact, offered valuable perspectives and new tools with which to interrogate media access more broadly. We can learn from the study of accessibility how to better study media in a way that incorporates access as not merely a practical necessity, but as an integral component to understanding how and why media is produced, consumed, and circulated. Thus, as this project moves through the history of web accessibility in the United States, so does it emphasize key components of the study of media access. The chapters grouped as Part One lay out a model for the study of media that foregrounds access. Rather than taking for granted an audience's ability to use media technology in a particular way, these chapters suggest that access ought to be understood as contingent and changeable.

In Chapter 1, I consider the place of access in U.S. media history and its connections to the public value of equity. Looking at the history of mass media and telecommunications, research on the Digital Divide, and the history of media accessibility for people with disabilities, I argue that access is too often figured as a single state, an end-goal to be achieved. This chapter concludes by reviewing circuit models of cultural and media studies, in which media have been theorized through the articulations of various realms of analysis. Adapting this model to the study of media access, I suggest that the variable articulations of the sites of content, form, use, and an intersectional point of entry, all within a rich sociohistorical context, form endlessly

different constellations of access. Rather than moving toward a unitary kind of access for all, such a model encourages attention to the different arrangements of access that exist and shape experiences of media use.

Following explication of this model in the first chapter, each subsequent chapter covers a portion of the cultural history of web accessibility while illustrating components of this circuit model of access and providing examples of the variable articulations of access seen in the use of the web by people with disabilities.

Following this theoretical work, Chapter 2 sets the stage for the study of web accessibility by examining the relevant sociohistorical context of the late 1980s through 2000. This includes telecommunications and disability laws within the United States, as well as the cultural context and its representations of disability and technology. Popular discourses and pre-existing legal frameworks helped to form the imaginative component of internet use and the place of disability in a networked future by shaping users' and policymakers' expectations. The chapter concludes by detailing how these expectations, and their potential codification and instantiation in relation to developing technologies, created a hegemonic preferred user position that did not incorporate disability easily. The preferred user position, analogous to preferred reading positions, functions as a hegemonic norm that shapes individuals' attempted uses of media as well as their understandings of their own positions in relation to online media and technology. It might be represented using the circuit model as a particular configuration of access that becomes strengthened through its status as a normative default; users with disabilities often find themselves well outside of such preferred use positions, and the study of web accessibility chronicles attempts to make various uses available to users with disabilities whose configurations of access are often quite different from the default.

In Chapter 3, I chronicle the first stage of web accessibility policy development, during which both the W3C WCAG 1.0 and the first standards for Section 508 were released. These standards attempted to govern the form of web content by producing sets of rules that indicated the forms most useful to a broad group of people with disabilities. By manipulating form, these policies suggested, configurations of access could be modified to be more generally beneficial. However, both policy processes soon confronted the difficulties of defining terminology, addressing key audiences, and making policies that had to be broadly implemented in order to be effective. The constraints of the policy process demanded concrete recommendations, or standards, which those involved in the process quickly realized would not be sufficient to solving problems of access. Through attempts to govern the form of web content, it quickly became clear to all involved that accessibility was highly variable and contingent upon circumstances outside the control of policymakers and outside the realm of form.

Together, the chapters that form Part One establish the necessity of conceiving of access (and accessibility) as contingent, situated within a particular context, and achieved through various methods that incorporate far more than media's form. In Part Two, I continue to move through the history of web accessibility while focusing on the remaining sites of analysis–content, use, and point of entry. These chapters follow the establishment of access as individual and contingent by exploring how individual differences construct variable possibilities of access.

Chapter 4 picks up, historically, where Chapter 3 left off, examining the aftermath of WCAG 1.0 and Section 508 standards and their implementation. Based largely on professional literatures of the time, examples of accessibility failures, court cases dealing with disability online, and studies attempting to gauge rates of accessibility in the early 2000s, this chapter emphasizes the granular nature of accessibility. Despite the existence of policies, practical

accessibility required action by countless web developers for countless sites. As WCAG 1.0 was voluntary and 508 applied only to agencies of the federal government, enforcement of any kind was scant. Thus, accessibility implementation was largely undertaken by elite developers, and accessibility itself was most often treated as a burden on developers' creativity. This chapter examines the site of content, demonstrating that attempts to govern form through policy were largely understood as requirements to change site content. The separation of form and content, though more possible with digital media than in analog, was an evolving web practice in the early 2000s; many feared that changes to the form of sites, to make them more accessible, would result in changes to the informative, creative, and aesthetic content of these sites. Additionally, it quickly became clear that some forms of content were more easily transformed in their form than others, resulting in persistent inaccessibility of particular sites and services.

I return to policy history in Chapter 5, focusing on the years 2002–2010, as both the W3C and the Access Board attempted to rethink web accessibility policies. Much about the web had changed in the years since 1997, and the rise of Web 2.0 only intensified the need for updated accessibility guidance. As the web became an increasingly participatory medium, open to amateur content producers, this stage of policy formation was marked by tensions about authorship, non-HTML technologies, and production. In short, it became imperative to consider use; how were people using the web, for what purposes, and how could those uses be made accessible? While the first round of policy development had conceived of users with disabilities using the web to access content produced by professionals, it was increasingly clear that users with disabilities were also using the web to produce content and participate.

Chapter 6 looks at that participation, incorporating ethnographic material from a disability blogosphere to see the ways in which in/accessibility shapes online activities, and how

bloggers understand accessibility as relevant to their experiences. This chapter finally focuses on the point of entry, examining how the identities, impairments, and circumstances of individuals influence their articulations of access. Many bloggers understand accessibility to go far beyond what is stated in official policies, and use particular online forms and content to create what they consider accessible experiences for themselves.

The conclusion briefly discusses how official accessibility policies have evolved since 2010, demonstrating continued efforts to wrestle with the contingency of access for people with disabilities, before suggesting how this model of media access might be applied to cases other than accessibility, and to media other than the web. Studying media with an eye on access conditions allows for interrogation of preferred user positions and greater incorporation of understudied populations and their uses and interpretations of media. It resists easy assumptions of universality and requires deeper investigation of many taken for granted components of media consumption and production.

Each chapter begins with a vignette based on ethnographic work. These are composites, based on multiple observations and interviews. In "fabricating" these narratives, I draw on Annette Markham's defense of fabricated composites in online ethnographies. Such composites offer a way to be true to the ethnographic data while protecting the privacy of participants who could easily be found online if individual details were used.[97] As only participants who were interviewed were approached for explicit consent, I consider unnecessary revelations of private bloggers' names or statements (let alone specific locations or diagnostic information) to be intrusive and an abuse of my power in writing about this research. Ethnography in online spaces must wrestle with the potential search-ability of participants and the risks of exposure. By writing these composite accounts, I am able to present important themes and experiences drawn

from the research without breaching the privacy of my participants. These composite accounts were created by selecting representative components of the ethnographic data and composing an original telling.[98] They were shared with interview participants upon whom they were partially based prior to inclusion, giving individuals with similar experiences the chance to alter these representations. Beyond protecting individual privacy, such accounts have the additional advantage of combining elements to produce a kind of "typical" description for readers, giving a taste of the data and its situated meanings without requiring full immersion.[99] Furthermore, using these vignettes to open chapters preserves a focus upon the perspective of people with disabilities, in keeping with disability studies' emphases upon inclusion and prioritization of such vantage points. These brief stories of individual web use illustrate the variety of points of entry, and their influence on the form, content, and uses of web media. Thus, these composite vignettes are shaped by my research interests, as well as my analysis of thematically important components of participant observation. I have attempted to produce resonant glimpses of users with disabilities' accessibility experiences, in order to better provide insight into experiences that lend a particular resonance to the topics of each chapter.

This project attempts to fill in gaps within media, internet, and disability studies by bringing them together in the study of web accessibility. Where media studies often calls for consideration of minority representations, disability has rarely been taken up in these terms, and access by people with disabilities has been largely invisible. Where internet studies celebrates the flexibility of the online techno-body or self, it has rarely considered disability as an informative perspective on the union of technological and embodied forms of social and cultural participation. Similarly, while many histories of the web have been written, accessibility has rarely been more than a footnote. Finally, disability studies has featured relatively little attention

to media and technology, particularly in the context of the United States. I have attempted to build upon these literatures by bringing them to bear upon the study of accessibility history, and by illustrating how they might productively be joined in order to promote the asking of new questions regarding media, access, and participation.

Notes

[1] Roseanne Allucquère Stone refers to the psychiatrist as Stanford Lewin, and refers to his assumed online identity as "Julie."

[2] Sherry Turkle, *Life on the Screen: Identity in the Age of the Internet*, 1st Touchstone ed. (New York, NY: Simon & Schuster, 1997), 228.

[3] Jodi O'Brien, "Writing in the Body: Gender (Re)production in Online Interaction," in *Communities in Cyberspace*, ed. Marc A. Smith and Peter Kollock (New York, NY: Routledge, 1999), 88.

[4] Turkle, *Life on the Screen*, 229.

[5] See *Computerization and Controversy*, ed. Charles Dunlop and Rob Kling (1996), or *Sex/Machine*, ed. Patrick D. Hopkins (1998).

[6] Lindsy Van Gelder, "The Strange Case of the Electronic Lover," in *Computerization and Controversy: Value Conflicts and Social Choices*, ed. Charles Dunlop and Rob Kling, 2nd ed. (New York, NY: Academic Press, 1996), 540.

[7] Ibid., 533.

[8] Ibid., 542.

[9] Rosanne Allucquère Stone, *The War of Desire and Technology at the Close of the Mechanical Age* (Cambridge, MA: MIT Press, 1995), 74.

[10] This story is also invoked in David Trend's *Reading Digital Culture* (2001), Stacey L. Edgar's *Morality and Machines* (2002), and Blair and Takayoshi's *Feminist Cyberscapes* (1999). Diana Saco offers a literature review of others' use of this story in *Cybering Democracy* (2002) that elides the role of disability. Additionally, Rheingold, Turkle, and Stone have been widely cited in relation to their analysis of this tale.

[11] Howard Rheingold, *The Virtual Community: Homesteading on the Electronic Frontier* (New York, NY: HarperPerennial, 1994), 185.

[12] O'Brien, "Writing in the Body: Gender (Re)production in Online Interaction," 89–91.

[13] Mark Poster, *What's the Matter with the Internet?* (Minneapolis, MN: University of Minnesota Press, 2001), 185.

[14] Gerard Goggin and Christopher Newell, *Digital Disability: The Social Construction of Disability in New Media*, Critical Media Studies (Lanham: Rowman & Littlefield, 2003), 112. See their analysis of this story, and other internet studies literature in relation to disability, in

Digital Disability for a complete analysis.

[15] Tim Berners-Lee, *Weaving the Web : The Original Design and Ultimate Destiny of the World Wide Web by Its Inventor*, 1st ed. (New York, NY: HarperOne, 1999), 178.

[16] Erik Bucy and John Newhagen, *Media Access: Social and Psychological Dimensions of New Technology Use* (Mahwah, NJ: Lawrence Erlbaum Associates, 2004); Kerry Dobransky and Eszter Hargittai, "The Disability Divide in Internet Access and Use," *Information, Communication & Society* 9, no. 3 (June 2006): 313–334; Mark Warschauer, *Technology and Social Inclusion: Rethinking the Digital Divide* (Cambridge, MA: MIT Press, 2003); Susannah Fox, *Internet Usage Trends - Through the Demographic Lens* (Presented to FTC: Protecting Consumers in the Next Tech-Ade: Pew Internet and American Life Project, November 6, 2006), http://www.pewinternet.org/ppt/Fox_FTC_Nov_6_202006.pdf.

[17] Goggin and Newell, *Digital Disability*; Kate Ellis and Mike Kent, *Disability and New Media* (New York, NY: Routledge, 2010).

[18] Norman Coombs, "Liberation Technology: Equal Access via Computer Communication," *EDU Magazine*, Spring 1992, http://people.rit.edu/easi/lib/oppo1.htm.

[19] Jim Ellison, "Assessing the Accessibility of Fifty United States Government Web Pages," *First Monday*, 2004, http://www.firstmonday.org/issues/issue9_7/ellison/index.html; Johnathan Lazar and Kisha-Dawn Greenidge, "One Year Older, but No Necessarily Wiser: An Evaluation of Homepage Accessibility Problems over Time," *Universal Access in the Information Society* 4, no. 4 (2006): 285–291.

[20] Susannah Fox, *Americans Living with Disability and Their Technology Profile*, Pew Internet & American Life Project (Washington, DC: Pew Research Center, January 21, 2011), http://www.pewinternet.org/Reports/2011/Disability.aspx.

[21] Goggin and Newell, *Digital Disability*; Ellison, "Assessing the Accessibility of Fifty United States Government Web Pages"; Alison Adam and David Kreps, "Disability and Discourses of Web Accessibility.," *Information, Communication & Society* 12, no. 7 (October 2009): 1041–1058.

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[99] Markham, "Fabrication as Ethical Practice."

Chapter 1

The Public, Media, & Access: Accessibility as a Model for Media Access

Lora, a white woman in her mid-thirties, has a mobility impairment that requires her to use various aids to get around. When she's feeling good, Lora can use crutches or a walker. When she's having more pain, she prefers to use a wheelchair. Lora is well aware of her rights as a person with a disability, and regularly inquires about physical accessibility before going to new places. Lora has also found that people often comment upon her use of mobility aids in public; she has been called inspirational while shopping in the grocery store, and has been accused of faking her disability when she uses aids other than her chair. Public outings require significant planning and effort for Lora, and uninvited comments (regardless of their intent) can be additional frustrations.

The internet, for Lora, represents a way to expand her life without venturing into physical public spaces. She is intrigued by the possibility of concealing her visible disability, but in her blogging and on social networking sites, she occasionally talks about it. She considers her online identity to be basically honest and realistic, but thinks that the details of her disability are hers to share when she chooses. In this way, and by honestly writing about her experiences with a mobility impairment, Lora sees her online activities as producing a point of view on disability that she rarely encounters in public spaces. In a sense, she's "speaking back" to those who read inspiration, pity, or fraud into her physical embodiment; she may not reply in the moment, but her online writing allows her to express frustration and reclaim her own embodied experiences.

Web accessibility does not affect Lora directly, as she has the necessary abilities to use computer technology and online media without accommodation. She recognizes that it is important for others, the way physical accessibility is for her, and considers it an important way to further the ability of people with disabilities to participate in society.

The title of this dissertation, "Access Ability," is an inexcusable pun. Its indeterminate grammatical form is open to interpretations as either a command or as a list of unrelated nouns. It calls upon associations with public access television and with notions of ability and disability, but makes no reference to digital media technologies. Yet, by breaking "accessibility" into its component parts, I hope to suggest that abilities themselves are not innate characteristics, but something that must be accessed in some fashion. Here, in fact, is the crux of my argument: the ability to access media technologies is contingent. It is reliant upon articulations of embodied experience, material conditions, policy and cultural contexts, and a host of social and psychological factors.

In this chapter, I draw upon several bodies of literature in order to interrogate the varied meanings of media access. Beginning with theorizations of the public sphere, including recent work on the internet as a possible public sphere, I consider the importance of media access in contemporary American society. Subsequently, I turn to the histories of public television and cable access television, both forms of media that are often associated with the values of a public sphere. Moving away from mass media, I interrogate the notion of universal service. A staple of landline telephone service in the United States, universal service offers a very different model by

which to understand online media access than that inherited from televisual media. Having laid this historical groundwork, I move into explicit discussions of internet access, particularly those that took up debates concerning the "Digital Divide." Finally, I encapsulate the history of accessible media. Throughout these literatures, we must contend with conceptions of access as availability, affordability, or choice, and conceptions of access that attempt to address motivations, abilities, and use. In all of these understandings of access, the public values of citizenship, equality, and participation are invoked, though only rarely are they enacted. Accessibility offers to integrate the models of access seen elsewhere, and to connect them with varied forms of material technology, embodied users, and cultural uses of media.

I conclude with a proposed model of media access that draws upon circuit models of culture, progressive models of technological access, and a critical cultural perspective on disability in order to address the variable articulations of bodies, technologies, and power that undergird access across media forms. Additionally, such a model of access incorporates access to means of production, as well as consumption, making it more applicable to digital media and more responsive to concerns about cultural and civic participation that have been central to theorizations of the public sphere and media's role within it. Through richer conceptual frameworks and analyses of access, more nuanced discussions of the role of media in civic and cultural participation become possible.

The Public Sphere and Public Values

Media access is only important insofar as it allows for participation in a mediated public, in which cultural, political, and economic activities occur and intersect. Often, these activities are conceptualized as part of the public sphere, as theorized by Jürgen Habermas in *The Structural*

Transformation of the Public Sphere. Yet, given the increasing mediation of society, and the increased interactivity made possible by digital media, the environment of a public sphere is radically different from that described by Habermas. Given such differences, it may be more productive to consider not just the public sphere, but the ways in which public values are mediated and may be maintained.

As originally envisioned, the bourgeois public sphere was a space in which individuals could come together, bracket their differences, and discuss pertinent issues, bringing them to the attention of the state. Over the course of *The Structural Transformation of the Public Sphere, Habermas* describes the conditions for the rise of the bourgeois public sphere in Europe in the 18th and 19th century, its ideal functions, and its decline with the rise of the welfare state. He argues that as England, France, and Germany adopted more rational, legalistic forms of government, the notion of the "public" shifted; where the public sphere had previously been an arena of state authority, it became "a forum in which the private people, come together to form a public, readied themselves to compel public authority to legitimate itself before public opinion."[1] The emergence of the bourgeois public sphere depended upon the rise of liberal economic policies, the organization of the bourgeois family, and the rise of commercial media and culture that enabled private citizens to communicate on equal footing about the issues of the day. This public sphere, in Habermas' words, "stood or fell with the principle of universal access. A public sphere from which specific groups would be eo ipso excluded was less than merely incomplete; it was not a public sphere at all."[2] The public sphere, then, is based on the possibility that anyone could attain the necessary legal and economic status to participate; "access" here is about the possibility of entry to a space of political debate. Habermas acknowledges that this access was

not total, but dependent upon achieving an economic status within the private (commercial) sphere.

This limited access to the public sphere has been a source of criticism, as has the assumption that individuals could bracket differences in status once they entered the space of civil debate. Nancy Fraser makes Habermas' ideas of universal access and bracketed social status a central element of her larger critique of the bourgeois public sphere as a masculinist hegemonic force. She rightly points out that any number of potential participants were excluded on the basis of gender (and likely other identity categories), that the very style of "rational debate" would exclude those not educated in such matters, and that any situation in which differences of status are ignored will ultimately reinforce the positions of the dominant group. Essentially, Fraser illustrates the ways in which the ideal of the bourgeois public sphere was never truly met, as it was never truly accessible. She further argues that a multicultural egalitarian society requires multiple publics, proposing that "subaltern counterpublics" in which members of subordinated groups could produce counterdiscourses and articulate their needs have historically existed alongside the bourgeois public sphere and are necessary to continued political debate.[3] Where the emergence of competing publics is necessary and progressive in Fraser's discussion, such alternatives challenge a functioning public sphere as theorized by Habermas. He has argued that the expansion of the state reduced the scope of the public sphere as an intermediary between state and market, even as it expanded the possibilities of political participation. Competing publics emerged, and the concept of common concern became watered down as interest groups and politicians attempted to speak on behalf of "the public."[4] The commercialization of mass media moving into the modern era further eroded the public sphere through the rise of publicity work and the fostering of a consumerism that dampens political debate. Habermas understands

these developments as a turn from a media that informed the public to one in which the public is called upon as an audience to be entertained or a source for the authority claimed by opinion writers and politicians.

The contemporary digital media environment is one in which the notion of counterpublics takes on particular importance, as the fractured, niche media available online bears little resemblance to the totalizing mass media critiqued by Habermas. Zizi Papacharissi has investigated the public sphere in relation to the internet using the notion of a "virtual sphere […] dominated by bourgeois computer holders, much like the one traced by Habermas consisting of bourgeois property holders. In this virtual sphere, several special interest publics co-exist and flaunt their collective identities of dissent."[5] The virtual sphere is thus not a single entity, as theorizations of the bourgeois public sphere were, but a common virtual space shared by "several culturally fragmented cyperspheres."[6] Papacharissi's formulation retains the importance of civic dialogue in a digital era, but also acknowledges that this dialogue is fragmented and partial. She calls for equal and universal access to online technologies and information, and acknowledges the inequalities that lead to the formation of counterpublics, but she does not fully consider the ramifications of the possible isolation of those without access from online civic dialogues. In her more recent work, Papacharissi reconceives of the private sphere in an online context; rather than leaving the private sphere to enter the public, she envisioned access to the political realm occurring through personalized, individual means.[7] Such an approach involves a deliberate blurring of the boundaries between public and private, and relocates the activities of the bourgeois public sphere in an online personalized space, which combines public and private elements. Once again, Papacharissi offers little theorization of how those without access to

personalized technologies could participate in a society in which these spaces are of increasing civic importance.

Jan van Dijck also wrestles with the complications to models of public and private spheres brought by networked digital media and communications platforms. Looking to Jochai Benkler's notion of the "networked public sphere" and Habermas' own work on online media, which predicts fragmentation rather than the formation of collective opinion, van Dijck posits that the linkages of networked media are not a new kind of public sphere but are, in fact, the mechanisms that link public, state, private and corporate spheres.[8] These four spheres, as described by Habermas, overlap in networked media through the sociality of individuals and communities, as well as through the industrial and regulatory decisions that shape these platforms. Van Dijck attempts to understand social media platforms as sites of contesting interests, which may potentially radically transform "social norms for (political) communication."[9] He suggests that social media lays bare the interconnectedness of these spheres and reconfigures their relationships. Van Dijck does not address access explicitly, but by highlighting the informal practices by which the public sphere is configured in an online environment, he directs attention to the variable forms of online social and cultural participation and their connections to the political. This emphasis on the variation in how individual participate and how forms of participation may differently relate to the public sphere offers a productive refiguring of the public sphere as not a discrete place, but as a network of relations.

Through such attention to the contexts of democratic participation, we may begin to consider the importance of media access not as a direct means of accessing the public sphere, but as a means of enacting public values, particularly values of participation and equality as necessary to the public good. Peter Dahlgren, writing on both television and the internet,

suggests that the appropriate relation between media and democracy is one of influence. In his model of "civic cultures" as a "set of preconditions for populating the public sphere,"[10] he argues that prior to political participation, people need to have identities as citizens, experiences of political practices, a sense of shared commonality, appropriate knowledge, and values that support democracy. It is these preconditions, he argues, that can be fostered by watching television or engaging in online deliberation on a variety of topics. The value of online media is thus "the reciprocal dynamics that it can generate, reinforcing the parameters of civic culture and the impact this may have on the larger political situation."[11] A civic cultures perspective attends to the processes by which individuals "develop into citizens, how they come to see themselves as members and potential participants in social development."[12] Henry Giroux similarly argues that new media may foster behaviors that uphold public values, which support the public good, and ultimately public spheres. He calls for analyses of new media to consider their possible roles in the creation of "a formative culture that nurtures a belief in the common good and the ethical imagination, and the individual and collective practices needed to uphold the promise of an aspiring democracy."[13] He sees potential for online and social media to challenge neoliberal frameworks, consumerism, and an inhumane political system, as the speech and participation of individuals in these venues may work to create a culture more supportive of social inclusion at all levels. In discussing media access, the public value at stake is that of equality,[14] a theme that will become clear in the history of accessible media. Equality, as a foundational component of democratic governance, is upheld through media practices in which people may participate on an equal footing; participatory media, two-way communication, open source code, and other modes of online engagement value equality in their activities, and this valuation may extend to the reclamation of similar values in the public sphere.

The value of online participatory media to notions of the public sphere and democratic governance is that it can establish and reinforce the value of equality, as well as the value of participation in contexts beyond particular online communities. In terms of such values, the benefits of online participation for people in situations similar to the characterization of Lora, who can "speak back" about disability in ways that do not feel safe or polite in physical spaces, are enormous. Online participatory media offers her a way to become part of a public, to voice her perspectives, and to form connections with others. However, such values are challenged by lack of access to these participatory spaces; when groups or individuals are not a part of these activities, their political exclusion is normalized, as well. These spaces may, then, simply replicate inequalities already a part of the public sphere, rather than boosting public values. The general lack of web accessibility for people with disabilities stems from and perpetuates histories of unequal media access, with quite troubling implications regarding public values, but it is only one axis by which to consider media access. Therefore, the remainder of this chapter interrogates theorizations of media access in a variety of contexts, before turning to how we might better incorporate access into the study of media.

Public Television–Access as Availability

As briefly discussed above, the bourgeois public sphere threatened to disappear with the rise of mass media. However, many media scholars have attempted to locate the public sphere in the institution of public television. State-supported, non-commercial, and dedicated to serving the public interest, public television seemed to offer a space in the mass media environment in which the values of a democratic public sphere could persist. Nonetheless, these reclamations of the public sphere via public television largely failed to consider questions of access; they neither

incorporated critiques of the exclusivity of a Habermasian public sphere nor addressed the means by which public television might be accessed. Thus, the understanding of access that emerges from this work is largely one of availability; access is a possibility, and that possibility is considered sufficient.

Foremost among scholars arguing for the reclamation of the public sphere via public television is Nicholas Garnham, who calls the United Kingdom's public service broadcasting system "the embodiment of the principles of the public sphere."[15] Garnham argues that the central elements of a Habermasian public sphere–universal access to information, the elimination of privilege, and the quest for rational norms–could best be met by the UK's public service broadcasting system, as it is an arena that is neither entirely state-controlled nor commercially based, and thus can mediate between the interests of private citizens and the government. Public service broadcasting can become the ideal public sphere, a space for debate in which various ideas move from the private sphere to the governmental. While he criticizes public broadcasting's failure to interrogate the roles of journalists and politicians and calls for increased access to public media for social movements, he is largely focused on information programming and does not address representational politics, the means of production, or the viewing practices of the audience, let alone the potential participation of citizens in this rarified public sphere.

In the American context, broadcasting history is based on the premise that radio and television stations in the United States operated as commercial organizations entrusted to protect the "public interest" in return for their licenses to operate on the spectrum. The Radio Act of 1927 established the PICAN standards, by which broadcasters would operate in the public interest. Thomas Streeter argues that the very construction of the "public" was part of a strategy for furthering the development of commercial broadcasting.[16] The history of radio included

protracted negotiations regarding radio's public role and its intrusion into private space, which were often conveyed through gendered hierarchies of content in which masculine, educational, serious programming was prioritized.[17] The construction of the public interest, from its inception, understood the public good not as simply popular opinion, but as an objective entity that could be identified by experts.[18] Such prioritization of expertise over audience uses and opinions has characterized the history of public media in the United States.

The closest thing to public television in the United States has been the Public Broadcasting System (PBS) and the American Corporation for Public Broadcasting (CPB), launched in the 1960s as a response to the supposed "vast wasteland" of popular commercial television programming. Several scholars have critiqued the functioning of these broadcasters, calling for changes in the interest of creating public television as a kind of public sphere. William Hoynes, following Garnham, argues that "public television, already partially removed from both market and state and with a rhetorical commitment to more than simply selling products, is a key site in the struggle for a reinvigorated public sphere and a more healthy civil society,"[19] justifying his critique of the political economy of public broadcasting in a market-driven television system. He argues that the funding process, which relies upon both state funding and corporate donations, puts ideological constraints on programming. This recalls James Ledbetter's argument that the corporate funding structure led public television to an ideological stance that does not serve public needs.[20] These arguments rely upon theories of political economy, and thus their prescriptions focus upon changes to the funding structures of American public television. Hoynes, for instance, suggests that public television can only fulfill the democratic role of a public sphere by removing itself from state and market funding structures. These critiques largely avoid discussions of programming content or audience

practices regarding public television, though Hoynes does indicate that ideally public television would offer opportunities for public participation in governance and production. Thus, access to the public sphere of public television remains conceptualized largely as availability. The motivations for viewing and other forms of public participation are not interrogated; the availability of an improved public television is treated as sufficient for its access and use, and the audience to whom this service is available is treated as largely uniform.

Other scholars have addressed the programming content of American public broadcasting, which skews toward documentary, period or other British dramas, and other forms of programming intended to provide a kind of social and cultural uplift. Patricia Aufderheide criticizes this elitism regarding the programming that the public should watch, arguing that it stems from the lack of both insulated funding and a clear mandate for the CPB. In their absence, the public interest has been understood as either serving under-represented groups or providing a kind of elite content. She argues that neither strategy fulfills the public interest in creating a democratic citizenry, and suggests that public television could become "anti-television," with a mission not of producing popular programming, but of fostering a public sphere through programming, with its success measured in the active participation of the public in political matters.[21] Such an approach to "anti-television" contrasts with Laurie Ouellette's critiques of public television programming, which rely on a cultural studies perspective to argue that public television could provide popular programming outside of a commercial structure. Ouellette gives the example of daytime talk shows, popular with subordinated social groups including women, the working class, and people of color, as a genre of programming which could be productively refigured on public television "according to noncommercial goals like equity, accountability, innovation, and diversity."[22] For Ouellette, the failings of public television lie in its origins in the

1960s as a remedy to mass culture, amid assumptions that the public had already failed to make proper cultural choices in the interests of democracy; public television has retained its image as a corrective cultural force, and has failed to pursue other rationales for public television's role in the media landscape. Both Aufderheide and Ouellette look to programming content and audience behavior, resulting in critiques of public television that expand concerns with access to concerns about motivations and cultural relevance as factors that contribute to audiences' willingness to take advantage of the availability of public television. Still, material access to technology and the varied needs and motivations of a diverse television audience are left unexplored.

Conceiving of television access in terms of availability to the public has facilitated a consumerist understanding of media, rather than an understanding based upon citizenship or public values. This consumerism has been fostered through the commercial broadcasting system, which has pursued profit while being charged with upholding the public interest. Consumer choice and program diversity have stood in for the public value of diverse perspectives. As a result, arguments to support the public's interest in broadcast media have often been framed in consumerist terms. Despite the efforts of those who would take up the discourse of the public interest in order to advocate for serving underrepresented groups, this has had only limited traction, often within the confines of public broadcasting. A notable exception comes from Jackson, Mississippi during the 1960s, when African-American activists filed suits with the FCC to deny license renewals for two television stations that had histories of marginalizing African-Americans on and off-screen.[23] Though these suits established that individuals had standing to challenge the stations' implementation of their public interest obligations, both the activists and the courts eschewed the invocation of civil rights in favor of "consumer rights" to a variety of products and services.[24] Though civil rights were not invoked as a legal component of these

challenges, the subtext was one of racial justice, and the changes made to these television stations moved in the direction of greater racial inclusion. Similar challenges have emerged around gender[25] and disability,[26] as underrepresented groups have asserted their rights as media consumers in order to advocate for their rights of citizens in a mediated democracy.

From this brief literature review, it is clear that in arguments for public television as public sphere, the role of citizens' agency and participation has often been elided, and concerns with material or embodied access have been routinely ignored. While public television may foster engagement with issues of public importance, how that programming is made, what issues are selected, the role of the audience, and the ability of the audience to use (not merely have available) these media texts are all crucially important to understanding public television and the public sphere in terms of access. In the absence of such considerations, the universal access provided by public television is only availability, only the option of potential participation for a potential subgroup of the public. Turning to public access television, also known as cable access television (CATV), concerns with the public production and consumption of media become central. While access retains connotations of availability in scholarship on CATV, it also begins to more fully encompass use through the emphasis on citizen-produced media.

CATV–Access as Availability and Production

Community access television emerged in the 1970s as a service offered by cable television operators in return for their local monopolies. These stations, supported by variable combinations of customers' cable franchise fees, government grants, and donations or sponsorship, were to offer a venue in which communities could discuss local issues and see the kinds of programming made by their own members. CATV channels are generally divided into three categories,

collectively called PEG channels: public stations, which air community-made programming; educational channels that air educational content and material relevant to local schools; and governmental channels that aired local debates and proceedings. The rationale for CATV clearly speaks to the ideas of public media as a kind of public sphere articulated in relation to public broadcasting; by allowing the public access to the means of production, free speech would be furthered, participation increased, and an open marketplace of ideas could be formed that would include traditionally less-powerful interest groups. Additionally, as CATV would operate outside of the usual market system, there was the potential to air programming without concern about advertisers or ratings,[27] and the financial and technological barriers associated with producing television content were lowered through the provision of open facilities for community television production, offering available resources for those who would take advantage of them.

The promises of CATV stemmed from the same "blue skies" rhetoric that supported much of cable television's spread in the 1970s.[28] CATV seemed to offer a pathway by which citizens could become media producers, inserting their considerations into the mediated public sphere and fostering broader democratic practices. However, as seen in Kirkpatrick's case study of CATV policy development in Madison, Wisconsin, this utopian discourse quickly disintegrated through the processes by which local CATV policies were developed. Discussion quickly turned from the democratic potential of these stations to attempts to minimize fears about its potential content, leading to the dominance of a corporate-liberal framework in which government and business worked together to provide tools of expression to "reasonable" citizens through "reasonable" financial and organizational channels.[29] Such a circumscribed approach to the provision of CATV is reflected in the circumscribed scope of its access; once again, access is

a synonym for availability, though there are somewhat more resources available to citizens through CATV than through public broadcasting.

Studies of public access television have the advantage of incorporating public access to the means of production, and thus public participation in the construction and dissemination of discourse, as a key component of arguments on behalf of the public, democratic value of public access television. However, the relationship between public access television and commercial or popular television is as strained as that between public broadcasting and market alternatives. Laura Linder, concluding her study of public access television, goes so far as to say that the service should be "regarded as a public utility rather than an entertainment option."[30] The disjuncture between that media which is in the public interest, and politically valuable, and that media which is popular and trivial is preserved through statements such as this, just as it was through political economic critiques of public broadcasting and Aufderheide's call for "anti-television." Furthermore, categorizing public access television as a utility relies upon faulty logics, as public access television has not yet proven its necessity to the majority of the population that has access to it. Though it is widely available, it is not widely used. This means that the benefits of access are not being realized. By failing to take seriously the motivations and uses that the public may have for popular media, these critics fail to make a persuasive case for the importance of public media to a general audience. Once again, the availability of these options does not ensure that the public will take advantage of them, as consumers or producers. The provision of resources is not sufficient to create access.

In an argument reminiscent of Ouellette's, Kirkpatrick suggests that meaningful access to CATV is dependent upon the creation of incentives for the public to use available services. Kirkpatrick argues that scholars interested in media and the public sphere have too often ignored

the cultural barriers to accessing the marketplace of ideas.[31] Drawing on Fraser's work on subaltern spheres, he argues that the failure to address citizens as consumers of public media and the prioritization of rational discourse as ideal content has alienated potential viewers and participants, who do not recognize themselves or their concerns in this idealized form of "public access." He suggests that programming that might be considered low brow or trivial can, in fact, reach out to new audiences and encourage viewership of and eventually participation in CATV stations. As remedies, Kirkpatrick suggests that public access television should engage with popular culture in order to convince people that it has value to them as audience members, while considering the cultural hierarchies that continue to exclude particular citizens and points of view from public discourse and challenging public access television to make space for these alternatives. Here, access moves past the availability of television content and the financial and technological resources provided by CATV to encompass questions of audience use and motivations regarding media technology. Like Ouellette's argument for public broadcasting's reformation, Kirkpatrick's call to action for CATV relies upon engagement with popular culture as a means of fostering access in terms of use and not merely availability or consumer choice.

Returning to Linder's call for CATV to be understood as a utility, the lack of demonstrated desire for these services is just one barrier to such a reconception. Indeed, by invoking the model of a utility, we move away from regulations of mass media in the public interest and towards telecommunications regulations. Telecommunications have operated under mandates of universal service and common carriage, which frame access not merely as a question of consumer choices, but as necessarily affordable and ubiquitous. This utility framework encourages use by rendering content unimportant and prioritizing the provision of communication networks.

<u>Universal Service and Common Carriage–Access as Affordability and Ubiquity</u>

Mandates for common carriage and universal service, closely related concepts that were established in the Communications Act of 1934 to apply to telecommunications services, reproduce access as availability by linking it to financial affordability and material ubiquity. The Act differentiated between common carriers, such as telephone companies, that provide access to wires and broadcasters, who provide content. While broadcasters are charged with serving the public interest through the forms of content they produce and disseminate, as discussed above, common carriers are protected from liability for the content that goes out over their networks. In return for offering use of the network to all, via a mandate for universal service, common carriers are protected from being held responsible for criminal activity that occurs over that network.

The mandate for universal service originally entailed charging long-distance telephone carriers a fee, which was put in to a universal service fund that was, in turn, used to subsidize local phone companies' attempts to extend service to as many citizens/customers as possible. This enabled local phone companies to expand service without charging their customers additional fees to pay for it, and resulted in extremely high rates of home telephone access. Thus, universal service was conceived of as about availability and affordability of service on a broad scale, defined access in a binary fashion, and exhibited particular care to differences between rural and urban areas.[32] As a result, as of July 2011, the FCC estimates that 95.6% of U.S. households have telephone service.[33] Goggin and Newell suggest that universal service regulations could have been extended to the burgeoning field of internet service providers in the US in the early 1990s, as legislators discussed the National Information Infrastructure (NII), using similar logics about the centrality of this communication service as necessary but not necessarily a cost to be borne by consumers.[34] Similarly, the reorganization of universal service

in the Telecommunications Act of 1996 was permeated by cable operators' fears that they could be reclassified and charged to pay in to the universal service fund.[35] Ultimately, the Telecommunications Act of 1996 stopped well short of this, charging only those telecommunications companies that offered interstate services.[36] The major innovation in this legislation, however, was to direct some universal service subsidies to public libraries and schools in order for them to have higher speed internet and serve as hubs for their local communities.[37] This effectively made libraries and schools, with their implicitly youthful patrons and educational missions, cornerstones of digital divide policies. Throughout its history, the mandate for universal service has acted as a structure by which consumer costs are held down in order to foster the widespread availability of a resource understood as potentially necessary for the country's population as a whole. Access to landline telephones is thus about availability and affordability of a socially desirable service, with the near-ubiquity of wiring and carriers fostering this form of access.

Common carrier designations have been even more inflexible than universal service policies, failing to incorporate cable television providers or internet service providers as common carriers, despite the plausible arguments about their provision of a distribution network for others' content. Advocates of Network Neutrality, non-discrimination regarding delivery of internet content, sometimes argue that common carriage offers a solution to debates between content providers, consumers and ISPs, as ISPs would be legally shielded from liability regarding content, and consumers and content providers could have their material distributed and delivered more effectively. However, as the US has never enforced a strict policy in this regard, it may be unlikely to start with internet services.[38] The particularities of internet access are more often discussed under the rubric of the "digital divide," as is discussed in the following section.

Notably, though availability retains its prominence in the implied definitions of access furthered by universal service and common carriage, its valences shift. Where mass media in the public interest, including public broadcasting and public access television, fosters the availability of culturally sanctioned texts as options that may (or may not) be selected by an audience, the mandates applied to telecommunications services eschew invocations of "choice." Defined less as optional services than as necessary utilities, telephone services in the twentieth century linked their availability to their affordability and ubiquity. The assumption is not merely that all citizens may want telephone access, but that they should have it; thus, telecommunications services are available in order to be used, not in order to provide optional content. Telephone service was conceptualized as a public good, ensuring the endurance of public values, including equity, through available communication. The positive assumptions surrounding the telephone, of course, lead to a failure to interrogate the reasons that individuals may not want telephone services, the needs of those for whom telephones are not a usable technology, and the possible uses to which the telephone can be put. As will be seen in the history of telephony for D/deaf Americans, without consideration of these factors, ubiquity upheld public values only for hearing citizens.

The Digital Divide–Access as Materiality and Social Inequality

In the past twenty years, the literature that has most exhibited concern with the social locations of users and material to access technologies has been work on the "Digital Divide." Most often understood as "the gap between those who have access to computers and information technology (IT) and those who do not,"[39] the digital divide has been employed to make sense of difference in computer and internet access. Though availability and affordability retain some salience in this

context, the digital divide additionally addresses access in terms of materiality and social inequality.

"Falling through the Net," the series of reports issued by the Department of Commerce in the 1990s, illustrated pervasive inequities in access to information technologies along lines of race, gender, economic status, and geographical location.[40] David Gunkel's interrogation of the terminology of the "digital divide" suggests that the term was already in use for other purposes; Vice President Gore used the term in a speech about educational inequalities in 1996, and an article in the LA Times employed it to denote differences in opinion about technology.[41] By 1999, however, the update of "Falling Through the Net" used the phrase in reference to the division of access to new technologies, which quickly became the common usage and understanding of the "digital divide." Gunkel's analysis indicates that through the history of its usage, the "digital divide" has been "originally and persistently plural,"[42] referring to a host of different differences, while always slotting them in to a binary, hierarchical relationship between the privileged "information haves" and the disadvantaged "have-nots." Access to computers and the internet is thus affirmed as inherently positive and conflated with socioeconomic advantages; like landline telephony in discussions of universal service, computers and the internet are understood as potentially necessary, unlike the available options of mass media. The "digital divide" functioned in part as a renaming of a problem of inequality that had previously been discussed in terms of access or universal service.[43] Together, the polysemy of the "digital divide" and its dialectic structure have created a body of scholarship investigating diverse concerns related to computer and internet access while attempting to break away from the value-laden dualism.

Early on, studies of the digital divide focused narrowly on material access to technology. The availability of hardware, its costs, and its location in the home, school, or workplace were ruthlessly examined in order to demonstrate the digital divide. This technical divide extended far beyond local differences, as "international connections to the Internet were made through slow dial-up services, few countries had their own domain names, and few countries had the capacity to manufacture, much less maintain, computer technologies."[44] Many of the NTIA's reports furthered this model, locating differences in material access to technology. Responses to findings like this resulted in attempts to funnel resources to central community locations, particularly following the Telecommunications Act of 1996, which incorporated subsidized internet services for schools and libraries under the mandate of universal service. The provision of material technological resources in these spaces was aimed at facilitating access for those who lacked access at work or home. Similarly, many community interventions attempted to increase material access, with community centers investing in hardware and software. These community locations have been the target of significant research, much of it suggesting that despite the availability of these spaces and subsequent increase in material access, they were insufficient to close gaps in access, skills, or forms of use.[45]

By the early 2000s, research shifted to incorporate differences in skills and literacy. Eszter Hargittai referred to differences in skill, "the ability to efficiently and effectively find information on the Web," as a "second level digital divide."[46] In her detailed observation of internet users in New Jersey, Hargittai observed as much as a twelve-fold difference in the time taken by users to complete five online tasks, demonstrating a large difference in skill and potentially familiarity. Such results indicate that material access is not sufficient for meaningful or equal access, as other barriers persist. Similarly, Mossberger, Tolbert, and Stansbury

attempted to go beyond access to consider skills development, as "access is undeniably important, but the real policy question is how well society will be able to take advantage of the opportunities offered by technology."[47] Mark Warschauer argued that access to information and communication technologies is best thought of as a form of literacy, understood not simply as the ability to read and write but as the ability to make meaning from various systems in a social context.[48] Drawing on theories of social inclusion, he proposed a model of access in which physical, digital, human, and social resources all contributed to and grew from effective use of ICTs. The focus on skills and literacy leads these scholars and others to consider the ability to use technology as a precondition for meaningful access, extending previous conceptions of mass media and telecommunications access.

Discussions of skills and literacy as components of access often draw on earlier discussions of media literacy and education. Scholars calling for media education during the 1990s often heralded the need for "a new vision of literacy which reflects the complex communication environment in which citizens must manage."[49] This media literacy was generally understood to encompass the ability to access, analyze, evaluate, and create mediated messages, though calls form media literacy came from divergent fields, including cultural studies and education.[50] Advocates for the teaching of media literacy in classrooms wrestled with the tension between teaching analytic skills and inculcating students with particular political beliefs. Some, like Lewis and Jhally, considered media literacy education to be political, with an aim of creating informed citizens (not consumers) by incorporating analysis of media power and economics into media literacy curricula.[51] For others, the ability to understand and produce in multiple media forms was understood to be foundational to the kinds of communication environments awaiting students.[52] Given the rise of media content, many scholars felt that media

literacy was a necessary preparation for lifelong learning[53] and that informal environments such as fan communities could build these media literacies.[54] Michele Knobel and Colin Lankshear have explored new media literacies, focusing on online and digital media, through use of "big-L" Literacy. Unlike traditional forms of reading and writing literacy, and going beyond the media literacy curricula, Literacy involves "making meaning in ways that are tied directly to life and to being in the world."[55] This understanding of literacy is not media-dependent, but incorporates a range of social practices and interactions as potentially meaningful contributors to necessary meaning-making skills. In that way, it easily incorporates the kinds of information access discussed by scholars of the digital divide and connects them to other formulations of media literacy and the kinds of text-literacy taught in schools. Media literacy, Literacy, digital literacy, information literacy, digital skills, and similar forumluations prioritize the processes by which individuals learn to engage with particular forms of content, and in doing so acknowledge that mere access is insufficient.

Media literacy campaigns, like Warschauer's model of access, exhibit an interest in building skills or literacy in the service of a larger public good, such as equity, social inclusion, or citizenship. Such public-spirited approaches have characterized many studies that aim to move beyond the model of the digital divide by tying access to computer and internet technology to broader social differences. Warschauer himself, in *Technology and Social Inclusion: Rethinking the Digital Divide*, criticizes the binary nature of the digital divide and its implied hierarchies and causality, preferring to use social inclusion as a measure of individuals' life chances.[56] Social inclusion encompasses socioeconomic factors as well as other axes of identity and experience, recognizing that life chances are shaped by myriad, interacting variables. Warschauer argues that technology has the potential to foster social inclusion by increasing access to opportunities for

social, political, and economic participation. He claims that when access is studied, "what is most important about ICT is not so much the availability of the computing device or the Internet line, but rather people's ability to make use of that device and line to engage in meaningful social practices."[57] Again, use is highlighted, but in explicit connection to the goals of social equity. No longer is media access achieved through mere availability of optional content or services; equal access requires efforts to foster people's ability to meaningfully use media and technology for their own goals. These concerns have rarely been part of debates concerning either the public interest or universal service, and certainly, the ability to use a media technology has not been a significant component of other models of mass media access. The introduction of these variables to analyses of access indicate that research building upon the framework of the digital divide may produce more robust models of media access as it attempts to address a range of uses, behaviors, and content available through computer and internet technology.

Similar models include information equity and digital inequality, both of which attempt to complicate studies of the digital divide in the interests of the social good. For Lievrouw and Farb, "information equity" entails "the fair or reasonable distribution of information among individuals, groups, regions, categories, or other social units, such that those people have the opportunity to achieve whatever is important or meaningful to them in their lives,"[58] and is fundamental condition for social participation. They suggest that researchers should investigate access, skills, content, values, and context in order to produce nuanced accounts of the state of equitable information access and use.[59] Digital inequality undergirds Mossberger, Tolbert, and McNeal's analysis of digital citizenship as "the ability to participate in society online,"[60] as well as the comprehensive analysis done by DiMaggio, Hargittai, Celeste, and Shafter in 2004. In the latter study, the authors identified five major forms of inequality relevant to internet access:

inequality of technical means (hardware, software, connections); autonomy of use, which led to more kinds of use and proficiency; skill; social support for using technology; and the purposes to which people put their access.[61] These factors build upon one another, leading ultimately to the development of social and human capital, and digital inequality may exist at any level. The authors claim that "Digital inequality reflects not just differences in individual resources, but also the ways in which economic and political factors make such differences matter,"[62] indicating that this study of internet access has broader implications concerning social inequality.

In addition to the formation of complex models of the relationship between social inequality and access, several scholars in the past decade have focused in on particular variables related to types of media and technology use. For instance, research has turned to questions of geography,[63] to differences in skills among college students,[64] to the effects of self-concept on the development of computer literacy,[65] and differences in attitudes toward technology among immigrant families.[66] In theorizing participatory culture, Jenkins et al. introduce the concept of the "participation gap," defined as unequal access to the opportunities, experiences, skills, and knowledges necessary to meaningful participation.[67] Here, participation is made the ultimate goal, not simply access; a notion of access that incorporates uses, abilities, and motivations is implied and furthered by even this simple theoretical articulation concerning the unevenness of internet access.

Considering types of uses, abilities and motivations has resulted in some remarkably intricate models of access. John Newhagen and Erik Bucy begin their edited volume by asking, "access to what?" Their answer is meaning; they refute the inherent value of computer and Internet access, linking its value to its fulfillment of users' wants and needs. They conceptualize two broad categories of access: technological access, which includes both physical access to

things such as hardware and system access to network services; and content access, which

includes social access, comprised of one's demographics, cultural background and self-efficacy,

as well as cognitive access, which refers to the psychological resources of the user.[68] This

breakdown is particularly useful for thinking about disability and access to new media, as it

allows us to take into account the additional barriers faced by people with impairments, as well

as social access, and questions of cognitive access. Newhagen and Bucy are also somewhat

remarkable in their willingness to consider access to mass media, as well as online media. The

four categories of access that they propose apply to all media technologies, although they

consider mass media in fairly simplistic linear terms.[69] They argue that when considering new

media, it is necessary to model a nonlinear relationship between these four forms of access in

order to consider both content creation and acquisition.[70] This makes their model particularly

useful in theorizing participatory culture and the co-creation of online spaces.

An equally complex understanding of access is seen in Jan van Dijk's model of access as

a continuum that addresses motivations, material access, and uses, with individuals taking up

various positions that reflect their life circumstances. This model is based on a relational view of

inequality, in which the key factor is not the individual, but "the categorical differences between

groups of people."[71] Thus, van Dijk begins from a standpoint in which inequalities (including

technological inequalities) are a given, and can reinforce themselves in a circuitous process, or

be challenged through an increase in equality on some level.[72] Like social inclusion, this is a

vision of inequality as systemic, rather than individual, though van Dijk attempts to incorporate

individual demographic characteristics and personal categories that are linked to social

relations.[73] He argues that mechanisms of social inclusion, exploitation, and control link

categorical inequalities to specific distributions of resources, perpetuating several kinds of

uneven access. Like many others, van Dijk analyzes differences in access to digital resources in order to foster chances for participation in "the labor market, education, politics, culture, social relationships, spatial arrangements, and institutions such as citizenship,"[74] all of which are increasingly depended on networked digital media and technologies. Due to his attempts to deal with structural inequalities alongside personal characteristics and circumstances, a union that recalls critical disability studies perspectives on the social and embodied nature of disability, van Dijk's model calls for further elaboration.
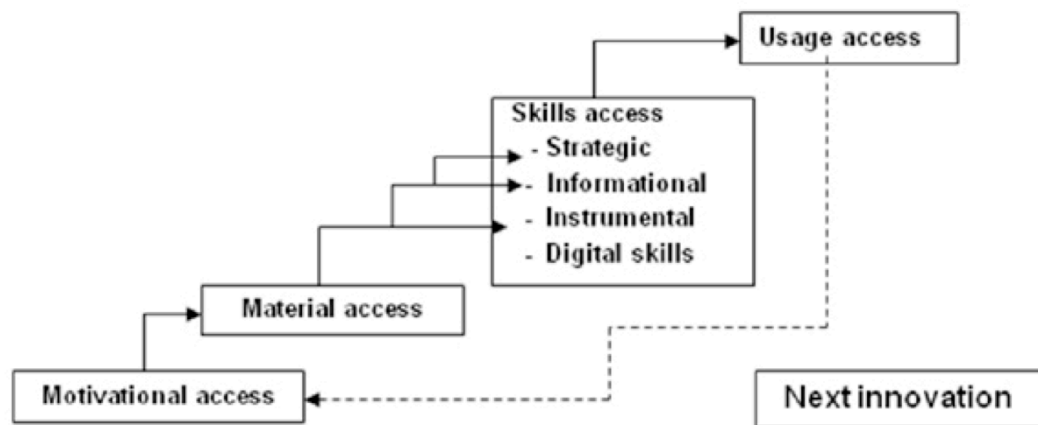
Figure 1: van Dijk's recursive and sequential model of access[75]

Van Dijk organizes dimensions of access into four stages (see Figure 1). He argues that "the best way to portray the dynamic perspective required is to picture it as a spectrum of access, ranging from those with full access using the best available technology […] to the truly unconnected."[76] He then describes this spectrum in more detail, constructing a linear model that progresses to full access. The first stage is motivational access, which entails the desire to learn about and use these technologies, and is strongly connected to the attitudes and expectations of a given social or geographical location. Secondly, material, or physical, access entails possession of the hardware, software, and connections needed, and/or permission to use them. Thus,

material access may be attained through the kinds of community resources described above, if permission for autonomous use is given; this linkage between possession and permission also allows for more complex theorization of children's internet use, as they may have the tools readily available but have radically constrained permissions. The third stage is skills access, which encompasses digital literacy, and which he defines as "the collection of skills needed to operate computers and their networks, to search and select information in them, and to use them for one's own purposes."[77] Finally, there is usage access, a measure of the quantity and diversity of applications used, or of total usage time, among other indicators of access being achieved and utilized to meet individuals' goals. Van Dijk suggests that generally usage gaps are larger than gaps in material access or skills, and that usage gaps suffer from a particularly strong "Matthew effect," in which the already privileged become even more so at a rate that outstrips possible gains by other groups.[78] Discussions of usage access also enable van Dijk to discuss content, particularly in terms of the relative dearth of culturally and linguistically-specific online resources for minority groups, which may depress motivational, skills, and usage access among these groups.

Such models of access are remarkably thorough in their attempts to break down the components of access, providing a potentially useful way for theorizing access by people with disabilities. Some digital divide research has incorporated disability to some degree, and studies of assistive technology, rehabilitation, and the diffusion of web accessibility offer more focused research on the barriers to access faced by this population. By examining this research in light of complex models of access, the benefits of a disability perspective become clear.

Most research on disability and internet technology falls into this broad category of quantitative digital divides research, including a disability-centered analysis of the 2006 US

census,[79] studies of users of assistive technology,[80] studies of accessibility implementation on websites,[81] and research out of rehabilitation fields.[82] While these studies work well for illustrating key differences and areas in need of reform regarding internet access for people with disabilities, they largely fail to dig into the nuances of those differences or how individuals might experience them. Critical examination of the material, institutional, and social structures that exclude people with disabilities from participation would enrich these predominantly quantitative studies. Such a perspective can also be articulated through a complex model of access, such as van Dijk's. He notes that people with disabilities are disadvantaged at the level of material access and that levels of access for people with disabilities lags behind those of the general population.[83] This is particularly true given the often exorbitant costs of assistive technology needed by some people with disabilities.[84] However, at the other levels of his model, people with disabilities also face barriers to access. At the motivational level, there may be lack of interest in, or even resistance to going online.[85] There may be limited opportunities for skills development for people with disabilities who are unemployed or isolated. At the level of usage, there may be insufficient culturally relevant content available and accessible to encourage regular use; the majority of American websites do not meet standards of accessibility.[86]

Such limitations may partially explain the persistent gaps in internet usage between people with disabilities and the general public. Warschauer indicated that while fewer than 25% of people without a disability in the United States had never used a computer, close to 60% of Americans with disabilities had not.[87] Survey data from the Pew Internet and American Life Project shows persistent divides: in 2003, 38% of people with disabilities went online regularly, compared to 58% of the general public[88]; in 2006, only 51% of Americans with disabilities or chronic illnesses were internet users, compared to 74% of the public[89]; and even in 2011, as 81%

of adults without disabilities used the internet, only 54% of Americans with disabilities were users.[90] Though numbers have increased across the board, relative levels of access for people with disabilities are not rising, creating what van Dijk calls a "deepening divide."[91]

Considering the continued divisions in access to technology by people with disabilities, and the multiple stages of access in which these divisions are exacerbated, it appears that disability challenges existing theorizations of the digital divide and related ideas of social inclusion, digital participation, and information equity. Furthermore, media access for people with disabilities has been defined, in part, as a civil right, challenging formulations of media access as a matter of the public interest (availability) or universal service (ubiquity). In the next section, I offer a brief history of accessible media for people with disabilities in order to demonstrate these disjunctures, before proposing a model by which media can be studied in relation to access, with an interest in maintaing public values of participation and equity.

Accessible Media–Access as Ability and Equality

Parallel to the historical development of mass media and telecommunications services, with their respective articulations to the notion of access and the service of a public sphere, media for people with disabilities has developed through assistive technologies, tireless activism, and demands for equal access as a civil right. The history of accessible media, including captioned film and television, telecommunications devices for the deaf, and internet accessibility, among other formats, relies on a notion of "access" as the (physical) ability to use a tool, or to participate in a social or physical space on an equal footing. In these histories, possibility or availability is not sufficient, as many people will not be able to function in the same manner as expected by dominant media and political systems. Thus, much accessible media has its origins

far from the halls of media policy or political theory, in communities of people with disabilities attempting to have their needs met in a context in which they are routinely not conceived of as members of a citizen or consumer public. Tensions between the privatized, medicalized conceptions of disability that prevailed in U.S. history and the extension of rights within the public sphere have shaped the availability of accessible media dramatically.[92] Through a brief history of accessibility, access is clearly articulated to the ability to use something in an equal, or equivalent, fashion. Ultimately, this leads to the invocation of civil rights in relation to media access, a framework not deployed regarding the public interest or universal service for the general population.

The first audiovisual medium to be rendered accessible was film, as the transition to sound offered to expand the general accessibility of films by removing text, but threatened to exclude deaf and hard of hearing audiences. Silent film had proven a popular means of education and entertainment for deaf audiences.[93] However, the move to sound films left deaf audiences behind, as they had neither the economic nor social clout to be considered core audience members.[94] Additionally, the construction of film-going as a public, shared, entertainment experience worked against the inclusion of people with disabilities who were excluded from conceptions of the public through a variety of laws and social norms.[95] Thus, a group of activists at Gallaudet University developed their own system for captioning films, which were largely conceptualized as educational tools.[96] This later became the Captioned Films for the Deaf Program, which was made part of the Department of Health, Education, and Welfare in 1958 with the mission of providing "enriched educational and cultural experiences through which deaf persons can be brought into better touch with the realities of their environment."[97]

These initiatives did not increase the accessibility of theatrical film, but worked first through special screenings and later through the circulation of videotapes and DVDs. Theatrical film exhibition was granted an exemption under the ADA, which states that, "movie theaters are not required to present open captioned films."[98] While some theaters provide special screenings that include open captioning, most do not. This is currently being challenged through *Arizona ex rel. Goddard v. Harkins Amusement Centers*, in which plaintiffs argue that the ADA exemption applies only to open (always visible captions) and that closed, optional caption systems are still required under the law's provisions regarding places of public accommodation. By bringing this challenge under the ADA, a rights-based approach to media accessibility is reinforced.

With the rise of broadcast media, radio programming entered Americans' homes, bringing the mediated public sphere into private spaces. Somewhat paradoxically, this both drew people with disabilities into the rhetorical construction of the public while preserving structures that maintained disability as a private matter. Through the figure of the "shut-in," people with disabilities became an important rhetorical device for the development of commercial radio.[99] Like the farmer, or the abstract "public" itself,[100] the shut-in allowed broadcasters to argue that they were not simple capitalists, but were in fact providing important services to their audience, particularly its most disadvantaged members.[101] Even as radio did offer benefits for many people with disabilities at the time, it was not an accessible technology; people who were blind, had low vision, or poor fine motor skills, among others, were unlikely to be able to use the radios of the time without assistance. And, of course, radio technology was completely inaccessible to deaf Americans.

It was the inaccessibility of telephony, however, that deaf Americans focused on remedying. Beginning in the 1960s, according to the history traced by Harry Lang, three deaf

individuals, Robert Weitbrecht, James Marsters and Andrew J. Saks pioneered much of the early development of the TTY (teletypewriter) and TDD (telecommunications device for the deaf). Using teletypwriters – initially developed for business use, and used most often for news wire services – and modems, on top of traditional telephones, they developed a means of telephone use for deaf individuals. Their goals for telecommunications for the deaf were availability, affordability, portability, and accessibility.[102] These goals reflect the prominence of ability, use, and equality in the history of media accessibility, as such conditions would enable deaf Americans to use the telecommunications network in a manner equivalent to their hearing counterparts.

Though accessible telephones existed in small numbers by the late 1960s, they were not readily available. On one hand, they faced opposition from AT&T, which at this point claimed ownership of telephones as part of their network; on the other, early users had trouble locating a sufficient number of former business teletypewriters to serve the community that was interested in the device.[103] Most crucially, there were not yet relay services that would enable a TTY or TDD call to be made to a hearing person's telephone; these devices primarily served an isolated deaf community. Accessible telephones gained traction as, in the late 1960s, influenced by other civil rights movements and the independent living movement, deaf Americans began making claims on the grounds of equality; they argued that they ought to be part of a universal service mandate, and that telephone access was foundational to independence, educational and employment opportunities.[104] This rights-based activism saw success when the Rehabilitation Act of 1973 featured the "specific inclusion of telecommunications as a rehabilitation service for persons who require use of the telephone to become employable."[105]

The success of telecommunications for the deaf, and the limited success of the Captioned Films for the Deaf led to increased activism around television captioning in the 1970s. This coincided with the disability rights movement and the rise of Deaf culture, in which deafness was reimagined not as an impairment but as a form of cultural or linguistic diversity.[106] This, in turn, led to increased claims for equal access to the public sphere, including equal media access.

Television captioning began in 1972, when Boston public television station WGBH undertook open captioning of Julia Child's *The French Chef.* Simultaneously, the *ABC Nightly News* was captioned and re-aired on many PBS stations. These services were explicitly connected to PBS's public service mission, in the tradition of providing airtime to underserved groups.[107] The early 1970s also saw the federal Department of Health, Education, and Welfare investigating the technical requirements of making captioning available on a large scale. In 1976, the first regulatory step was taken with the FCC's decision to allow line 21 of the television signal to be used for carriage of captions. By 1979, HEW determined that broadcasters' cooperation would be increased if a single, non-profit captioning organization could handle the process, and formed the National Captioning Institute (NCI). NCI's mission was "to promote and provide access to television programs for the deaf and hard of hearing community through the technology of closed captioning,"[108] and it produced the first closed captions in 1980. The NCI, and its early competitors, advocated for a closed caption system, meaning that captions could be turned on and off by individuals, making this accessibility feature potentially invisible to those who did not use it. Accessibility was not, at this time, conceived of as part of the public interest; in 1980, the FCC rejected an application to add the handicapped to a list of groups whose needs must be met in order to demonstrate serving the public interest.[109] Despite this set back, captioning grew throughout the 1980s, with 300 hours per week of cable and broadcast content

captioned in 1989.[110] Increased programming did not create increased audiences; sales of the decoders needed to view captions were stagnant. The audience for captioning was not growing, as the price, complexity, and other perceived difficulties and social barriers prevented deaf and hard of hearing customers from purchasing decoders.[111]

The arrival of the cheap digital decoder chip in 1988 ushered in a new stage of television captioning possibilities. With the arrival of the chip, it seemed feasible to incorporate decoders into all television sets at low costs; however, this extension of captioning availability required a political shift to arguing on behalf of a wider audience for captioning.[112] Closed captioning began to be presented as both a necessity for deaf people and a benefit for a range of other, rhetorically non-disabled, groups. By adding the decoder chips to all new television sets, it was argued, children and illiterate individuals would have a new tool with which to learn to read, immigrants might learn English more quickly, and elderly Americans with hearing loss would benefit.[113] This campaign led to the passage of the Television Decoder Circuitry Act of 1990, which required that all new television sets 13" or larger have decoder technology installed. The same year, the Americans with Disabilities Act included a provision requiring that public service announcements be closed captioned, in the interest of protecting the civil rights of deaf, hard-of-hearing, and similarly disabled individuals. This fit with prior attitudes toward captioning as a form of access for an audience perceived to be small and in need of special services, but this emphasis on disability per se was not politically attractive enough to create the kinds of ubiquitous captions that would result in something approaching information and cultural equity.

Increasing digitization in the 1980s also improved the affordability and availability of telecommunications for people with disabilities. The ADA finally mandated direct TDD access to emergency services and required common carriers to provide relay services.[114] This was the

result of several years of Congressional activism, which, according to participant Karen Peltz Strauss finally proved that "telecommunications access was as much a civil right as any of the other rights being pursued by the ADA's drafters."[115]

Television captions were finally mandated in the Telecommunications Act of 1996, notable for moving accessible media outside of the civil rights context and regulating communication and media directly. The Telecommunications Act of 1996, as amended in 1997, mandated that all new video programs aired by television video programming providers (networks, cable operators) be captioned by the year 2006, with exemptions for content for which captioning would prove an undue burden (initially, this included live events, such as sports). Older content was not required to be captioned, though it was encouraged. Interestingly, this section of the Telecommunications Act makes no reference to a civil rights frame, and does not even use the words "deaf" or "disability," indicating its attempt to regulate captioning per se rather than take a broader stance on media accessibility.

Looking at the history of accessibility in U.S. mass media and telecommunications, the importance of a framework incorporating equality, ability, and use is revealed. Arguments about the public interest, common carriage, and universal service failed to provide sufficient ammunition for the accessibility of broadcast media. In the acerbic words of Harry Lang, universal service's utility in the quest for accessible telephony was minimal because "apparently this universe did not include deaf people."[116] Access as availability, or choice, was rendered meaningless when confronted with people who lacked the ability to use mass media. Similarly, as in the case of telephony, access as ubiquity and affordability was unsatisfying without the ability to make use of these ostensibly necessary public resources.

In the past several years, a renewed focus on accessibility to mass media as a civil right for people with disabilities–a precondition for equality–has emerged. In 2010, when Samuel Bagenstos, principal deputy assistant attorney general for civil rights at the Department of Justice testified in the House of Representatives, he stated that "access to the internet and emerging technologies is not simply a technical matter, but a fundamental issue of civil rights," and indicated that websites considered places of public accommodation would fall under Title III.[117] On July 26, 2010, the twentieth anniversary of the ADA, the DOJ issued an Advance Notice of Proposed Rulemaking "in order to establish requirements for making the goods, services, facilities, privileges, accommodations, or advantages offered by public accommodations via the Internet, specifically at sites on the World Wide Web (Web), accessible to individuals with disabilities."[118] Even the inaccessibility of theatrical film is being regulated through civil rights measures,[119] and 298 of the 300 permanent exemptions for television closed caption were recently revoked.[120]

Such an approach argues that equal ability to use media is best understood not as a special, or charitable, accommodation, but as a fundamental tool by which equality is achieved.[121] Accessibility, then, is foundational to full citizenship in a mediated public sphere. Without the ability to watch, understand, and interpret information and entertainment media, people with disabilities are excluded from civic, cultural, social, and economic participation. Taking this a step further, access itself is an imperative component of analysis in any study of media that attempts to understand the workings of power, relationship to society, and potential for audience participation. Without a coherent framework in which to understand access, studies of media fall short of their theoretical potential regarding the public sphere, cultural politics, and the public good of equality.

Models of Access, Models of Media Culture

Through consideration of the valences of "access" deployed in public sphere theory and throughout the preceding histories of mass media, telecommunications, and accessibility in the U.S., it has become clear that it is insufficient to conceptualize media access in terms of availability, choice, affordability, or ubiquity. Instead, full access might be defined as the ability to use or participate in a given media's offerings on an equal footing. This definition is drawn from the preceding analyses, but it is widely supported in discussions of web accessibility.

Among web development professionals, scholars, government officials, and users with disabilities, web accessibility is variously defined. In government circles, its use is circumscribed by its legal import; accessibility is defined by meeting the standards laid out by the law. When defined by users with disabilities, or nonprofit organizations that represent them, it is often a general sentiment that "if you have a disability, you can do things as well as everyone else." Industry perspectives prioritize equivalency; people with disabilities may never accomplish a task as quickly as others, but it should be possible in a reasonable amount of time and have the same results. Academic perspectives prioritize nuance and define accessibility in relation to each individual's ability to meet their goals using the tools at their disposal. All of these definitions are often followed by assertions that there is no single standard of accessibility that will work for everyone, and that it may not be possible for some individuals to have equivalent access to technologically mediated tasks. Though I have generalized responses here, on the basis of interviews with each group of stakeholders, there is a great deal of fluidity between categorical responses in the verbatim statements of individuals. At the heart of each articulation of web

accessibility, however, is the public good of equality, the invocation of ability, and the chosen uses or activities of people with disabilities.

Recalling the complex models of access employed to make sense of the digital divide, material, social, psychological, and political factors can be understood to shape an individual's possibilities for access, and may both stem from and contribute to greater inequalities. A critique of these models, then, is that they present this intersectional phenomenon primarily in a linear fashion in limit their recommendations to a digital context. The stages of access described by van Dijk are somewhat haphazardly organized into a progression; one can easily imagine cases in which physical access may precede motivational access, or in which usage access drives skills access. The latter relationship, in fact, is partially proven through Hargittai's analysis of college students' internet use, as autonomous, diverse uses of the internet led to the development of greater skill sets.[122] Though Newhagen and Bucy present a non-linear, or interactional, model as appropriate for digital media, they present a linear model by which to make sense of the one-way flow of mass media and do not suggest extending their model of digital media access to other media forms. Linearity, even in the case of mass media, cannot account for their model of cognitive access,[123] which incorporates motivation; this indicates that a more robust model is necessary for the study of access in any medium, regarding any type of content.

In order to conceptualize media access in a way that emphasizes use, ability, and equality, as gleaned from accessibility history, I look to models of cultural studies of media. Circuit models, in particular, offer a way in which to hold multiple valences of analysis in tension with one another, forcing engagement with a complex field of articulations of power even as individual studies may focus on only a few of the areas described. Using a circuit also allows for the integration of factors, moving away from linearity to a interactive view of

relationships between forces in the media. Ultimately, I seek to develop an intersectional model of media access that takes into account a range of subject positions and incorporates access as a field of possibilities rather than a status achieved. Such a model takes variation seriously; the variability of bodies, circumstances, and media technologies offers both better methods of analyzing media access and possible avenues by which to expand it.[124]

Richard Johnson's circuit model of cultural studies tracks the circulation of cultural products, linking moments of production and readings to variable conditions (see Figure 2). The specific conditions of consumption, tracked along a continuum from concrete/particular to abstract/universal, "include asymmetries of resources and power, material and cultural" as well as drawing on and contributing to the lived cultures and social relations of a society.[125] Access, therefore, is contained within the "readings" segment of Johnson's circuit; material, cognitive, skills, and usage access would all be encompassed in the broad asymmetries he describes. The "production" segment incorporates access only through oblique reference to the workings of power that allow some social concerns publicity and others the status of private knowledge,[126] ignoring the problem of access to the technological and industrial means of production. This model thus undertheorizes the role of access in moments of both reception and production, all while keeping the two moments clearly separated. Such a separation is untenable in studies of digital culture, given the rapid oscillations between positions of producer and reader in even such mundane cultural circuits as a chain of email replies.

84 *What is cultural studies?*
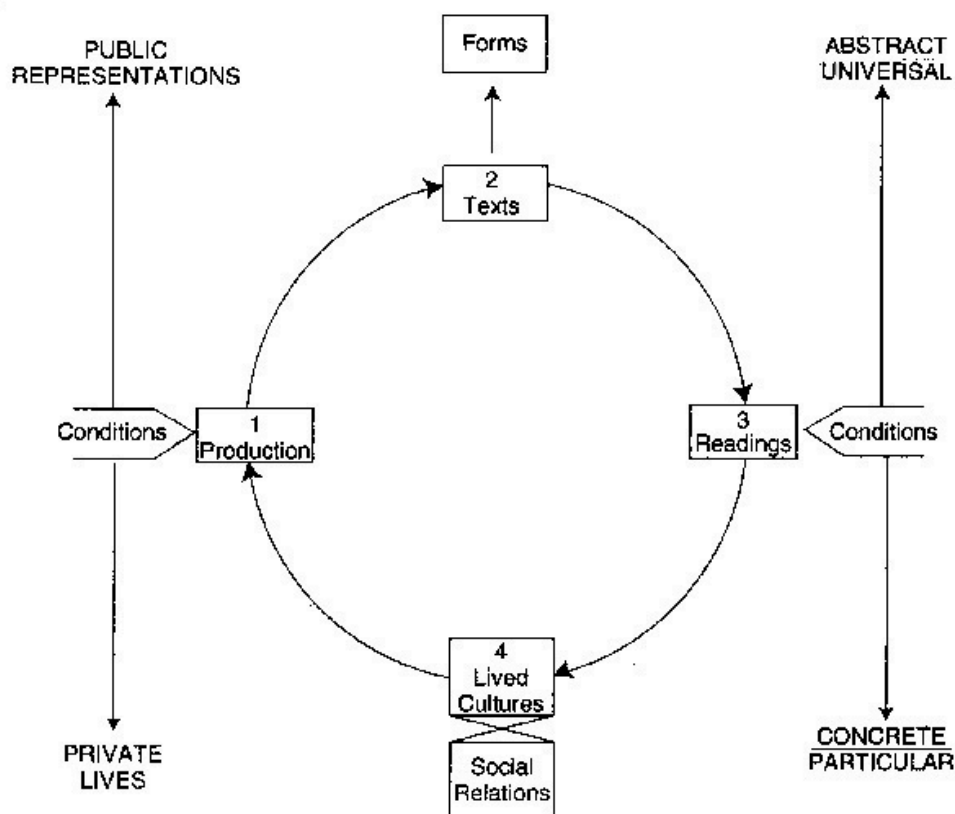
Figure 3: Johnson's circuit of cultural studies.[127]

Johnson is right, however, to suggest that cultural studies need be concerned not only

with its objects, theories, and methods, but with "the political limits and potentials of different

standpoints around the circuit."[128] The positions from which we experience and analyze cultural

products have distinct advantages and limitations, and while it may be desirable for a work of

cultural studies to incorporate the totality of Johnson's circuit, it is likely that components may

remain invisible or inaccessible from a given standpoint. This point will be revisited during

discussion of my model for studies of media access.

The circuit proposed by Paul du Gay et al. traces the progress of the study of a cultural

artifact, rather than the circulation of that artifact itself, as seen in Johnson's model. These

authors propose that a "cultural study" entails consideration of the object of study at each location on the circuit; while analysis may begin at any site, it ought to move through representation, identity, production, consumption, and regulation.[129] The sites of analysis here are thus somewhat different, more focused on the construction of articulations between sites (made by the public or by scholars) than on the standpoints on the circuit from which analysis may proceed. Though materiality of technology is considered under the rubric of "production," there is little attention to other dimensions of access. This circuit of culture enables the study of a particular object, but it does not sufficiently integrate the social positions from which that object is (or is not) accessed.
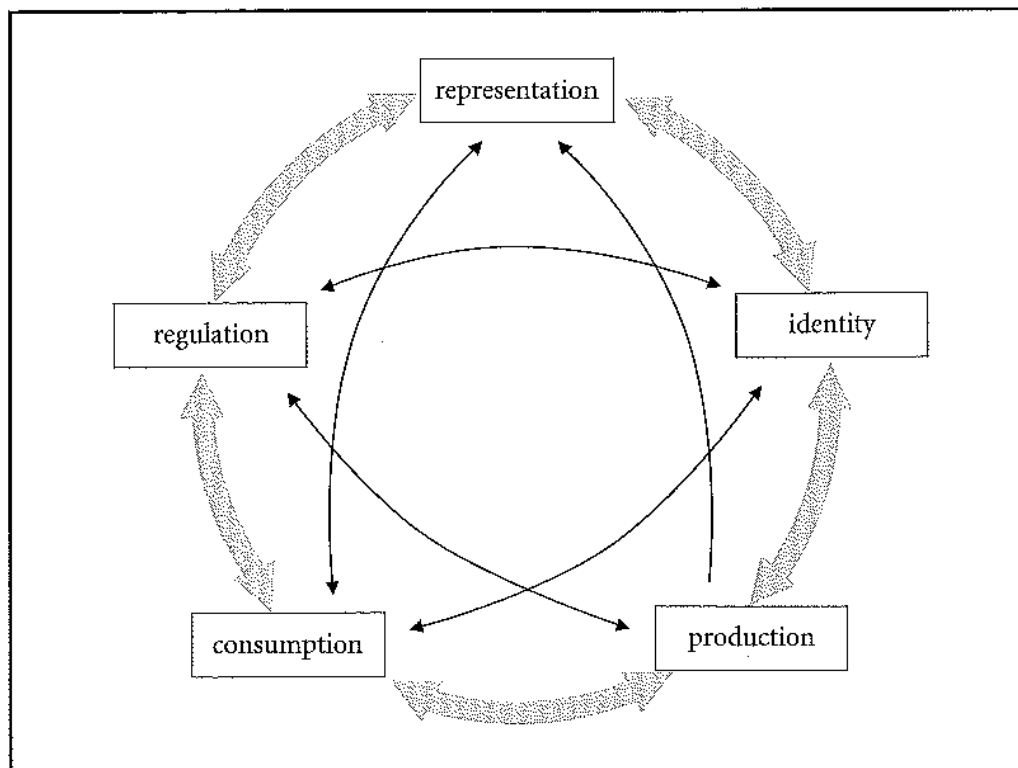
Figure 3: Du Gay's circuit of culture.[130]

Building upon these prior models, Julie D'Acci proposes a "circuit of media study," which she has also referred to as the integrated approach to media studies.[131] The integrated approach, like du Gay's model, traces the circuit of analysis, not a particular cultural artifact; the outer arrows trace the research question, while interior arrows indicate the articulations produced by the researcher.[132] Furthermore, the researcher is positioned within the field of study (the "R"), as their choices produce the research object and its articulations. D'Acci does not separate representation or identity, as done in the du Gay model, but considers them relevant at each site of analysis. These sites are understood not as absolute categories, but as conjunctural spheres in which discursive practices converge,[133] a distinction that encourages research to prioritize the most relevant sites, rather than to attempt equal attention to each sphere. This model prioritizes discursive formations, which in turn requires interdisciplinarity, as the discourses and methods relevant in each sphere may work quite differently.[134]
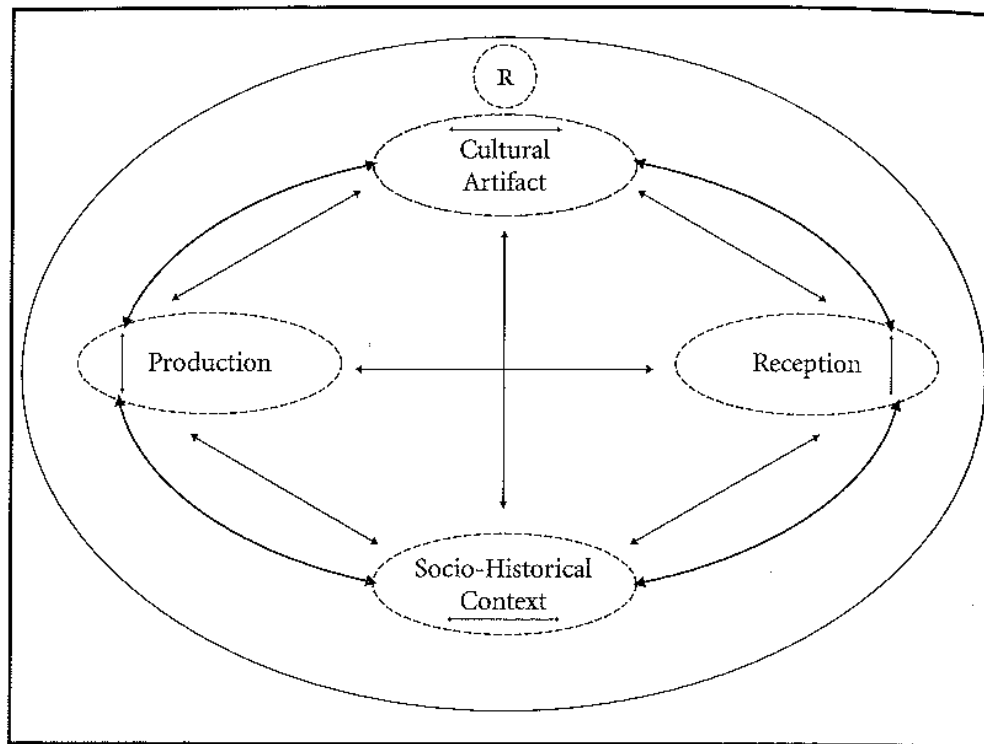
Figure 4: D'Acci's circuit of media study.[135]

In critiquing this model of media studies, I return to critiques of Johnson and du Gay;

production and reception are still treated as separate (and even positioned oppositionally on the

diagram), and while D'Acci acknowledges that discourses have material effects and that study of

capital is necessary throughout the circuit, she does not leave an obvious space in which to

investigate access to the culture being studied. The "R" of the inscribed researcher perhaps

comes closest to offering this space, as it is a conjectural space in which the researcher's

background, identity, and actions shape their relationship to the four spheres of analysis.

However, this "R" is not clearly linked to any of the four sites, and it presumes a level of access

sufficient to undertake the study at hand. As in Johnson's circuit, access may be best understood

as subsumed into audience. None of these circuit models offer a clear way in which to

investigate barriers to access to a given media technology or mediated content. In the absence of

such direction, it is all too easy to conduct a cultural analysis that stops short of investigating the

material effects of power at a quite fundamental level.

Accessibility as a Model for Studies of Media Access

In sum, access is a complex and unendingly variable phenomenon upon which all other mediated

activities rely. Looking to the progressive models of ICT access demonstrates the numerous

factors involved in access, but retains an often linear perspective in which access is a goal to be

achieved, an end state that can be reached. Looking to circuit models of media and cultural

studies, access is an implied component of audience studies and production and consumption are

held apart as separate moments in the circulation of media or in its study. These models,

however, have the advantage of eschewing a linear or progressive model, dividing up a field of

study for the purposes of manageable research while acknowledging the contingency of such divisions.

The study of media access, then, ought to draw on the advantages of both traditions while retaining a focus on the public values of participation and equality and the relations of power that produce and constrain them. If, as stated above, full media access is defined as the ability to use or participate in a given media's offerings on an equal footing, then the study of media access is the study of the degrees to which these standards can be met in particular circumstances. The study of media access is not one which always requires prescriptive conclusions, but one in which an understanding of the factors at play can ground media studies more firmly in the lived experiences of those who regulate, produce, consume, discuss, and otherwise experience a mediated public. My hope is that by articulating a means by which media access can be studied comprehensively, new research questions can be developed that will incorporate embodiment, materiality, and inequality as foundational components of media studies.

Point of Entry

The conditions of entry, represented as a kind of pinwheel at the top of the model, encompass many of the individual characteristics that influence access. Demographic analyses of the digital divide are located here, as are studies of skills, financial access, and group or community attitudes. This entry point encompasses many of the variables by which access has been measured, but it is only one moment in this model of study, which follows Newhagen and Bucy by asking "access to what?" and studies of accessibility by asking "access for whom?" while adding a third question, "access by what means?" The entry point attempts to address the second question, while the sites of form, content, and use aid in answering the others.
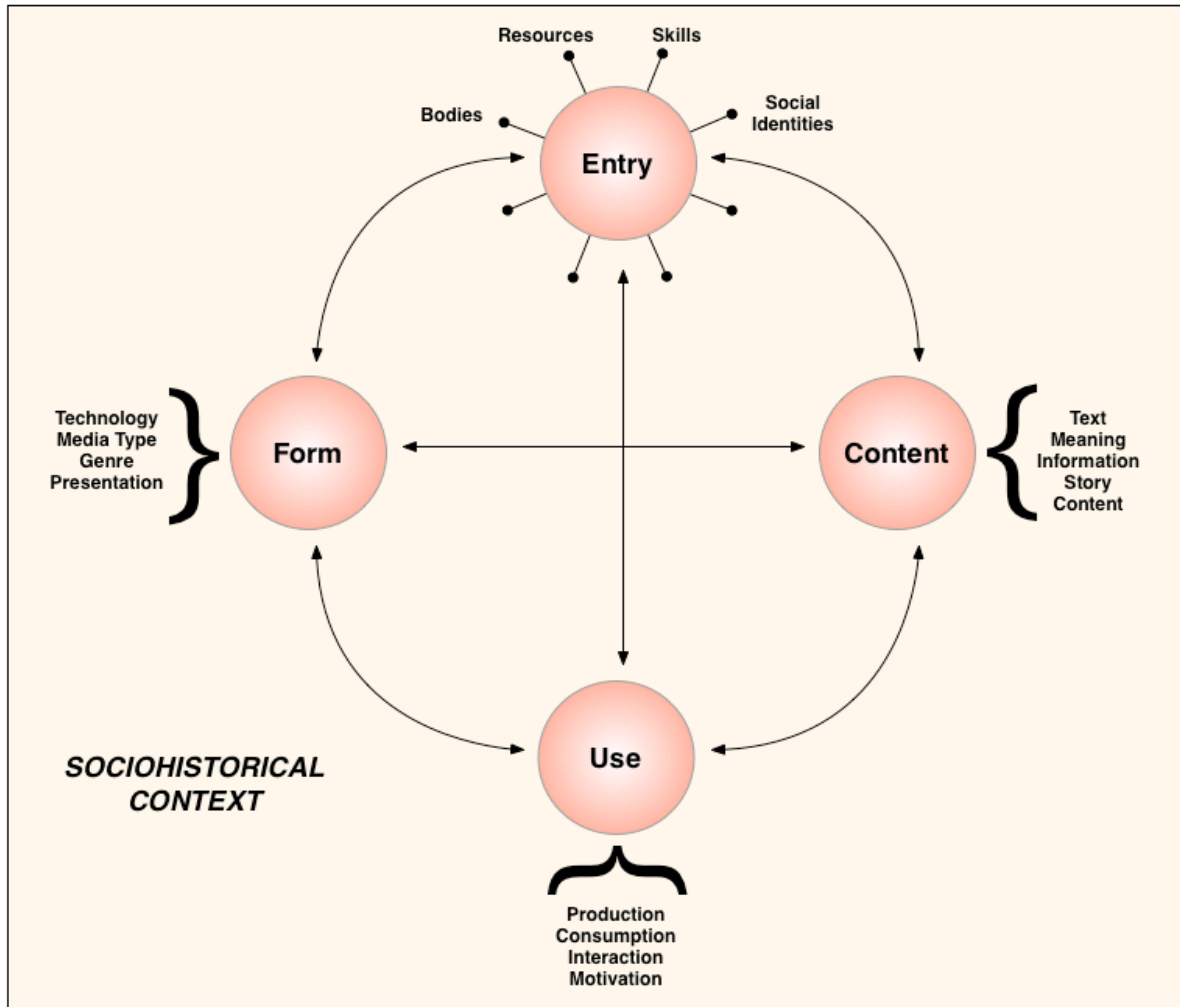
Figure 5: Modeling the study of media access.

Entry is thus a kind of identity, or positionality, modeled and understood as an intersectional identity that forms a standpoint from which the means and goals of access may (or may not) be achieved. This moment of study calls for investigating relationships to access, or the positionalities from which individuals and groups gain entry to a mediated space. This intersectional notion of entry draws explicitly on feminist theories of intersectionality as they have been taken up within disability studies. Intersection analysis requires looking at identity categories as a web of oppressions and privileges that can reinforce one another or challenge one another.[136] Identity categories and categories of oppression are understood not as additive, but as intersecting vectors at the heart of which subjects are formed. Feminist studies using an intersectional framework typically examine vectors of gender, sexuality, race, class, nationality, and similar social categories. Some feminist studies also incorporate disability as an axis of intersectional identity, and critical disability studies has enriched feminist theories of intersectionality by drawing attention to embodiment. Tobin Siebers argues that "embodiment and social location are one and the same,"[137] suggesting that the embodied self is the locus in which other intersectional elements converge, and thus that the variations of the dis/abled body are key to any intersectional analysis. Similarly, Rosemarie Garland Thomson argues that "feminist disability studies helps us understand in more complex ways that the particularities of human variation are imbued with social meanings and that those meanings comprise narratives that justify discriminatory practices that shape the lives of both disabled and nondisabled women."[138] The body is centered in the study of disability, and the addition of the specificities of the body in relation to society at large can promote understandings of identity and activity as embodied practices.

This theorization of the point of entry recalls Ellis and Kent's elaboration of "cultware" as a component of digital media use. In theorizing the point of access, they draw attention to hardware, software, wetware (the human body) and cultware as mutually influential elements in an individual's access to computer and internet media. They suggest that while the other three elements define a particular point of access, cultware "describes the digital and analog environment in which the user is embedded and the value and characteristics of that environment."[139] Cultware, then, is essentially a way of linking the cultural context of computer and internet use to the specific articulations of bodies and technologies. Cultware is a diffuse concept, which maps both to point of entry and sociohistorical context in this circuit model. Point of entry offers a degree more specificity through its incorporation of several relevant vectors along which one's social and technical positionality can be described.

The vectors that intersect "entry" in this model are those of bodies, resources, skills, and social identities. The importance of bodies and their abilities in structuring the possibilities of access will be demonstrated in the vignettes and ethnographic components of this work; thus embodiment, in all of its variations, is included as a distinct component of intersectional entry. "Resources" attempts to incorporate variances in socioeconomic status, community offerings, the availability of hardware and services, educational level, and similar resources that may be available and leveraged in accessing media. "Skills" as a vector of intersectional entry incorporates the kinds of skills, knowledge, and literacy discussed by various scholars of the digital divide, as well as their analogs in the use of other media. For instance, knowledge of how to manipulate a VCR, or more recently a DVR, would be analyzed on a skills continuum. Finally, the vector of social identity attempts to incorporate the demographic and identity categories analyzed through feminist intersectionality; variables of race, ethnicity, gender,

sexuality, geography, and local community, among others might be incorporated into analysis of this component of intersectional entry. There is, of course, the possibility that some of these variables might be incorporated into the analysis of bodies, as well; my intent is not to totally disassociate these intersectional vectors, but to suggest an approach by which they may be studied somewhat independently as well as in conjunction with one another. Intersectionality, crucially, is not an additive model of identity but a multiple one, in which various axes act upon one another to produce particular subjectivities. Thus, individual or group positions on axes of the body, resources, skills, and social identities produce subjects at the point of entry in an endless multiplicity of variance.

The production of subjects at the point of entry attempts to answer "access for whom?" by studying, at either the individual or collective level, the specifics that precede access and shape conditions for access. This may be understood as a kind of situated knowledge or standpoint theory,[140] an identity in relation to access that shapes the view of possibilities, predisposes subjects to particular goals or media forms, and creates a perspective on experiences that is necessarily partial but no less true. Incorporating the notion of standpoint into the study of access moves us significantly further from prioritizing access as a universal goal which can be achieved and towards understanding it as a broad field of possible relationships and outcomes.

Use

If analysis of entry attempts to tell us "access for whom," analysis at the site of use begins to answer "access to what?" Motivation, as studied by van Dijk, is incorporated here; the goals of access are not normally simply to have access, but to use it for a given purpose. The purposes, goals, and motivations are therefore studied here, in a moment of analysis that can be understood

as "intended use" as well as actual usage. "Use" was chosen as a designator for this site because its meanings can incorporate production, consumption, and interaction as well as motivations. Production and consumption are thus brought together in the study of access, though they will may lead to very different constellations of access throughout the other three sites, depending on the resources and skills needed at the point of entry and affecting relationships to content and form. Interaction, often seen as the key difference between mass media and digital media, is also incorporated, allowing for the analysis of video gaming, online chat, or mobile text messages among other forms of interactive digital media.

A particular advantage of "use" as a moment of study is that it expands thinking about media to confront intended and actual uses that may diverge significantly from intended or assumed uses. For instance, we might consider the iPad as an assistive technology. The iPad, developed as a high-end gadget with business, entertainment, and communication functions, has been taken up by some people with disabilities as an assistive communication technology. iPads are being used with autistic children, enabling greater communication and demonstrating the capabilities of non-verbal children.[141] These uses of the iPad as assistive device are part of a very different constellation of media access than would be seen if we began by studying the iPad solely, say, as a gaming device; the necessary financial resources, the articulations of bodies and identities, and the goals would differ, though they might overlap. Differences in form and content might also emerge from these two use positions, as well, as different content might be relevant (VoiceOver versus Angry Birds) and formal components might be different, as each group of users adjusts the iPad's settings for their needs.

Form & Content

The other two spheres in this model of media access study are "form" and "content"; though distinct, they are closely related. In fact, these areas of study have frequently been collapsed in media studies into study of "the text" (such as a film or television series) in both its formal and narrative or informational dimensions. The breaking apart of form and content, however, is a common refrain in web development, particularly when it is explicitly concerned with web standards or accessibility. In this context, the "content" is the HTML of a web page–its words, images, videos, and other meaning-generating components–while the "form," often referred to as "presentation," encompasses the page's structure and appearance. Undoubtedly, the form also communicates meaning through its design and structure, but these elements can be easily altered or removed. The separation of form and content in digital media is possible because of the modularity of digital media, which allows for elements to be combined even as they retain their individual nature.[142] Modularity, in turn, leads to what Lev Manovich refers to as the variability of digital media, which allows components to be flexibly combined, recombined, presented and communicated. He argues that variability allows for the separation of content or data from the interface, allowing a new media artifact to "exist in different, potentially infinite versions."[143] Such flexibility and transformation is foundational to the concept of web accessibility, which enables the transformation of written content to audio, in the case of screenreaders, or involves the reformatting of text by the user to aid those with color blindness, low vision, dyslexia, or other conditions that make it difficult to read text in its default presentation.

Extrapolating from the separation of form and content in digital media, I have constructed these two moments of the study of media access as related, but distinct, sites of analysis. Form attempts to isolate the formal and material components of a media use, while content attempts to delineate the meaningful and symbolic components of that use. In other words, form

predominantly answers "access through what means?" while content provides an answer to "access to what?" The subset of formal concerns on the diagram–technology, media type, genre, and presentation–are not an exclusive list; analysis of the form of media access could (and perhaps should) also incorporate the industrial and regulatory practices that give shape to particular media technologies, or the formal and aesthetic means used in representation of content. This may also be a prime location in which to consider the industrial production of media technologies and texts. Turning to the site of content, the diagram lists several ways in which to consider content, but it is also by no means exclusive. Furthermore, it is to be expected that form and content may be closely related; in studying access to a cable television program, for instance, analysis of form might focus on the television apparatus, genre, and presentation, while content analysis might look to the story and meanings, which are undoubtedly formed through genre and presentation choices. However, in separating these spheres, we may also begin to discuss alternate means of access to a given content; watching television through streaming internet services, for instance, involves a clear difference at the level of form, and arguably a difference at the level of content and meaning as different advertising structures and opportunities for manipulation of the temporality of viewing characterize online viewing.

Sociohistorical Context

Finally, this circuit of the study of media access is located within a particular sociohistorical context. This component of analysis has not been granted a singular location within the model, but has been positioned as a field in which the other four components are inscribed. This representational choice indicates the pervasive influence of this context on the other sites, each of which is necessarily located within a particular historical moment, political context, and

cultural environment. Analysis of the sociohistorical context could incorporate a range of factors, from the economic conditions, salient political debates, and regulatory climates to the cultural meanings of a given media and the nature of social relations between demographic or identity groups.

Variable and Preferred Articulations

The arrows used in this model indicate the articulations forged either by experiences of media or by researchers exploring access in pursuit of a research question. These articulation are endlessly variable, as the intersectional point of entry, desired and actual uses, form, and content exert influence upon one another and create a rich portrait of a given relationship to media access. Analyzing my own access to Twitter, for instance, provides one constellation of media access that can be traced through this model.

Beginning as I did by naming an online media service, Twitter, we begin at the site of content. Twitter is a provider of information and social dialogue, linking individual posters through a shared service; the nature of the content is not uniform, but is presented in a unified form. Analysis of form would include the 140-character limit of individual posts, the mechanism of "following" by which I choose those posters from whom I want to receive content, and the user pictures and bios that comprise profiles. Additionally, however, analysis of form would indicate that I access this content not through twitter.com, but through a third-party computer program, Twitterific, which adds additional customizable features and allows me to individualize my interface and manage content. I do this in order to facilitate both intended and actual uses, which are both to consume content from desired posters and to interact with others through Twitter conversations. I turn to Twitter for information, entertainment, and social interaction;

these diverse content motivations incorporate productive, consumptive, and interactive uses. Each use may be more or less relevant at a given point in time; currently, as I write, I use Twitter almost exclusively consumptively, as an entertaining diversion from my work. This indicates the particular importance of identifying context, as use shifts dramatically across contexts, even those as granular as moments in a day. Finally, my point of entry to Twitter is as a white, American, heterosexual, highly educated, middle class woman with fairly good computing skills and a lesser degree of coding skills, who is able-bodied by most rubrics, but nonetheless alters the form of Twitter to increase text size and avoid eye strain.

This constellation of media access reflects a highly privileged point of entry and complex uses and formal interventions in the pursuit of desired content; though access as studied through this circuit is endlessly variable, particular articulation of entry, use, form, and content are preferred. These preferred articulations indicate the assumptions that underlie access and indicate the role of power in shaping an individual's possibilities regarding equality and participation through access to media. From an older computer, with slower internet service, with less knowledge of the availability of tools to manipulate text size, with different motivations, access to the diverse, desired content of Twitter might be very different. This is not to say that it would not exist; access is not so black and white. However, the preferred articulations reaffirm that access is an easier proposition with a body, status, and cultural context that maps onto those assumed by the developers of media, technology, and content. This might even be called a preferred user position, a hegemonically normative default arrangement of access, from which access is so transparently achievable as to be easily ignored as a factor in media use.

Though attention to preferred articulations of access is necessary to considering media's relationship to public values and the public sphere, the mere awareness of variability in media

access contributes to the possibility of coalitional politics as a force for the public good. This model has drawn on the crucial considerations of web accessibility and expanded upon them to develop a means of studying media access as variable; such considerations move away from treating disability as a special case, apart from a unitary norm, and towards "a situation in which users with disabilities are treated not as a protected minority group that requires accommodation, but as one set of differently embodied users among many, as valued citizens, consumers, and voices within an online public sphere in which the benefits of accessibility are available to all users."[144] Such a reformation in the consideration of access can refocus a politics of media on shared, or overlapping needs and practices, potentially broadening constituencies for accessible media.[145] "Accessible," here, certainly includes accessibility for people with disabilities, but it may also be relevant at all four sites of analysis, in a rich sociohistorical context, to a wide variety of positionalities regarding the pursuit of ideal media access as the ability to use or participate in a given media's offerings on an equal footing, and the attendant public values of equality and participation in a democracy.

The cultural history of web accessibility that follows offers a genealogy of an understudied area of media, disability, and technology studies. However, it also offers tools with which to expand conceptions of media access beyond vague calls for physical access, financial affordability, and media literacy. In thinking about web accessibility for people with disabilities, the various articulations of bodies, abilities, contexts, and material technologies became evident; by incorporating this perspective into theorizations of media access, a richer study may be developed, capable of addressing our variable positionality as users, consumers, and producers of content.

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Chapter 2

Convergence and Difference: The Sociohistorical Context of the Web and Disability

Michael was a middle-aged blind man, living in a state capital in 1994. He lost his sight at a young age, and came of age in the 1970s. With the passage of the Rehabilitation Act of 1974 and the return of Vietnam veterans, he attended college at a time marked by increased attempts to accommodate disability. He identified strongly with a Disability Rights Movement, and advocated for independence for people with disabilities, while also developing his "blind skills," which allow him to fairly easily navigate most daily situations. Michael was pleased that the ADA passed, but given his experience of the Rehabilitation Act of 1974, was only cautiously optimistic about its implementation and effects on his life and the lives of his friends with disabilities.

Computer technology had always been interesting for Michael, and when he first encountered assistive technologies for computers in the 1980s, he was eager to get his hands on them. It was several years before these technologies were readily available, and Michael found work-arounds that allowed him to use new technologies to do his white-collar job. He used a screenreader, but due to its expense, didn't always kept it completely up to date. Michael thought that emerging computer and internet technologies afforded him a lot of new opportunities. He knew some DOS, was learning Unix, and was able to complete his work in an office environment very successfully. The internet, in particular, he found valuable for reducing isolation–he could talk to people around the world, read news more easily than he could using Braille, and his employability was increased by his ability to work with technology.

When Michael heard about the World Wide Web, which added graphics to the internet, he was intrigued by what seems to be greater ease of the Web, compared to existing means of navigating the internet. Yet, he was concerned that if graphics become normal parts of the online experience, his blindness would once again be a barrier.

Web accessibility in the United States emerged from a sociohistorical and cultural context in which disability and networked technology were both subject to reimagination. From the mid-1980s through the mid-1990s, several laws, most notably the ADA, refigured disability as a matter of rights, rather than charity. Simultaneously, the rise of computer and internet technology led to their gradual incorporation as a consumer technology of daily life, rather than as experts' tools. Cultural venues including entertainment media and the popular press provided the imaginative dimension through which the public was generally invited to understand these shifts. These popular understandings set the stage for hegemonic norms about ability and computer and internet use, creating an imagined preferred user position and marking those who deviated from it as different. The creation of difference contrasted with the increased convergence of policies, technologies, and even identities in this period.

During this time, there was a rapid convergence of previously distinct realms of law, society, and imagination. Disability regulations linked workplace guidelines regarding accommodation to civil rights frameworks. Regulation of the internet linked telecommunications policies and histories of technological development inside and outside of the government sector.

In cultural representations, it was even suggested that identity markers could cease to be relevant, converging identities into a heterogeneous "future" citizen. Web accessibility, a topic which by necessity unifies disability policies, internet technologies, telecommunications policies, and the cultural imagination emerged from these convergences. These traditions involved very different laws, protections, and discourses, and their union in the 1980s was predictably uneven and uneasy.

Accompanying convergences was the reassertion of difference, new policies, technologies, and cultural imaginings of the human provoked unease. The frequent marking of disability as difference in this context may likely have been due to the tensions between equality and sameness, accommodation and difference. Disability policies, and experiences, had to recognize both the goal of equality of opportunity and the practical realities of different needs. Disability was understood as simultaneously similar and different. This created a tension that ran throughout the era, as reimaginings of disability and networked technologies struggled with how to acknowledge differences when technology potentially allowed those differences to recede.

This chapter sets the stage for the emergence of web accessibility by laying out the sociohistorical context that was relevant to its development. It examines disability policies, converging technologies, popular press, and entertainment media, producing a picture of the era that is necessarily partial but that brings together a range of perspectives on disability and technology. Though the focus of this chapter is roughly 1985–1997, older historical material is included for context, and some slightly later examples are included as representative of dominant discourses during the target period. I begin with the earliest material, setting the stage for the notable developments in U.S. disability policy during this era by considering previous policies and their conceptions of disability.

<u>Disability Policies in the United States</u>

The history of disability policy in the United States dates back to the first provisions for

Revolutionary War veterans, in the form of financial assistance. These laws, and others through

the nineteenth century, relied on a common belief that those with disabilities were unable to take

care of themselves financially or socially.[1] Thus, a charity model dominated the official

responses to disability, providing assistance to those understood as helpless. That early legal

definitions relied on the loss of ability to work further indicates a model in which people

(particularly men) with disabilities were conceived of as outside of the normal order of society

and in need of charity. Official legal policies further demonstrated an assumption that those with

disabilities should be largely confined to private spaces, as in the case of "ugly laws" that

prohibited those with visible infirmities or deformities from occupying public spaces.[2] As they

would not qualify under protections for veterans or workers, women with disabilities were

particularly likely to be largely confined to private spaces such as the home. Additionally, the

nineteenth century saw the rise of residential institutions for the treatment of emotional and

cognitive disabilities (including, at the time, hysteria), resulting in many women with disabilities

being removed from not just public but even social spaces.[3] The cultural attitudes that supported

the removal of persons with disability from social structures were further evident in the awe with

which the public greeted those disabled individuals who performed in freak shows as a kind of

exotic and unusual spectacle.[4] The restrictions on the public rights and visibility of people with

disabilities extended to governance of their bodies, particularly their reproductive capacities.

Eugenics movements of the nineteenth and twentieth centuries led to remarkable restrictive laws

regarding the reproductive lives of people with disabilities, including marriage prohibitions and

enforced sterilization, that contributed to the cultural asexualization of people with disabilities, setting them yet further outside of normative life activities.[5]

By the 1970s, people with disabilities began to self-organize in opposition to disability policies that valorized medical authority in classifying individuals' health and responded through limited charitable channels. The return of Vietnam veterans, a new public face of disability, coupled with legislative victories in the 1960s and 1970s for women and African-Americans, created an environment in which the civil rights model seemed a viable means of reshaping disability policy.[6] Self-determination was at the heart of the disability rights movement that emerged in the 1970s, reflected in both the independent living movement and the right to public education for students with disabilities (first established in *Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania* (1971) and codifed in the Education for All Handicapped Children Act, revised in 1997 as the Individuals with Disabilities Education Act, in 1975). Due to the paternalism with which disability policy had often been made,[7] the disability rights movement argued not merely for legal equality but for the status as adult citizens who could be responsible for their own lives. Just as the paternalism of culture and policy regarding disability was somewhat similar to paternalistic ideas about gender that were challenged by women's movements, the disability rights movement relied on consciousness raising in which individuals recognized themselves as part of a larger oppressed group, and began to take political action in order to address that oppression.[8]

In the progress of a civil rights-based approach to disability in the United States, 1973 marked a crucial point. First, activists in California succeeded in forming the Berkeley Center for Independent Living in 1972, moving many individuals out of institutions and into the community. From that point, independent living movements emerged across the country. The

independent living movement "has been the linchpin of the DRM [disability rights movement] in the United States,"[9] demonstrating the powerful impact of increasing the legal and practical autonomy of persons with disabilities as well as the utility of a community-based movement. Attempts to include provisions for independent living in revisions to vocational rehabilitation funding laws in 1972 were vetoed by President Richard Nixon, galvanizing the nascent disability rights movement in support of the measure and against Nixon.[10] The next year, the Rehabilitation Act of 1973 was passed, with Section 504 of the law marking the first guarantee of civil rights to people with disabilities. It declared that "No otherwise qualified individual with a disability in the United States […] shall, solely by reason of her or his disability, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[11]

Yet, neither the civil rights protections nor other portions of the Rehabilitation Act were immediately enforced. A series of protests in 1977, in which disabled activists occupied government offices, drew attention to the civil rights of people with disabilities. Most famously, 25 San Francisco protestors occupied government buildings for 60 days, waiting until regulations were signed despite threats to withhold food and communication from the protestors.[12] The 504 sit-ins have been considered a turning point for the disability rights movement and the utility of the rights-based approach to disability policy because of the protests' ability to redefine disability in social, not medical, terms, because of the coalitions with other social justice organizations, because of the unification around "disability" rather than on specific medical conditions, and because of how its success fostered a positive disability-based identity.[13] This claiming of identity, and adoption of disability as a social problem, enabled the emergence of a

rights-based politics of identity that would increasingly characterize legal approaches to disability in coming years.

Though civil rights approaches to disability offered a move away from medical or charity models of disability and utilize a recognizable legal and policy framework in which to argue for minority protections, they have also faced specific challenges. First, Longmore has argued that disability rights movements have "simultaneously called for both equal rights and exceptional treatment," as accommodation and support services will always be necessary to ensuring the inclusion of people with disabilities in society at large.[14] Unlike measures such as affirmative action for women and racial minorities, understood to be temporary redresses for inequities of the past, the need for accommodation can never be surpassed. Secondly, legal scholar Adrienne Asche has suggested that by preserving "disability" as a category separate from other, "normal" bodies, cultural ideas of accommodations as "special rights" can be allowed to persist.[15] These tensions between equality and difference, disability as a protected category and disability as an element of human variation, and access as a "mode of equality"[16] or special treatment continued to characterize policies and representations of disability throughout the 1980s and 1990s.

Legal Convergence of Disability, Telecommunications, and Computer Technology

By the late 1970s and early 1980s, an increasingly civil-rights based approach to disability-related laws met a quickly changing telecommunications environment. Following the passage and enforcement of the Rehabilitation Act of 1973, and amid increasing pressure from disability rights activists, telephone networks and telecommunications policy began to make policy accommodations for deaf and hard of hearing individuals. Starting in 1978, the FCC began inquiries into the telecommunications needs of deaf Americans.[17] This resulted in the 1982

Telecommunications for the Disabled Act, which amended the Communications Act of 1934 to require that essential public places, such as hospitals or police stations, have telephone access for deaf and hard-of-hearing patrons, in addition to requiring that workplace telephones and coin-operated phones be compatible with hearing aids.[18] These moves toward inclusion in telecommunications were largely undertaken in the name of accommodations in employment and emergency services, not by arguing for expanding notions of universal service or through civil rights arguments.

The emphasis on employment contexts began to shift by the late 1980s, as the Technology-Related Assistance Act of 1988 enabled states to provide assistive technology to aid people with disabilities in their daily lives, and the 1988 Hearing Aid Compatibility Act required that all US-manufactured telephones by made compatible with contemporary hearing aids. These policies not only incorporated a social model of disability by mandating structural changes to society in order to foster inclusion, but extended the protections granted to people with disabilities beyond the public and employment sectors.

This period also saw the gradual convergence of a third concern, namely, computer and internet technology (and, eventually, the World Wide Web).[19] Beginning in 1969, and expanding to academic and civilian use through the 1970s and 1980s, the Advanced Research Projects Agency Network (ARPANET) represented the first step toward widespread internet use in the United States. Email, often considered the "killer app" of this early internet, was largely pioneered by Vint Cerf, one of the developers of TCP/IP packet-switching protocols. Cerf, hard-of-hearing from birth and married to a deaf woman, "had a personal interest in [developing] E-mail; [he] was glad to have its assistance in dealing with complex problems."[20] This intersection of lived experiences of disability and the development of internet policies and protocols is often

unremarked, but in many ways concerns about disability, assistive technology, and the changing

legal environment regarding disability and telecommunications were deeply ingrained in the

development of computer and internet technology in the United States.

In 1984, the White House and the Office of Special Education and Rehabilitation services

began "to address the question of access and use of standard computers and computer software

by persons who have disabilities,"[21] initiating a national Industry-Government Initiative on

Computer Accessibility. The founding of the Clearinghouse on Computer Accommodation

(COCA) in 1985, as part of the federal government's General Services Administration, marked

another step in government-sponsored technological accessibility services. COCA provided

options for the forms of accommodation that federal employees were entitled to under the non-

discrimination protections of the Rehabilitation Act of 1973. The center, later renamed the

Center for IT Accessibility, aimed to advance "equitable information environments consistent

with non-discriminatory employment and service delivery goals."[22] This included running a

"Solutions Center" in which users could test out various assistive technologies.

The solutions center gained importance following the Rehabilitation Act of 1986. This

update to the Act of 1973 introduced Section 508 of Title V, reading, in part:

> The Secretary […] shall develop and establish guidelines for electronic equipment
>
> accessibility designed to insure that handicapped individuals may use electronic office
>
> equipment with or without special peripherals.[23]

This first articulation of Section 508 did not include plans for writing or enforcing such

guidelines, nor did it indicate exactly who would be responsible for producing such technology,

leaving COCA to operate largely as a model for compliance.[24] However, it pulled disability

rights into conversation with telecommunications, as accessible telephony was one of the most

common forms of accommodation, as well as with the emerging ubiquity of office computing and possible use of computer networks.

This quickly emerging ubiquity of computing led Gregg C. Vanderheiden, director of the Trace Research and Development Center at the University of Wisconsin–Madison, to observe that those in the assistive technology industry would have to move beyond assistive devices to developing accessibility principles for these technologies so that they could more readily be used by a range of individuals. He "worried about the fact that [computers] were going to someday be ubiquitous, and people with disabilities need to not be able to do just special things on them, but regular things."[25] The Trace Center coordinated the Industry-Governement Initiative, and from this work, the computer accessibility guidelines used by the General Services Administration for Federal information technologies were developed, and numerous computer companies began implementing suggested accessibility features.[26] Assistive technology was already struggling with issues of convergence and difference, as increasingly the provision of dedicated technology for people with disabilities was insufficient to allow participation with the range of computer technologies that were developing in the mainstream. To allow people with disabilities to meet goals through the use of mainstream technology was in some ways more challenging than developing separate systems to meet particular needs, but Vanderheiden correctly speculated that this convergent approach would be the only way to move forward as technology and its uses became part of daily life in American culture.

The Americans with Disabilities Act

If the Rehabilitation Act of 1973 introduced a civil rights framework to American laws regarding disability, the Americans with Disabilities Act (ADA), passed in 1990, extended those

protections beyond the federal sector and once again intervened in telecommunications law. Using the definition of disability pioneered in the Rehabilitation Act Amendments of 1974, the ADA stipulated that disability is "with respect to an individual, (A) a physical or mental impairment that substantially limits one or more major life activities of such individual; (B) a record of such an impairment; or (C) being regarded as having such an impairment."[27] This is a clear invocation of the social model of disability, in which impairment is separated from socially-constructed experiences of oppression that create "disability," and the ADA further implied that some reasonable accommodations or unique forms of access may be needed in order to realize equality, returning to the insistence on equity and difference that has characterized the disability rights movement. Title I of the ADA dealt with employment discrimination, Title II with public services, Title III with public accommodations operated by private entities (such as restaurants, libraries, etc.), Title IV with telecommunications, and Title V with miscellaneous provisions regarding the implementation of the act.

Title IV policies explicitly addressed telephone and television services, requiring expansions to TTD and closed-captioning services. First, in amending the Communication Act of 1934, Title IV required common carriers providing "telephone voice transmission services" to "make available to all individuals in the United States a rapid, efficient nationwide communication service, and to increase the utility of the telephone system of the Nation, the Commission shall ensure that interstate and intrastate telecommunications relay services are available."[28] The FCC was responsible for enforcing these regulations, under the same structures that governed other common carrier policies. Once again, a personal story of disability intersected with this policy history, as Senator Tom Harkin (D-IA) advocated for TTD services on behalf of his deaf brother, Frank Harkin, who received a celebratory relay call from President

Bill Clinton in 1993.[29] The second component of Title IV was a minimal closed-captioning requirement that any televised public service announcement produced or funded by any agency of the federal government include closed captioning.[30]

Though Title IV most directly affected existing telecommunications law, Titles II and III would emerge as most relevant to ensuring nondiscrimination and accessibility in online contexts. Title II stated that "no qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of services, programs, or activities of a public entity, or be subjected to discrimination by any such entity,"[31] and established that the failure to provide "reasonable accommodations" for people with disabilities would constitute discrimination. Title III, among other policies, required places of public accommodation to provide aids or services to ensure effective communication with people with disabilities. Reasonable accommodation and effective communication would become crucial policy ideas in potentially extending the protections of the ADA to online spaces. This was first made clear in a 1996 letter to Sen. Harkin from the Department of Justice, which argued that "covered entities that use the Internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means, as well."[32]

At the time, however, the ADA did not mention the internet explicitly, despite the rapid rise in interest in and development of online activities both within and outside of government. Internally, Congress and other government agencies were making plans for Vice President Al Gore's "information superhighway," in the form of the National Information Infrastructure. Plans for the NII, issued in 1993, "proposed that communications, information and entertainment would all become part of a universally accessible network of networks, which could be interactive, decentralized, and competitively provided."[33] For government agencies such as the

Center for IT Accessibility, the NII represented a potential opportunity and concern, leading

these agencies to put more of their energies into online accessibility.[34] Additionally, ARPANET

was dismantled in 1990, and the network it maintained was moved to the National Science

Foundation Network (NSFNET), which had been providing internet services to academic

communities for nearly a decade. In 1995, NSFNET underwent a similar hand-off, giving control

of its backbone of networks to a group of commercial internet service providers. This gave rise

to the possibilities of commercial uses of the internet, and complemented the increasing interest

in existing services such as UseNet servers and online services such as Compuserv.

In some cases, the rise of online materials was seen as a boon for people with disabilities,

but along with enthusiasm came concerns about the accessibility of these services. Such caution

was seen in a 1992 special issue of *Communications of the ACM*, which focused on computers

and people with disabilities. The editors wrote that, "access to information and high-tech careers

by disabled people has been hampered by shortsightedness on the part of computer and

telecommunications systems designers."[35] This tension between the internet's potential to

improve the lives of people with disabilities and its potential to create new forms of disability

through inaccessible technology[36] would only increase with the rise of the World Wide Web.

The World Wide Web

The rapid popularization of the internet among government, academic, and increasingly

mainstream audiences was further sped up by the introduction of the World Wide Web.

Developed by Tim Berners-Lee, with the participation of Robert Caillau and others at the

European Organization for Nuclear Research (CERN), the web introduced the hypertext transfer

protocol (HTTP), which allowed users to move between documents via hypertext links. Based on

the principle that all documents would have unique identifiers (URLs) and be equally accessible from any other document, the Web offered a decentralized mode of internet use. Additionally, hypertext markup language (HTML) allowed for the customization of visual displays and the incorporation of images and other multimedia features. With the advent of the web, the potential of the internet for accessing information, entertainment, and e-commerce grew quickly.

Crucially, the World Wide Web was distributed free of charge. As Gopher, a contemporary online search and retrieval service, plummeted in popularity following the introduction of licensing fees, Berners-Lee chose to keep the Web noncommercial, building an audience and avoiding market competition.[37] Instead of forming a company, Berners-Lee, CERN, and the Massachusetts Institute of Technology Laboratory for Computer Science (MIT/LCS) came together to form the World Wide Web Consortium (W3C) in 1994. In its founding, the W3C stated its mission "to lead the World Wide Web to its full potential by developing protocols and guidelines that ensure long-term growth for the Web."[38] Similar to the Internet Engineering Task Force (IETF), the W3C was intended as a loose consortium of interested parties who would develop open technological specifications to improve the state of the Web over time.[39] The W3C created an open process for soliciting participation from industry, developers, researchers and others, but it did not have enforcing authority; as Berners-Lee has stated, "we produce Recommendations–not Standards or regulations–and we have no way to require anybody to abide by them."[40] Thus, these were essentially voluntary guidelines, but they shaped the development of a shared language by which the Web has developed and continues to evolve. That the web was freely available and being standardized from this early date enabled it to become a robust, dominant set of protocols for the rapid rise of online sites and services throughout the 1990s.

This growth was further enabled by the development of stand-alone Web browsers, which interpreted and displayed HTML pages. The first mainstream browser was Mosaic, developed by Marc Andreesen at the University of Illinois' National Center for Supercomputing Applications. Mosaic, like the World Wide Web, was distributed for free and dramatically increased usage of the Web; within two years of Mosaic's launch, the percentage of internet traffic that relied on the Web and HTTP protocols went from one percent to roughly a quarter of all usage.[41] While the Web remained non-commercial, competition among browser software soon heated up. Andreesen and his business partners released a commercial browser, Netscape Navigator, in 1995, which improved upon Mosaic and resulted in a multi-million dollar initial public offering on the stock market that has been pinpointed as the launch of the dot com bubble.[42] In 1996, Microsoft launched its competitor, Internet Explorer, which was bundled with machines running Windows operating systems. This initially led to a vast increase in IE usage, before the bundling practice was declared monopolistic. Later entries to the browser market would eventually include Opera, Apple's Safari, Mozilla/Firefox, and Google Chrome; though all interpret HTML, they often do so differently. Thus, the browser wars were not only about economic competition, but about the ways in which standards were and were not incorporated, and the coding gymnastics often required to make a single Web page display properly in an array of browsers that might or might not implement W3C recommendations. Even as unified web development was possible, differences in browsers required coding for browsers individually, splintering the convergent potential of web protocols and W3C guidelines. In addition to their relevance to developers, such tensions between unity and difference also characterized the cultural imagination of disability, technology, and web use in the 1990s.

The Cyborg and Popular Representations of Disability and Technology

With the rapid expansion of the internet and World Wide Web, the arrival of e-commerce, and increasing discussions of the need for children to be prepared for a kind of digitized future, the changes to be wrought by networked digital media were a matter of regular cultural reflection. The promises of new technologies were conveyed through popular media, setting up particular expectations around the digitally-mediated future that often tended to the utopian and dystopian.[43] Society complemented its utopian hopes for wealth, enlightenment, and education with dystopian fears of financial ruin, evil cyborgs, and isolation. The stark contrasts of cultural attitudes toward technology in this era extended to disability, which often appeared as a condition to be "fixed" by computers and the Internet, and was invoked by the representations of cyborgs seen in popular media. Technology, it seemed, could eradicate the difference of disability, or it could create threatening differences of superability. Taken together, these oscillating hopes and fears relied upon a narrative whereby the internet and related forms of computer technology would *transform* culture, social institutions, and even individual bodies. One prominent icon of the era that often connected technology to disability was the cyborg. Fusing the technological with the human, these cyborgs were icons of science fiction, drawing out hopes and fears about both the future and the computer-mediated present.

Several of these fictional cyborgs were enhanced, hypermasculine creatures[44] in comparison to which the fleshy human male could seem potentially disabled. The protagonists of *Terminator 2* and *Robocop* fit this model, combining superhuman technologically-enhanced abilities with partial displays of flesh and storylines that incorporate the humanization, and emotions, of the machine-man. Mark Poster's analysis of *Robocop* suggested that it ultimately presented the body and machine as mutually-reinforcing, a fusion that challenged notions of

humanity and citizenship,[45] while Doran Larson analyzed the increasing acceptance of the fusion

of the human and the technological in *Terminator 2* as compared to *Terminator* or *Blade*

Runner.[46] These representations presented a near-future in which the body can be augmented or

transformed without the loss of humanity, but they equally presented a vision of masculine,

physical power that was at odds with the corpus of feminist scholarship on the cyborg, leading

Robyn Clough to argue that "The actual cyborg is Haraway's female cyborg," not these figures

of science fiction.[47]

The visions of cyborgs presented in the *Star Trek* franchise perhaps came closer to this

ideal, particularly in *Star Trek: The Next Generation*, known for its liberal, humanistic, and

literary twist on the space adventure series. In *ST:TNG*, nearly all characters were cyborgs of one

kind or another; from the humanized android (Data) to the blind engineer who saw with the aid

of a special visor (Geordi LaForge) and the artificial heart of the Captain (Jean-Luc Picard), the

relationship between human and machine was a persistent undercurrent to the development of

characters and plot through the program's seven-year run. These relationships of human and

machine seemed to become more closely integrated over time, as Data developed more

understanding of the human condition and LaForge's visor was replaced by internal devices that

allowed him to see, both correcting and rendering invisible his initial disability.

The most notable instance of cyborg representation on *ST:TNG* was The Borg, an alien

collective led by a Queen that grew through the assimilation of other individuals and alien races.

Assimilation entailed the adding of technological components and a direct connection to the hive

that often totally eliminated individuality. The Borg understood hybridization as a quest for the

most perfect form, which would necessarily incorporate human and machine. The most striking

Borg stories were the two-part episode "The Best of Both Worlds" (1990), and the attempt to

assimilate android Data in the film *Star Trek: First Contact* (1996). In the former, Captain Picard was assimilated as part of the Borg's planned assimilation of Earth; this disrupted the known character by introducing a hybridized version that blends Picard with what the audience knew of the Borg. Though Picard was rescued and un-assimilated, the experience continued to shape his character over the next several seasons. In *First Contact*, the Borg Queen attempted to bring the flesh to the machine, capturing Data and demonstrating the Borg's ability to grow skin for him in an attempt to get access codes from him. Ultimately, the film's climax featured Picard killing the Borg Queen, an action linked to plot imperatives, but also tied to motivations of revenge. In both cases, the cyborg male was a condition to be avoided, while the Borg were reliably feminized through their cyborg Queen and collective nature.[48] This female, hybrid cyborg was perhaps more true to Haraway's vision, but she was represented not as possibility but as threat. Moving beyond gender analysis of the cyborg, Mia Consalvo considered The Borg in terms of ability status. Incorporating feminist and disability studies scholarship on the body, she arguesd that The Borg reflected "our fears of assimilation, our ambivalence about the encroachment of technologies into our lives, and our obligatory systems of gender and what we have determined to be normal and abnormal bodies."[49] Additionally, Consalvo closed by calling for the inclusion of the voices of people with disabilities in cybertheory, as integrating disability and body theory with cybertheory offersed a rich means by which to understand and direct the body's relationship to technology.[50] This suggestion that lived experiences of disability be put in conversation with theorizations of the cyborg indicated a disability studies perspective that aimed to complicate, not merely apply, cyborg politics, representations, and theories.

The popular representations of cyborgs did share with Haraway, and related scholarship, the blending of human and technological. Hybridity, fusion, the role of the human, and questions

of gendered and able bodies persisted. However, where scholarly attention to the cyborg discussed it largely as a condition of the contemporary era, these representations were nearly entirely futuristic, projecting the possible directions of cyborg embodiment. Additionally, where Haraway's cyborg was a progressive political force, the cyborgs of popular culture during the 1990s were often (though not exclusively) villains, whose breakdown of the human-machine binary was reflected in the seeming breakdown of boundaries between good and evil, right and wrong, disabled and superpowered.

Selling Diversity and Silencing Disability in News and Advertising

Turning from fictional representations to other forms of popular media, the articulation of disability and technology in news and advertising was most often made in terms that celebrated the possibilities of internet technology to improve the lives of people with disabilities. The possibility that technology might make life harder for a number of individuals was raised occasionally, but only to be countered by optimistic coverage of disabilities soon to be "solved" through consumerism and computer and internet technology.

The internet, and computers in general, were often presented in the popular news media as a "lifeline"[51] that could connect people with disabilities to the rest of the world. Online, users with disabilities were presented as uniquely empowered, as "things are getting better all the time,"[52] because the web could offer opportunities for employment for blind people,[53] or "has changed forever the lives of blind people,"[54] and d/Deaf people could "send e-mails back and forth to hearing folks."[55] Many of these stories were written as human-interest pieces, explaining web accessibility and the needs of people with disabilities to an audience that was not familiar with these topics. This often entailed explaining the challenges faced by people with disabilities

in using technology, as a foundation for the optimism of the rest of the story. Computer technology was useful, but also "an endless source of frustration,"[56] technology was accessible, but people with disabilities feared that it might become less so,[57] and advocates requested greater attention to accessibility features, as they were "being forced onto a side road."[58] Though they mentioned differences and difficulties, these mainstream media stories most often treated such problems as likely to be solved quickly through voluntary measures.

In doing so, the popular press upheld a charity model of disability, suggesting that such services would be provided by companies or others through their own self-interest, and would not need to be enforced by the state. Whereas the charity model often functioned through the moral self-interest of those providing services, particularly when services were tied to religious or other organizations dedicated particularly to providing charity to those in need, web accessibility invoked a charity model that was governed by economic self-interest. It was often argued that greater accessibility would lead to greater financial success, as "in the competitive rough and tumble of the .com world, widely accessible Web sites and service providers will have the edge."[59] Why would accessible sites have an edge? The confidence that the problems of accessibility could be solved without government intervention appears to have been rooted in the enthusiasm surrounding e-commerce. In numerous publications discussing the potential reach of e-commerce, people with disabilities are mentioned as a new potential market. Online, "cybershopping can open new opportunities"[60] for people with disabilities who were "eager to use the Internet and use our credit cards and spend our money on line,"[61] and could "shop for products online and get as much information as they want."[62] The ability to shop was even conflated with general equality, as Netivation.com CEO stated in a press release that, "the Internet is a great equalizer for the handicapped and home bound."[63]

These statements, and reporting in this vein, illustrate what has been called a consumer model of disability, whereby people with disabilities are positioned as consumers (not necessarily citizens) who choose from a range of options and self-advocate for attention to their needs.[64] The consumer model, like the charity model, often conflicts with rights-based or social models of disability, as the suggestion that governments actively protect the rights of people with disabilities by requiring their needs be met is incompatible with market- or charity-based perspectives in which the needs of people with disabilities are understood as optional. Though these statements upheld a sameness of disability and mainstream technology use, they rejected the needs of people with disabilities as too different to be meaningfully addressed on anything other than a voluntary basis.

Furthermore, as these examples promised a future in which disability was made irrelevant, they served to reinforce preferred user positions. Rather than considering how disability might challenge existing technological systems, cultural interfaces, or practices, these stories implicitly argued that these venues would enable people with disabilities to take up a preferred (abled) user position. Recalling Lessig's notion that the anonymity of the internet would facilitate social inclusion for the "blind, deaf, and ugly,"[65] pronouncements about the utility of the internet for people with disabilities often depended upon affirming the value of a non-disabled subject position and offering technology as a means by which people with disabilities might, in some ways, take up that position. Differences in opinion or experience were not made meaningful in these stories, and certainly not presented as a possible challenge to existing technological structures, online practices, or cultural assumptions about computer and internet use. A similar invocation of technology as a means to bring people with disabilities into

a preferred user position as a consumer of digital media was seen in much advertising for computer and internet-related services during this period.

The address of people with disabilities as potential consumers was not limited to news outlets, as several commercials for computer and internet services aired on television during the 1990s invoked disability. A series of 1993 advertisements for AT&T titled "You Will" presented visions of a networked future including paying tolls without stopping a car, videophoning to tuck a child into bed, navigating without asking for directions, or sending a fax from a tablet, among other things.[66] One in this series of advertisements offered an image of disability accompanied by a voiceover and non-disabled momentary protagonist. The advertisement begins with a man's voice asking "Have you ever opened doors with the sound of your voice?" as a young white woman (hands full) enters an apartment. The ad then cuts to an image of a black woman in a wheelchair being pushed by another person through a hospital hallway, and the camera pans to a white man being asked for "her card, please." The voiceover resumes, "Carried your medical history in your wallet?" as a doctor informs the man that his "wife will be just fine." The mixed-race couple already suggested that the technologically enhanced future was one of racial equality, but as the woman is seen only briefly, her condition is unknown and may easily be read as disability. She appeared to be pregnant, given the later shot of a sonogram, but the brief glimpse of the wheelchair could equally signify disability to an audience accustomed to this association through handicapped parking emblems and similar representations. Whatever her health condition, the black woman in the wheelchair stood in for the diversity and equality of the world that would accompany new and networked technology; her simultaneous lack of agency (her husband holds her medical history card) indicated, however, that the management and use of these tools were not always at her disposal. The futurism of the scene was located in the male

partner, and the (disabled) woman was not figured as a user but as a passive beneficiary of these technologies.

An even clearer invocation of diversity through images of disability occured in MCI's 1997 "Anthem" advertisement.[67] The ad features people of a variety of races, ages, and genders promising that "People can communicate mind-to-mind. There is no race. There are no genders. There is no age." With the next statement, "There are no infirmities," the ad shows a blond teenager communicating the message through American Sign Language,[68] intercut with a computer screen displaying the words. Disability, here, was represented by Deafness, notably by a form of Deafness and Deaf culture that relied on American Sign Language, itself a highly visible and easily recognizable activity. Deafness was an easy disability to represent, but also an apt one, given the enthusiasm for the internet in many Deaf communities at the time.[69] However, like the rest of the advertisement, disability was invoked here as one of many "spectacles of difference that the narrative simultaneously attempts to erase by claiming that MCI's product will reduce the different bodies we see to 'just minds'."[70] In order to communicate the vision of a mass of people participating online without reference to the body, MCI was forced to make reference to the body, indicating diversity and magnitude through visually different forms of embodiment. This form of representation was, like the AT&T advertisement, futurist; it did not take into account the means by which the depicted individuals will have access to technology, and national, racial, gender, and financial differences in access were elided for an uplifting image.

Finally, an Apple advertisement from this era, "What Would You Do to Change the World?" offered a representation of disability that was even more removed from material questions of bodily difference and material access to technology.[71] The ad begins with three

elementary school teachers asking their class the titular question; the teachers and classes appear to be in Japan, the United Kingdom, and South Africa. The commercial shows an "internet class," presumably set in the near future, in which these students video chat with one another and share their answers. The commercial cuts between individuals and groups of students suggesting giving everyone a house, teaching people to read, or making other suggestions. Eventually, there is a shot of a young girl speaking, and signing, "I would teach everyone a new language." She reappears later, signing and saying "make peace." In this example, sign language was once again seen, and its association with Deafness, particularly Deaf language and culture, was clear. However, there was no indication that viewers were seeing Deaf people, as even the girl signing appeared to be hearing from her clear speech and desire to teach a "new" language, which positioned sign language as an addition to the spoken language already in use throughout the ad. The invisibility of a Deaf experience allowed Apple to sidestep considerations of how, exactly, a Deaf student would participate in this audiovisual internet class; the reliance on speech by others indicated that this was not an inherently accessible space, and questions of translation to sign or textual alternatives were not considered. Thus, the experiences and needs of people with disabilities were ignored, while the specter of disability was invoked through signing to signify even greater diversity than the racial, geographical, national, and gender diversity seen in the other students.

Drawing on Nakamura's examination of race in advertising, in which she argued that "the spectacles of race in these advertising images are designed to stabilize contemporary anxieties that networking technology and access to cyberspace may break down ethnic and racial differences,"[72] I suggest that all of these images of disability were presented as signs of inclusion in order to paper over the potential problems of excluding groups or individuals from access to

the internet. Where images of race counteracted claims of a race-less future, easing the minds of those who would prefer stable racial and ethnic relations, images of disability strongly suggested that the internet is a place of equality for all people, even people with disabilities, historically seen as less-than. In presenting these images, however, the realities of experiencing online technology as a person with a disability and the differences among disabilities were erased; showing such struggles and differences would only weaken the universalist message.

Advertisements, like popular fiction and news media, regularly invoked disability but rarely incorporated the experiences or perspectives of people with disabilities. Because of this, popular media largely failed to address the specific concerns and challenges faced in the articulation of disability and technology. Instead, it tended toward dystopian fiction, utopian and market-based perspectives on the internet's utility to people with disabilities, and the inclusion of images of disability as a sign of diversity, unconcerned with the experiences of exclusion faced by those it invoked. Disability and technology were largely framed as a part of the future, the end result of a significant transformation; questions of how to arrive at that future received much less attention. As loudly as many of these sites proclaimed that disability would cease to matter– either because it was "fixed," or because we left our bodies behind–visually and politically, differences of disability mattered very much. As argued by Ingunn Moser, technology can serve to normalize people with disabilities by allowing them to take up normative subjectivities, but it only does so through reproduction of divisions between the normal and deviant.[73] Cultural representations further this double-edged sword of normalization and differentiation through their production of normative technological subjectivities.

Preferred User Position

Through study of the sociohistorical context in which web accessibility emerged, it becomes

clear the degree to which society assumed the existence of a normative user of digital and

networked technologies. To begin, this normative user had full use of their senses, was wealthy

enough to afford technology, and was of average (or higher) mental capacity. Advertisements,

such as those mentioned above, targeted this normative consumer in part by showing images of

difference that a default user can access. In showing images of racial difference, disability, and

age diversity as available for the consumption of a privileged audience, these advertisements

promoted "eating the Other," or the augmentation of a dominant group through the addition of

"spicy" diversity.[74] In order to argue that technology would foster convergences in society, even

increase equality, invocations of difference were needed, but these differences were not

interrogated or integrated into the mainstream. Such representations can easily be found in

popular media, both in the 1990s and more recently (as will be discussed in Chapter 5), and they

serve to shape popular understandings of who uses technology and in what ways. In the mid-

1990s, expectations were that relatively privileged people would be using online media primarily

as consumers, seeking information and shopping, and communicators, emailing, posting on a

form, or instant messaging with others.

As briefly mentioned in Chapter 1, this kind of preferred user position is analogous to

Hall's preferred reading position. Hall positions moments of encoding and decoding as relatively

autonomous, determinate moments in the mediated communication process; messages are

semiotically assembled and made sense of in relation to dominant and alternative frameworks.[75]

Both stages draw upon and potentially reinforce naturalized codes of meaning and interpretation,

allowing for the spread and strength of hegemonic meanings and structures of power. Hall

identifies the dominant-hegemonic position as that which occurs when a viewer decodes a message in the same dominant terms with which it was constructed. This preferred reading position is one in which dominant meanings are taken up and reinforced, and this process can be so naturalized as to be invisible, granting particular dominant meanings the status of common sense inevitabilities.[76]

A preferred user position operates similarly, but at the level of the physical as well as the interpretive. In using a particular media or technology, such as the web, we must both interpretively accept the meanings of cursors, arrows, and other interface components, while also positioning our bodies to use default structures including keyboards, mice, and often vertical screens. Interfaces and hardware alike are, by and large, shaped around a set of assumptions about the bodies, capacities, and interpretive strategies of an end audience. From the analogy of the "desktop"[77] to the operation of copy-paste commands, computer and internet use is largely based around metaphors, which themselves draw upon particular Western cultural processes. By making sense of these metaphors using dominant-hegemonic frameworks, we take up positions as "users" or "spectators" understood to be active, capable individuals.[78] The design of interfaces, websites, and hardware encourage this set of meanings, as do representations and metaphors of technology as transparently aiding users in their goals. At the physical, embodied level of use, preferred user positions encourage sitting – at a desk, with a laptop – gazing at a lit screen, and using fine motor skills to type or control a mouse. Such disciplining of the body has ramifications, from the fatigue of long use[79] to the fatness, carpal tunnel, and even disabling conditions discussed and boasted about by computer programmers.[80]

Preferred user positions reflect idealized access conditions, which are normalized as defaults around which policies and technologies are regularly formed. Assumptions about users'

capabilities and access conditions undergird the very way in which web sites and services are

coded, and these decisions may easily exclude potential users who do not fit the default. These

assumptions, formed through experiences and cultural imagination, constitute a dominant

discourse that bridges the relationship of embodiment and technology. The metaphors and

options of the interface convey particular meanings and encourage particular uses. Thus,

disability and the possible inability to use default interfaces or the need for alternative interfaces

represent a fruitful area of inquiry into the atypical ways in which bodies become materially and

symbolically articulated to technology. As the conditions of access change, preferred user

positions may no longer be tenable, as accommodations, deviations, and work-arounds become

necessary. In the alternative user positions seen in the study of web accessibility, it is possible to

see challenges to the hegemony of the preferred user position, as many users with disabilities

employ alternative frameworks in interpreting and experiencing computer and internet

technology. Hegemonic understandings of the user are strong, but flexible and open to potential

challenges, particularly as these understandings may be revealed to be far less natural and

universal than their cultural strength would suggest. This flexibility, and the possibility of

negotiating a user position that incorporates dominant and other components, is always available

but rarely easy. As Celeste Condit indicates, oppositional readings of "polysemic" media texts

requires significant additional work and reduces the pleasure in those texts.[81] Similarly, attempts

to produce non-normative user positions fraught with difficulty and expense. Furthermore, as

textual interpretations are limited by production contexts and textual elements,[82] so are user

positions limited by technological affordances and the availability of needed accommodations.

While users with disabilities certainly craft user positions that differ from the preferred use

position, it must be remembered that this comes at some cost. Returning now to the

sociohistorical context under study, some challenges to the discursive assertion of a preferred

user position can be seen within the disability press throughout the 1990s.

The Disability Press

Even as mainstream representations and technological developments emerged around a preferred

user position, spectacularizing disability for an abled audience and building interfaces that

assumed particular bodily capabilities, other user positions and configurations of access began to

emerge. Inattention to the processes by which technology might transform notions and

experiences to disability in academic and popular contexts was countered by closer attention to

these questions within a disability community that was well aware of the challenges to computer

and internet use for many people with disabilities. In the 1990s, the disability press, and activist

organizations, began to formulate a counter-discourse that attended to the details of web

accessibility, the challenges of going online, and the need to move beyond a charity or consumer

model to a rights-based model regarding internet access. As in disability studies literature, the

social model of disability and civil rights arguments were dominant within the disability press.

These publications also aimed to serve their readers by providing resources and covering issues,

including technology, from a disability point of view. These sources best expressed the

advantages and drawbacks of the emergent online technologies for people with a variety of

disabilities. Though these stories incorporated disability rights movement perspectives and

included more of the accessibility policy discourse than mainstream media, a number of similar

themes persisted; optimistic (if not utopian) perspectives were highlighted alongside arguments

for accessibility and civil rights, the consumer model was invoked, and accessibility was

presented as separate from mainstream practices of web development.

Throughout the 1990s, there were several regularly published magazines that explicitly served audiences of people with disabilities. Like gay and lesbian publications,[83] these publications were (and some remain) closely tied to political movements and intended to both address political concerns and challenge dominant cultural representations. The ADA made the possibility of a strong, independent disability media seem increasingly possible, as the civil rights model grew and society at large began to face issues of disability.[84] Some of the highest-profile publications included *Ability Magazine* (1983–present), *Deaf Life* (1988–present), *The Disability Rag* (1980–2006), which has also been published as *The Disability Rag Resource* and was published online as *The Ragged Edge*, *New Mobility* (1994–present), and *WE* (1997–2000). The strength of minority media lies in its ability to provide alternatives to dominant representations of identity and difference, "to speak for oneself, to create narratives and images that counter the accepted, oppressive, or inaccurate ones,"[85] and to connect representations to political concerns. The weaknesses of a minority media model, however, are in the difficulties of sustaining these niche publications through either a for-profit subscription model or a non-profit (or donation) model; a lack of financing has spelled the end, or change, of any number of such publications.[86] Web media seems, at first glance, to offer all of the advantages of producing self-representations that challenge popular texts while cutting down on the operating costs of producing physical newsletters or magazines. Given these benefits, the internet and web accessibility would seem to have been pressing concerns to publications hoping to reach an audience of people with disabilities. But, while these publications offered a great deal of nuance in their coverage of the internet, and numerous resources for their readers, coverage of technology in general and accessibility in particular was dwarfed by attention to assisted suicide

debates, special events and celebrities, and accessibility concerns in the physical built

environment.

Often, publications turned their attention to the practicalities and individual experiences

of computer and internet use among their readers. In *Ragged Edge*, visually-impaired author

Sally Rosenthal wrote about how her "vague notion that technology could enable people with

disabilities to perform any task the rest of us could do," a sentiment in line with mainstream

utopianism, dissipated in the face of physical, technological, and bureaucratic barriers to using

her computer and speech synthesizer, and additional difficulties in beginning to use the

internet.[87] No simple narrative of progress, the nuances of technology, assistive devices, support

services, and computer accessibility were incorporated into the fabric of her narrative. *Deaf Life*

incorporated several items dealing with internet use by Deaf individuals and communities, from

a cover story on Vint and Sigrid Cerf to surveys and discussion of the effects of the Web on the

Deaf community.[88] In November 1997, as part of its monthly reader response survey, *Deaf Life*

asked how important "the Internet (WWW and E-mail)" were in the lives of readers[89]; by

December, they had received 801 responses, most by email and 94% of respondents said it was

very important.[90] This enthusiasm reflects the largely visual state of the web in the late-1990s,

which was highly accessible for many d/Deaf users, as communication conducted textually

offered a rare kind of independence in deaf-hearing interaction. The cover story "Deaf Life:

Impacts from the Internet" found similar enthusiasm, as most respondents considered the Internet

a positive force and useful information source.[91] Yet, this enthusiasm coexisted with fears that

the Internet could threaten Deaf community culture, as Deaf clubs and other forms of collective

information seeking might become unnecessary.[92] Outside of the Deaf community, Tony

Coelho's 1999 article "Work the Web," for *WE Magazine*,[93] embraced cautious utopianism

(perhaps this is better termed optimism), as "given the right equipment, all of us, no matter what our abilities, can surf the Internet to reach out to every corner of the world."[94] The rest of the article covered the features of the President's Committee on Employment of People with Disabilities, which offered government resources as well as job opening. This pragmatism, and the online provision of resources to an audience of people with disabilities, was fairly unique to the disability press in this time frame and spoke to its interest in working on behalf of its communities rather than reporting on disability for the enlightenment of a non-disabled audience, as was so often the case in the popular press.

The resistance to narratives of simple transformation, instant equality, and the transcendence of identity in the disability press speaks to the ways in which experiences of difference and access positions other than a preferred user position provide important alternative perspectives on the sociohistorical changes brought by the web. Such perspectives are necessary to gaining a full impression of the sociohistorical context, as they provide necessary correctives to widespread enthusiasm and offer a glimpse of alternative ways of being. Though the convergences of technology and disability were certainly exciting to this community, the attention to details of difference and struggles with default use positions indicate an ongoing concern about practical ways in which the technologically mediated present, and future, could be fully achieved.

Conclusion

As policies, technologies, and media converged throughout the 1980s and 1990s, representations continued to struggle with difference, particularly differences of disability, and preferred user positions emerged that did not consider bodily differences of ability. Broadly speaking, it

appears as though the dominant discourse of disability and technology was one in which internet technology was understood as transformative. Its potential transformations of society offered to increase equity, but did so through invocations of difference that upheld a normatively white, wealthy, and able user. Such a default, incorporated into the development of hardware and software interfaces, created as many problems as it solved for users with disabilities.

For people whose experiences resembled those described in the character of Michael, whose story began this chapter, the growth of the internet and web was a blessing and a curse, a cause for celebration and concern. People with disabilities often shared popular enthusiasm for these technologies, and had high hopes for their ability to ameliorate their work and social lives. However, their access conditions were often non-normative, and the development of assistive technology, browsers, and web sites themselves was often out of sync; each new browser, with its interpretation of HTML, posed a possible new challenge for his existing screenreader. While assistive technology manufacturers tried to keep up, they often remained a step behind. Individual producers of web sites were largely disconnected from the needs of those in positions other than that of the preferred user, making assistive technology even more difficult to build in a way that would allow for general online browsing. The release of the W3C's WCAG 1.0 would begin to standardize best practices for web development, but for many people with disabilities, there was no guarantee that voluntary guidelines would be sufficient to address their access concerns.

This chapter has begun to describe the cultural and historical context in which web accessibility emerged, pointing to the importance of convergences of media, technology, policy, and disability as well as the persistent invocation of disability as difference in order to shore up a preferred user position of normative internet use. In focusing largely on policies and popular

culture, this is necessarily a partial context; subsequent chapters will offer additional background

information as needed, returning to a full consideration of popular context as it moves into the

early 2000s in Chapter 5. By providing this initial context, my hope is that subsequent chapters

are better contextualized, making the struggles that characterized the development and

implementation of web accessibility more understandable, relatable, and clearly tied to their

times. Recalling the model proposed in the previous chapter, sociohistorical context was

theorized as a field in which the other sites of access analysis are located, exerting shaping forces

upon each site and their articulations to one another. Shining a light onto that field, and allowing

it to preface examination of each site as we move through the history of web accessibility,

provides a frame through which to interpret subsequent chapters. In the next chapter, the history

of web accessibility begins in earnest, through the development of WCAG 1.0 and Section 508

standards. Both processes attempted to govern the form of web content in the interest of

accessibility, but this goal was more easily stated than accomplished.

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Chapter 3

Web Accessibility 1.0: Forming Policies of Form

Stan is a white man in his late 50s, living in the Northeast part of the United States. He has

cerebral palsy with severe mobility impairments and uses a motorized wheelchair to get around.

As a result, Stan relies upon Medicaid-provided aides to help him with the necessities of daily

life. He is on disability insurance, and does not have a formal job. Stan blogs occasionally about

his life and political issues related to disability. He finds that aides are sometimes frustrated with

the time it takes him to blog, with their help, so he often asks friends and family to help with

internet use as well.

Stan relies upon assistive technologies to use the computer. He has limited mobility, which

extends to his finger dexterity, but has good speaking abilities, so he uses a tetra mouse (which is

hands-free) and voice recognition software, both of which were large expenses for him. In fact,

his assistive technology is rarely fully up to date, as he purchases when he can, or relies upon

government services to help cut the costs of these technologies. However, the cost is well worth

it to Stan, as assistive technologies grant him a degree of autonomy, reducing his need to ask

aides, friends, or family to help him find or produce online content.

For Stan, it is crucial that online media be interoperable with the assistive devices that he uses to

operate his computer. Because of the expense and the learning curve involved with assistive

technologies, Stan prefers not to change his assistive technology more than necessary. However,

given the rapid evolutions of the web, sometimes he will find sites with code that is not

compatible with his chosen assistive devices, effectively excluding him from whatever content was available there.

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In the flurry of computer engineering, code, Web development, standardization, and commercialization that characterized the 1990s, the need for accessibility for people with disabilities grew. While the Web enticed legions of mainstream users in the 1990s, it also created new challenges for users with disabilities. The text-based interfaces of the early internet were largely accessible with assistive computer technologies, but images, multimedia content and hyperlinks were new challenges for many users with disabilities. Former National Federation of the Blind director of technology Curtis Chong recalled that in the 1990s, "I was beginning to realize that technological changes were happening in the mainstream world which were beginning to hurt us as blind people, in particular. Things like touchscreens, things like smarter and smarter devices in the home and in the office, which you couldn't memorize a sequence of buttons to make them work."[1] Tim Berners-Lee was also well aware of these challenges, and pushed for greater inclusion and flexibility of the Web, calling for it to "allow equal access to those in different economic and political situations; those who have physical or cognitive disabilities; those of different cultures; and those who use different languages that read in different directions across a page."[2] Two questions quickly became central to making the web accessible for people with disabilities: how could HTML code be written to increase accessibility, and how could those best practices be communicated and encouraged? Neither question could be easily answered, and debates on these points shaped the development of both W3C guidelines and legal standards for accessibility at the end of the twentieth century.

Accessibility policies attempted to govern the *form* of online content by making it compatible with assistive technologies and otherwise more usable by people with a range of disabilities. The intention of accessibility policy was never to change the informational, entertainment, or retail content of the web, but to change the code that produced that content in order to make it available in a form that could be adapted to meet the needs of users outside of preferred use positions. For instance, the final guidelines released by the W3C in 1999 included, as Guideline 3, a provision recommending that developers "use markup and style sheets and do so properly."[3] This measure promoted the use of W3C code specifications, including Cascading Style Sheets (CSS), to control the appearance of layout and text styles. This constituted a recommendation at the level of form, suggesting that the methods of producing a particular effect be changed, but not directly rejecting the effect. So, markup language could be used to define a large, serif, green font, rather than using an image to convey those design choices. Such formal recommendations separated form and content in order to make content transformable and thus potentially more accessible to people using non-standard technologies or means of accessing online content. For people like Stan, described above, the form of web content would have been of great importance; formal code components had to be interoperable with assistive technologies in order for him to use computer and internet technologies autonomously. The publication of guidelines, or legal standards, that would encourage such formal compatibility seemed like a necessary first step in making the web accessible to people with disabilities.

The guideline discussed above is deceptively simple; the process by which WCAG 1.0 and other policies were formed was an ongoing negotiation of the needs of end users and the desires of a range of other stakeholders, including industry, government, disability advocates, and researchers. Although the goal was to "do the right thing," there was rarely agreement about

the best ways to move forward with recommendations at the level or form, or with communicating policies to a broader public. Standards of all types are compromises, almost always preceded by conflict or disagreement among interested parties,[4] and web accessibility policies were no different. Both policy processes struggled to define their terminology, address key audiences, and make policies that could be broadly implemented in order to transform the form of web sites and services. Additionally, both processes were closely related to other policies, including W3C guidelines for assistive technology or browsers, and federal government procurement regulations. Despite this project's focus on web accessibility guidelines, they did not operate entirely autonomously or in a vacuum, but in conjunction with other, equally complex, policies.

This chapter traces the first stage of development in web accessibility policy in the United States, looking to the processes by which WCAG 1.0 and the first iteration of Section 508 standards were developed. Methodologically, this chapter is based upon close readings of final guidelines and standards, and archival research. These traces were augmented with interviews conducted with several individuals involved in one, or both, of these policies. These interviews were open-ended, producing virtual oral histories of policymakers' experiences with accessibility and the policymaking process.[5] Adopting a social shaping of technology perspective, and applying it to the policymaking process, allows for this history to be analyzed in terms of its constitutive tensions and its embeddedness in a particular context. Although this chapter focuses on the level of form, it articulates attempts to govern the form of online content to the preceding sociohistorical context and the unique contextual environment of web accessibility in the 1990s. Following a brief methodological interlude, this chapter examines WCAG 1.0 and Section 508 in

turn, highlighting persistent tensions about technology, audience, and the need to create usable rules for accessibility in order to foster implementation.

Methods in the Study of Policy History

In conducting historical policy research, I adopt a social shaping of technology (SST) approach, treating policy itself as a technology of power that creates particular forms of institutions, artifacts, and behavior. A social shaping of technology approach treats society and technology as mutually influential; the strictures of a given society may shape the forms of technological innovation that emerge from it, and the society's needs, desires, and uses may reciprocally shape the way a given technology is understood and taken up. It repudiates technologically determinist accounts that position technology as an independent, pure, autonomous and uniquely influential force on society. Yet, SST acknowledges that the affordances of technologies may, indeed, produce particular effects. This differentiates SST from a social construction of technology approach,[6] in which the weight of causality is almost totally shifted to the vagaries of society. Such an emphasis on social construction of meaning and value in this strain of scholarship indicates a troubling dematerialization of technology, and of the embodied experiences of society's members. Though social forces certainly contribute to the forms of technology that are developed, and influence their subsequent cultural meanings, this can be true only to a point. Technological artifacts, themselves, have specific characteristics as well as preferred and impossible uses, which place limits upon the social uses and interpretations of those technologies. Much as the social model of disability reaches its limits in discussion of bodily pain, which is not caused by society but does affect the individual's abilities,[7] SCOT reaches its limits when we address technology's material elements. The redesign of material artifacts and

the reconceptualization of their expected users can thus have significant effects in extending use by individuals of different sexes, ages, and ability statuses.[8]

Given the inattention of SCOT to the materiality of technology, SSTs' emphasis on a mutually-influential relationship between technology and society offers an appealing removal of determinist overtones. SST asks how a given technology is shaped by other technology, by science, by the economy, and by a range of other factors.[9] A given technology, therefore, is treated as, in part, a social construction–but one that carries with it certain affordances, or "perceived and actual properties […] that determine just how the thing could possibly be used."[10] These affordances, and constraints whereby certain uses are rendered impossibilities, direct and limit the eventual social integration and cultural meanings of a given technology. SST allows for a nuanced consideration of how technology can be political, capable of driving particular forms of use, including or excluding various segments of society, and shaping further technological development in specific directions. Importantly, these political consequences are not exclusively tied to intentionality on the part of groups or individuals, but are often simply the result of neglect. For instance, the inaccessibility of the built environment for people with disabilities as an example of how this benign neglect can have the political consequence of excluding people with disabilities from public life.[11]

Though I adopt an SST model, this chapter does not trace the history of the internet as an individual technology. Rather, I look to a specific history of internet policy as it relates to disability, hoping to unearth a sublimated history of this technology and its relationship to society. Thus, I attempt to apply SST to the study of policy as a technology of power. Policy, like technology itself, exists within a social, cultural, and political matrix that shapes its development and eventual uses and meanings. If, as MacKenzie and Wajcman declare, "we live our lives in a

world of things that people have made,"[12] we equally live those lives, and experience those

technologies, through the policies made by a range of individual, fallible, and occasionally

inspired people. Just as technological artifacts have politics, or "arrangements of power and

authority in human associations,"[13] and computer software in particular may impose those

political arrangements on individuals,[14] so the very processes of policy development that shape

and constrain technology and society's uses of that technology are political engagements with

various concepts, ideologies, and forms of governance. Though policy may seem to lack the

materiality of a computer, or even a piece of software, it produces material effects: at the level of

its implementation in physical objects; by its enforcement through the legal system; and in its

indirect shaping of individuals' embodied experiences.

I examine accessibility policy through two key methods, archival research and oral

history interviews, to study both official legal policies set by Section 508 and the World Wide

Web Consortium's (W3C) Web Content Accessibility Guidelines (WCAG), which are guidelines

that represent a set of industry best practices. I draw upon Thomas Streeter's work on the

"imaginative dimension" of official law or policy,[15] which allows insight into how particular

ideologies and technologies are legislated into being. Streeter further advocates textual analysis

of law itself as a representation, a socially-influenced artifact that can be analyzed for its

undertones, implications, and discursive content.[16] I employ this view of policy, and

policymaking, here. This chapter does not offer a play by play of the history of accessibility

policies in the United States, but focuses on several themes which were central to the

policymaking processes. Thematic and discursive analysis, rather than chronological

information, highlights the ways in which policy evolved, its advantages, disadvantages, and

limitations. Much of this analysis is made possible through close readings of primary texts.

These archival sources included: emails, phone call minutes, and in-person minutes of the Web

Accessibility Initiative Guidelines Working Group (WAI GL WG), available through the W3C

website; the *Federal Register*; draft guidelines and standards documents; documentation on the

Trace R & D Center from the University of Wisconsin-Madison Archives; and materials shared

by interviewees, including personal emails, several versions of the Trace Unified Guidelines, and

copies of public comments received on the Section 508 standards Notice of Proposed

Rulemaking in 2000.

In doing this archival work, I draw on the methods of software studies, which calls for

examination of the structures of computing and code[17] and which Matthew Kirschenbaum

suggests is an archival new media project in which we create "documentary methods of

recognizing and recovering digital histories."[18] I suggest moving yet a layer deeper in our

research into new media technologies – beyond content, beyond structure, beyond code, to the

policies and community standards that influence code's development and the social factors that

may influence those policies. This is particularly important given the ephemerality of many web

artifacts, which have disappeared from the internet over the past twenty years. Where Ankerson

suggests recuperating these artifacts through trade press, software packages, and industrial

developments,[19] I turn to policy in order to understand the accessibility environment of the early

web. Like Ankerson and Kirschenbaum, I embrace oral histories as a means of accessing the

ephemeral elements of this history, and interviews with several policymakers are used in this

chapter to illustrate the central themes and tensions present in the development of web

accessibility guidelines and standards.

The remainder of this chapter is divided between the WCAG 1.0 process and the

development of Section 508 standards. Following analysis of each process, the conclusion

addresses some shared concerns in early accessibility policy. Most crucially, these processes

reveal that accessibility policies were limited by their broad audience, and the need to produce

rules that could be applied by diffuse developers. As a result, these attempts to govern the form

of web content were unable to address the wide diversity of individual needs and circumstances

that affect access. While transformations of form were certainly crucial to extending access, the

complexity of accessibility meant that such changes were not sufficient to guarantee access for

any individual, let alone for everyone.

W3C and the Web Content Accessibility Guidelines 1.0 (1999)

The beginning of web accessibility policy might be dated to April, 1997, when the W3C

announced the Web Accessibility Initiative (WAI). Endorsed by member organizations, as well

as The White House under President Bill Clinton, the WAI was "to promote and achieve Web

functionality for people with disabilities."[20] Initial projects were to include developing protocols

and data formats to make the Web itself more accessible, including adding video and captioning

elements.[21] In August 1997, various working groups within WAI were chartered, including the

WAI/IPO Markup Guidelines Working Group (GL) that would "produce the official WAI

markup (HTML/CSS/XML) guidelines documents to be used by Web authors and tools

providers alike, to make their sites and products more accessible using the W3C recommended

markup formats."[22] In beginning its authoring of recommendations, the WAI GL turned to work

that had already begun on how to code for web accessibility, namely, the guideline documents

maintained by the Trace Research and Development Center.

The Trace R&D Center, at the University of Wisconsin-Madison, emerged in 1971 as a

student initiative and developed into a research program led by Dr. Gregg Vanderheiden.[23] In its

work, the Trace Center focused "on making off the shelf technologies and systems like computers, the Internet, and information kiosks more accessible for everyone through the process known as universal, or accessible design."[24] As defined in a 1994 National Information Infrastructure white paper, "Universal Design calls for the development of information systems flexible enough to accommodate the needs of the broadest range of users of computers and telecommunications equipment, regardless of age or disability."[25] This perspective is clearly visible in the work coming out of Trace, as in documents recommending possible solutions for increasing computer accessibility that include sections on the "impact on mass market," demonstrating how these changes might also improve usability for a non-disabled audience.[26] Neither the Trace Center nor advocates of universal design more broadly expected utopian outcomes in which one computer could meet all users' needs, but emphasized the importance of designing flexible features and machines that could be used with specialized assistive technology.

On January 31, 1995, Trace released its first set of web accessibility standards, titled "Design of HTML (Mosaic) Pages to Increase Their Accessibility to Users with Disabilities Strategies for Today and Tomorrow." In the introduction, it explained the perceived need for such standards: "There are some features of the World Wide Web (WWW) which are not currently accessible to people with some disabilities using today's browsers (such as Mosaic). In addition, many of the data formats currently do not support accessibility annotations (captions, vocal and text annotations, etc.)."[27] Along with refining its own set of best practices, developed through tests using the JAWS screenreader, the Trace Center began to collect web accessibility standards being developed and circulated in various academic, governmental, and professional circles at this time. The Center began to merge these documents into the "Unified Guidelines,"

reviewing existing documents and compiling them into the best possible document. Once the

Trace Universal Guidelines were being regularly updated, merging the best of the available web

content guidelines, many groups joined in Trace's effort, ceasing their own guideline

maintenance.[28]

The "Unified Guidelines" were explicitly focused on "the source material," or the code

and form of HTML pages themselves, rather than on accessibility issues involved with the

server, the viewer, or "the pipeline" (web browser) ("Unified Guidelines"). This document was

updated and refined over several years, and version 8.0, released in October 1997, was adopted

as the starting point for the W3C's web content accessibility guidelines. The Trace Center then

ceased work on its own web accessibility guidelines, but Vanderheiden was invited to co-chair

the working group, Wendy Chisholm became an editor for WCAG based on her experience with

Trace's guidelines, and WCAG WG activities began in earnest in fall of 1997.

The Process of Developing WCAG 1.0 (1999)

The process by which WCAG 1.0 was developed was both complex and transparent, involving a

range of perspectives in an extensive amount of debate and revision. The GL WG set up a system

of conference calls and an email listserv as normal methods of communication within the group,

allowing for ongoing communication. Members of the working group included Chuck

Letourneau, a former Canadian government official, co-chairing with Vanderheiden,

representatives of industry, such as David Bolnick from Microsoft and Leonard Kasday of

AT&T, as well as academics, representatives of accessibility organizations, like Mike Paciello,

and members of disability advocacy groups. Several group members were themselves users with

disabilities. Communication was nearly constant between 1997 and the release of the Web

Content Accessibility Guidelines 1.0 (WCAG 1.0) in 1999. In addition to email and teleconferences, the working group also met at several World Wide Web conferences during this period. The archives of these meetings, teleconferences, and some emails are archived at the W3C's website, available as part of the intentionally open process of Web standards development, resulting in a weighty corpus of detailed information, debate, and development. Four issues, however, are particularly salient to understanding the development of WCAG 1.0 as a set of rules designed to change the form of web content: the establishment of "guidelines" at varied levels of "priority," rather than legally binding standards; debate over accessibility as similar to and distinct from device independence or universal design, and; uncertainties about target audiences.

In establishing the web content accessibility documents, the GL WG first had to determine the most accurate nomenclature for their recommendations, which would lack the weight of enforcement, but were designed to be widely implemented as a set of industrial best practices. Given the lack of enforceability, and the intention that these recommended policies would evolve over time, the group settled on calling the central document a set of "guidelines." The group's consensus was that the criteria in the documents do not guarantee access for everyone, or have an enforcement mechanism (which a "standard" or "specification" might imply), though they were normative statements.[29] "Guideline" also nicely maintained the importance of human judgment and changing methods of achieving accessibility.[30] Prioritization was equally difficult; were some guidelines more crucial than others? The very idea of prioritization met with resistance, as it implied less than ideal accessibility practices, but prioritization simultaneously offered to increase the practicality of the guidelines for developers. Initially, drafts listed some criteria as "required" and others as "recommended," which was

replaced by a prioritization scheme in which the checkpoints for each guideline in WCAG would

be assigned a priority level 1-3, with 1 being the highest priority. This prioritization of guidelines

was done with the end user in mind, as a nod toward making the guidelines more usable.[31] In

short order, however, priorities were dropped from the guidelines and moved to the checkpoints

included in techniques documents, which acted as a reference on the means by which to meet the

broader guidelines.[32] This prioritization scheme was based on anticipated impact, with those

checkpoints that would do the most to increase accessibility for the most people given priority 1,

and modeled on approaches being used in telecommunications standardization.[33] These priority

levels could then be used by sites claiming conformance with WCAG 1.0, as "This [document or

process name] conforms to all priority level ['one'; or 'one and two'; or 'one, two and three']

checkpoints of the W3C Web Content Accessibility Guidelines."[34] These levels of conformance

with prioritized checkpoints were recast as A, Double-A, and Triple-A in later releases.

Despite the insistence that guidelines were voluntary standards, and were not binding, the

process of their development indicated a concern with the potential relationship between WCAG

1.0 and legal frameworks. At times, the WG considered the legality of their own guidelines,

particularly in relation to the copyright implications of accessibility guidelines that would

necessitate making an additional copy or version of existing content.[35] More commonly, they

considered the opinions of national governments (particularly the U.S., Canada, and Australia)

that might be looking to the W3C for guidance in legislating their own web accessibility

requirements. Many discussions involved explicitly limiting the GL WG's involvement in legal

requirements, as in Charles McCathieNevile's statement that "if we say the guidelines shouldn't

be used to determine the legal accessibility of a site, that would be a good thing."[36] Similarly, the

group acknowledged that although the Canadian government and US Department of Justice

might use the guidelines and priority levels to demarcate legal compliance, a distinction should be maintained between "the level of compliance with respect to a particular law, and what constitutes compliance with the guidelines."[37] The variation of standards and anti-discrimination laws regarding disability required that, as international professional and voluntary policy, the WCAG 1.0 remain separate from any set of legal codes. This variation also meant that, at times, the WG was establishing guidelines that exceeded national legal requirements; when asked if a captioning and video description policy that was higher than U.S. government requirements was reasonable, Judy Brewer responded "this is w3c/wai,"[38] implying that a higher standard was not only acceptable but, perhaps, expected outside of official policy realms.

This framework is undeniably complicated, and reveals the resistance to dictating the form of web content within WAI and the W3C at large. The web was understood in these circles as a technology that encouraged innovation from the edges, rather than through a central dictate. Therefore, accessibility guidelines attempted not to mandate form, but to provide recommendations and tools with which to achieve forms that were usable by people with a range of disabilities. While on one hand this enabled ongoing innovation, it also prompted significant confusion, as many developers desired simple directives. The supplementary documents provided some of these directives, using concrete examples, but the perception of complexity hovered around accessibility.

One strategy which was used to encourage the adoption of accessible practices was to tie them to ideas of universal design. As discussed in relation to Trace's work above, universal design functioned as a theory of design whereby design would allow for use by many different people in different circumstances, improving accessibility for people with disabilities as well as improving usability for general audiences. The WG eschewed using universal design

terminology explicitly, but decided to invoke universal access and device independence as secondary arguments that could strengthen the document. This is seen in the final WCAG 1.0 guidelines, where their status as an official W3C recommendation is justified as "enhancing the functionality and universality of the Web."[39] Thus, disability, and accessibility, were the priorities in terms of framing the guidelines, but were not the only perspectives included. Usability, access, universal design, and user-centered design were all negotiated throughout the development process.[40] For instance, the work of Jakob Nielsen and others on usability was invoked as a source for determining how to organize information to be understandable by most people.[41] Thus, a wealth of design literature, best practices, and alternative perspectives on making the web more inclusive were consulted and, to some degree, incorporated. This incorporation most often entailed spelling out specific recommendations, rather than making broad judgments. When the animated gif files that might cause seizures among those with photosensitive epilepsy were dismissed as "bad design," McCathieNevile countered "but people are going to design badly,"[42] implying that the W3C accessibility guidelines had to be held to a higher standard than general design and development advice. In writing the guidelines and associated documents, the WG could not rely on any sort of best practices of solving accessibility problems; recommendations were spelled out, and accessibility highlighted as the goal, rather than using more wholistic approaches to web design and development. For instance, code validity (code written in accordance with W3C specifications) was not required in accessibility guidelines, but was frequently discussed as a possible requirement, best practice, or foundation from which accessible development should begin. Code validity itself was eagerly embraced by a core of "standardistas," elite web developers who attempted to adhere to web standards in order to build the best web, but was not practiced widely among other developers.

While main W3C standards would nod towards accessibility in making code recommendations, accessibility guidelines avoided reciprocal reliance, in part because of awareness that these guidelines could be taken up by laws. Validity was not required in WCAG 1.0, but use of W3C technologies and other guidelines was encouraged by Guideline 11 as a means of easing accessible development. In considering standards-savvy developers as well as the countless amateurs, corporate web staff, and others producing web content, the WG encountered its fourth challenge–determining and addressing its audience.

A final thematic concern in the development of WCAG 1.0 was the difficulty of pinpointing the intended audience for the guidelines and techniques. In an email from quite early in the processes, Chetz Colwell noted that the document included sections addressing browsers, tools, and users in addition to "page authors," whom he felt should be the clear and primary audience for the markup guidelines.[43] Of course, the web content guidelines did feature quite a bit of overlap with the concerns of those writing WAI guidelines for "User Agents" (browsers) and other devices, but increasingly the GL WG seemed to assume a technically savvy audience of web developers as their main constituency. For instance, in a December 1998 meeting, the question of whether techniques would need an expiration date due to anticipated changes in technical capabilities was glossed over because "in cases where techniques can expire, language is clear about when […] Based on expected audience."[44] At a later point, it was even suggested that the main audience was not persons with disabilities, implying that web accessibility documentation was aimed at developers who would (or would not) take it up on their behalf.[45]

Though others disagreed with this sentiment, there was ongoing confusion over how to address the readers of the guidelines, techniques and understanding documents. And as noted

earlier, it was felt that the guidelines would also be used in policy work, which would involve non-technical audiences. Gregg Vanderheiden recalls,

> One of the problems we had is the – the fact that there's such a diverse audience. We actually have policy makers who want to make policy about this [web accessibility], but won't have a technical background and aren't going to make a web page themselves, but they are worried about social justice. We have individuals who, with disabilities, who aren't going to use it [the guidelines document itself] but want to understand what it does or doesn't do to help them. We have people who are creating web pages, and they want to know what is it that they have to do, and how on earth do you go about doing that? And hence, what we tried to do was to [write the guidelines] in a number of layers.[46]

Thus, the concerns over audience spilled back into the structure of the guidelines and priorities, and vice versa.

They also spilled over into the user testing that was done, not only to see how the proposed guidelines would affect accessibility, but to see how various page authors were able to interpret and implement the proposed documents. Both novice web authors and more experienced authors were consulted, given three websites per group and asked to evaluate them.[47] Though most guidelines were largely understood, novices became confused about detailed HTML information, and the more advanced authors "would like examples, especially across a variety of browsers. They needed more information as to why accessibility is important."[48] It seems that this draft was unsatisfying across a range of user expertise, as well as in relation to browsers, which in some cases didn't support the accessibility features incorporated by the testers.[49] Later requests for testing and feedback aimed to find people in the community, with or without disabilities, to look over the guidelines and ensure that nothing had been

forgotten. The diversity of those consulted indicates a robust effort to improve the guidelines, but also to gather information about any lack of clarity about the levels of detail, emphases, and needs of a potentially broad audience.

The final guidelines were released on May 5, 1999. The guidelines document, frozen on release, laid out the principles and overarching goals of increasing web content accessibility by means of attention to specific elements of HTML, CSS, and scripting languages. WCAG 1.0 was published along with a Techniques document.   The WCAG guidelines were normative and fixed. The accompanying Techniques document was published as a non-normative "notes" so that they could be updated over time. The combination of documents aims to provide a basic theoretical approach to web content accessibility in the guidelines, while allowing for flexibility and specificity in the other, "living" techniques document.

The release of WCAG 1.0 was a form of policy native to the web, developed through the W3C in an open process and recommended as a set of voluntary best practices in web development and related fields such as browser development. In fact, it could be considered an illustration of Janet Abbate's argument that the Internet's success stemmed from the combination of its "decentralized authority, its inclusive process for developing technical standards, and its tradition of user activism."[50] Yet, as policy without the force of law, or even the authority for enforcement, WCAG 1.0 relied upon the diffuse community of web developers, companies, and individuals adopting these guidelines and implementing the practices laid out in the techniques document. In a very real sense, this policy would not exist without its implementation, of which there was no guarantee. Despite the disadvantages that came from a lack of enforceability, WCAG 1.0 had the advantage of being able to use flexible language to address difficult situations, as in the case of weeks of discussion about cognitive disabilities. Ultimately, the GL

WG settled on a guideline that asked developers to use the simplest possible language in the interest of accommodating people with cognitive disabilities, realizing it would never be perfect for everyone.[51] Such flexibility, of course, could not be upheld in the realm of official policy written and enforced by the U.S. government.

The Federal Government and Section 508

In fact, the federal government in the mid- to late-1990s was recalibrating both its frameworks for regulating telecommunications and protecting the civil rights of Americans with disabilities, both of which would affect the regulation of the formal accessibility of web content. First, the Telecommunications Act of 1996 continued the processes of media and telecommunication deregulation, and continued the work of the ADA in blending issues of disability and technology. Media, telecommunications, and computer networks were moving towards one another at this point in history, and policy took steps in the same direction. While common carriage may have become less salient, discussions of access and the Digital Divide were increasing in this timeframe. Thomas Streeter describes 1990s activism in telecommunications as increasingly relying on discourses of access, which "may well serve as a compelling tool for carving out open spaces in the ongoing transition to more computer-based forms of electronic media."[52] This shift coincided with the recent recognition of people with disabilities as a minority group and the implementation of the ADA, prompting the Telecommunications Act of 1996 to expand upon the ways in which the ADA had amended the Communication Act of 1934. For instance, where the ADA had introduced limited captioning requirements, the Telecommunications Act of 1996 stated that 95% of new programming carry captions by 2006, and was later amended to require 100% of new material to carry captioning by 2006. Additionally, Section 255 of the

Telecommunications Act pushed for the inclusion of accessible features in telecommunication and mass media devices and services. This required manufacturers and service providers to ensure that equipment and services were accessible to people with disabilities whenever it is "readily achievable."[53]

Shortly after the passage of the Telecommunications Act of 1996, bills were introduced in the House and Senate to amend Section 508 of the Rehabilitation Act of 1973, first added in 1986, in order to clarify its provisions and arrange for the creation of rules through which the accessibility of electronic and information technology could be assessed and compliance could be enforced. Section 508 as amended in 1986 had not been widely enforced, and was not creating the opportunities in federal employment and services that might have been intended. Susan Brummel, of the GSA's Center on Information Technology Accessibility, which was attempting to work within Section 508 on behalf of federal employees, was a "champion" for individuals with disabilities and her enthusiasm and work with Representative Anna Eshoo (D-CA) led to attempts to rewrite 508.[54] On April 9, 1997 (just days after the establishment of WAI), Eshoo and seven co-sponsors introduced the Federal Electronic and Information Technology Accessibility Compliance Act in the House of Representatives. Similar legislation was introduced in both chambers in 1998, with Senators Dodd (D-CT) and Harkin (D-IA) sponsoring.

Though Section 508 dealt with disability in the context of civil rights protections, it targeted federal agencies and employment concerns rather than a broad public, and it left issues of personal technology use relatively untouched. Interestingly, in the report from the Senate Committee on Labor and Human Resources, which recommended passage of the bill, the need for enhancing accessibility of computers and information technology was framed, in part, in

reference to consumer choice. Judith Heumann, Assistant Secretary of Education in the Office of Special Education and Rehabilitative Services, testified that "we must continue to reach toward the ideal of guaranteeing that people with disabilities are active participants in the rehabilitation process [and that] consumers have the right to choose in regard to the selection of their employment goal, the services needed to reach their goal."[55] Here, even employment is addressed as an issue of consumerism and choice, rather than as a straightforward civil rights issue. Choice, however, was largely limited to the employment opportunities and services offered by a range of federal government agencies. Section 508 was largely about increasing the employment opportunities of people with disabilities and ensuring access by the public to government information, especially websites. This would drive a focus on a limited government audience and legal enforceability in the ensuing process of writing the standards by which the revised version of Section 508 would be implemented. As stated by Doug Wakefield, who oversaw the development of the standards, thanks to these amendments accessibility had "been established now in the federal sector as a civil right with legal consequences"[56]; however, web accessibility was not firmly established as a civil right outside of those contexts.

Language from the 1997 and 1998 bills was incorporated into the Workforce Investment Act of 1998, which passed and effectively rewrote Section 508. In its amended version, Section 508 established "that the software applications, operating systems, Web-based information and and applications, telecommunications products, video and multimedia products, self-contained or closed products, desktop computers, and portable computers of the government and organizations receiving federal funding must be accessible to individuals with disabilities."[57] It required that disabled employees and members of the public seeking federal services "have access to and use of information and data that is comparable to the access to and use of the

information and data" by peers who do not have disabilities."[58] This measure attempts to regulate

the means of access in order to facilitate use by people who do not occupy preferred use

positions; when applied to web content, specifically, this entailed a regulation of formal

components quite similar to that seen in WCAG 1.0. After establishing these goals, Congress

established an enforcement plan by which the Federal Acquisition Regulations Council, the

Office of Management and Budget, and the Architectural and Transportation Barriers

Compliance Board (often referred to as the Access Board), among other federal agencies, would

write policies and directives that incorporated 508's mandates. The Access Board was

responsible for defining "electronic and information technology" and establishing "the technical

and functional performance criteria necessary to implement the requirements."[59]

In order to write standards to implement 508, the Access Board assembled the Electronic

and Information Technology Access Advisory Committee. Doug Wakefield, formerly of COCA

and the Center for IT Accessibility, was brought in as a Designated Federal Official on the

committee.[60] Applications to serve on the committee were solicited via a note in the Federal

Register in fall 1998, in order to assist the Board in meeting its obligations to consult with and

serve federal agencies in the implementation of Section 508. The committee, and Access Board,

anticipated looking to the standards already written for implementation of section 255 of the

Telecommunications Act of 1996, those written in relation to the ADA, the guidelines for

accessible hardware and software developed by the GSA and the Department of Education, and

accessible Web guidelines that had been "created by several entities," presumably including the

then in-progress WCAG 1.0.[61] Ultimately, participants on the Advisory Committee included a

wide range of people including Vanderheiden, WAI representative Judy Brewer, Bolnick again

representing Microsoft, a representative from the Information Technology Industry Council,

representatives of several other major technology corporations and associations, representatives from numerous advocacy groups, and federal employees.

The Process of Developing Section 508 Standards (2001)

The EITAC was expected to produce a set of recommendations within six months of its first meeting, which when then be open for public comment, committee revisions, and eventual release. The Advisory Committee released its first recommendations in a report in May 1999. The report acknowledged the "rapid convergence of these traditionally telecommunications technologies with new and advanced electronic and information technologies" going on at the time, and emphasized the importance of allowing individuals with disabilities to access these technologies.[62] As in the process of writing WCAG 1.0, a number of recurrent issues emerged in the process of developing Section 508 standards, including an emphasis on producing enforceable legal standards, articulating differences between 508 and WCAG 1.0, and once again, the idea of usability, and the question of audience.

Turning first to the concern with the enforceability of Section 508, it was clear that in a context in which federal agencies would be liable to lawsuits for failure to comply, standards for web accessibility needed to be made as clear as possible both to implement and to interpret while being written in regulatory language. As in the guidelines for industry implementation of Section 255 of the Telecommunications Act of 1996, these standards had to "be specific enough that one can determine when they have been followed."[63] Though the Telecommunications Act attempted to direct industrial development of technology and Section 508 aimed at regulating government purchasing, web content, and employment accommodations, the need for certainty was equal. Thus, despite pressure to adopt WCAG 1.0, given its finalized status in 1999 and the White

House involvement in its launch, the EITAC worked toward producing original standards–not guidelines–that could be legally enforced.[64] As casually defined by Wakefield in an interview with an accessibility advocacy group called EASI, "guidelines you do not have to do, standards you do have to."[65] Therefore, the major concern with WCAG 1.0 guidelines was their reliance on subjective determinations,[66] as in a guideline that stated that color contrast should be "sufficient." In order to ensure enforceability, Wakefield recalled relying on existing laws regarding disability, accommodations, and physical accessibility whenever possible; on the question of retrofitting inaccessible websites, for instance, it was decided to follow the ADA, which required accessibility to be included whenever other major changes were made to an existing building.[67]

The need for legal enforceability resulted in explicit negotiation of the relationship between 508 and the WCAG 1.0 guidelines. Following EITAC's report, the Access Board internally worked from recommendations to produce a set of standards that addressed accessibility in terms of procurement, web materials, and other technologies used within the federal government. The standards were opened to public comment on March 31, 2000. Over 100 comments were received, from private citizens as well as government officials, academics, and industry and non-profit organizations. Many comments came from people or organization who had been part of EITAC, expressing often very detailed criticism of the standards and making recommendations. The relationship between the proposed standards and WCAG 1.0 was contested, as some comments expressed disappointment that they were not more closely aligned and called for greater harmonization.

Although the 508 drew most of its web provisions from WCAG1.0 priority 1 provisions (reworded to make them more regulatory in tone) it also dropped some and added other

provisions. In the section of the final 508 standards relating to "Web-based intranet and internet information and applications,"[68] many elements of WCAG 1.0 can be seen, but the organization and priority structure changed drastically. The standards featured a simple list of sixteen requirements that must be met in order to be in accordance with the law. In a chart, the first eleven elements are listed with their corresponding Priority 1 guideline in WCAG 1.0. The remaining five standards in 508 deviate sufficiently from WCAG 1.0 to require special attention, as pages that meet those guidelines might still not live up to federal requirements.[69] There are secondary documents, including brochures, FAQs, and explanatory summaries, but these standards do not provide the detailed examples and instructions for implementation provided by WCAG 1.0. Instead, the Access Board was charged with providing guidance on whether and how a covered entity could meet these requirements,[70] achieved through the provision of online resources and education of 508 coordinators at federal agencies.

As in the case of WCAG 1.0, Section 508 standards attempted to regulate the form of web materials in order to make them more accessible. Unlike the GL WG, however, the Access Board was not free to invoke issues of subjective judgment, which characterize many guidelines aimed at ameliorating cognitive disabilities, in particular. As Vanderheiden wrote in the Trace Center's comment on proposed 508 standards, making standards is "even harder when you actually try to sit down and figure out how to create a set of rules that will be effective today, make sense tomorrow and be applied across a very wide and continually changing range of technologies."[71] As a result, 508 standards attempted to be less technologically specific than WCAG 1.0 had been. Bruce Bailey, then of the Department of Education, recalled that he favored the WCAG 1.0 recommendation that pages work without Javascript, and "it's only 10 years later that I've realized that 508 not having that restriction was correct […] I really thought

the Feds had missed the boat on that one. And it's good that they weren't that restrictive,"[72]

because Javascript later incorporated accessibility features. In designing legally enforceable

standards, the Access Board had to consider not just current technologies, but how those might

develop and how enforcing poorly-written standards might, in fact, hinder later progress on

accessible web technologies.

The need for clear, enforceable standards that could withstand technological changes over

time resulted in more resistance to notions of universal design and usability as related to

accessibility. Just as these standards could not rely upon subjective judgment, they could not

freely invoke goals other than accessibility, as those could be seen as outside the mandate given

by Congress' passage of the Workforce Investment Act of 1998. The Telecommunications

Accessibility Advisory Committee, convened to implement Section 255 of the

Telecommunications Act of 1996, involved many of the same personnel as the EITAC and its

recommendations were a source of existing implementation that Section 508 drew on. In their

1997 report, they explicitly suggest being guided by universal design, advocating the production

of products that would be "usable by more people without reducing the usability or attractiveness

for mass or core audiences of the product."[73] As the 255 regulations were aimed at requiring

industry to include accessibility features when readily achievable, this perspective might have

increased industrial support, as it indicated support for the importance of innovation and the

possibility that accessibility may not be readily achievable in some cases. 508, in contrast, was

aimed at government agencies and avoided invocations of universal design entirely. Many, in

fact, doubted the utility of the universal design model and considered accessibility and usability

as distinctly different concerns.[74] In making accessibility an enforceable mandate, usability was

pushed beyond the purview of their work; while a number of requirements were written against

which sites could be tested and deemed in/accessible, usability was understood as a separate

concern that would require extensive testing with a variety of users and would not have legal

implications. In essence, the 508 process demonstrated that the vast differences in individuals'

abilities, skills, disability status, and other life circumstances would lead to such staggering

differences in needs as to be impossible to legislate in such a way as to make all web content

accessible to and usable by all people.[75] Thus, for many involved with Section 508, "accessible,"

in practice, means "in accordance with accessibility standards"; the standards-making process

did not solve all accessibility problems, but merely provided a framework with which to evaluate

some of them.

The emphasis on legal enforceability of compliance by government agencies also led to a

somewhat clearer conception of audience than was seen in WAI WG deliberations. The primary

audience would undoubtedly be those web developers and managers tasked with bringing

government sites into compliance with Section 508. This audience was understood to be willing

to comply and merely waiting for instructions.[76] Yet, this audience would expand quickly, as

more state governments and institutions that received federal funding (particularly universities)

adopted 508 standards as sufficient for their purposes, as well. Given that expansion, and the

different interests of those involved on the committee, the target audience became a more fluid

concept. Advocates for d/Deaf communities, in particular, resisted attempts to write captioning

standards to include captions only when the audience was unknown and the artifact was to be

viewed multiple times. From the perspective of that community, such limitations may have

appeared as potential loopholes; from the perspective of others, it allowed for organizations such

as the military to eschew captioning for known audiences for whom it would not be needed.

Thus, it became difficult not only to target the language of the standards themselves, but even to

target their impact on any particular groups of people. While federal employees and members of

the public looking to federal sites were certainly expected to benefit, the committee was also

aware of the possibility that these standards could be used in any broadening of the ADA to

covering non-governmental websites, as well.

The Section 508 standards were revised and then published in final form in the Federal

Register on December 21, 2000, after which there where two months in which to obtain

Congressional approval (received in January 2001), and finally, enforcement of the standards

began on June 21, 2001.

Governing Form

Both WCAG 1.0 and the Section 508 standards represent attempts to govern the form of online

content in the interest of accessibility. That governance is exercised directly in the case of 508,

while the W3C can only exert influence through its recommendations and involvement in the

evolution of web technologies. The effects of these policies will be discussed in the next chapter,

however, their formation illustrates the limitations of changes at the level of form. While these

policies attended to the form of online content, the problems of accessibility incorporated the

levels of the individual points of entry, content, and use, as well, most of which were beyond the

reach of policy formation. The diversity of end users, the diffusion of those who would

implement standards, and changing hardware and software all indicated that accessibility could

never be simply defined. As indicated by Vanderheiden, accessibility has to be considered in

relation to individual circumstances; "'if you want to talk about accessibility, you have to talk

about a single person. You can never talk about something being accessible to all people."[77] The

introduction to WCAG 1.0 provides several examples of non-preferred user positions that might

need accessibility practices, including people who "may have difficulty reading or comprehending text," "may have a text-only screen," or "may not be able to use a keyboard or mouse," in addition to other difficult contexts for internet use.[78] No single accessibility guideline improves the web for all of these use cases, and even a site that meets all guidelines may be inaccessible to people for other reasons. This need for individual consideration of access circumstances conflicted with the prescriptive nature of such policies, which had to be issued as broad recommendations for a diverse audience.

The accessibility policies discussed in this chapter could be understood as "filter standards," through which something much pass to gain a certain qualification. Lawrence Busch defines filter standards as standards that separate those people or things that meet a standard from those people or things that fail to meet them.[79] Accessibility policies set standards designed to encourage changes in the form of web content by creating hurdles to be crossed in order to reach a point at which a site could be said to be "accessible," in that it met accessibility standards. The specific nature of these hurdles, or filters, was contentious, as described above. Despite the claims to order and objectivity that often characterize standards, Busch argues that standards are often messy and uncertain, precisely because they have important effects in the world.[80] As a result, there is often disagreement in the making of standards, and this was certainly the case for both policy processes described above. One participant recalled that the WAI WG struggled with having "so many different people at the table. I mean, we had people from all over the world, and so there's very different accessibility and cultural issues from every region, we had different corporations at the table who each had very specific ideas about what they did or didn't want in there, you know, we had disability advocates, we had industry advocates, we had just all sorts of people."[81] Many of these people additionally had different

levels of expertise, and different availability for the time commitments involved in these policy processes, in addition to different interests in the outcome. Disability advocates, for instance, understood the struggles of enforceability and clarity, but considered the end user to be the most important audience, as seen in numerous discussions. Measures such as captioning attracted ongoing debate, as policymakers debated the values of practicality and the ideal situation of completely captioned content. The challenges of diverse interests would continue into the implementation of WCAG 1.0 and Section 508, as well as in the development of accessibility in the second stage of policymaking.

In creating accessibility standards, the policy processes described above helped to create the cultural meanings of the categories of both accessibility and inaccessibility. The guidelines and standards produced in this era created these categories in formal terms, largely disconnected from issues of culture, use, context, or individual needs. As audiences began to encounter these standards, either as users with disabilities seeking accessible content, web developers, government officials, or some combination thereof, the meanings of these categories destabilized. The uncertainties about audience in writing the standards corresponded to confusion, rejection, and dissent among audiences after their completion.

Conclusion

The most interesting tensions in this first round of web accessibility policy are that their audiences are unclear and ideas of accessibility, usability, and universal design are in flux, and the expected outcomes are not entirely understood. All of this points to an uncertainty about what constitutes accessibility itself, even as these processes were instrumental in defining it. For all of the effort involved in producing standards regarding form, these did not address the range of

needs expressed by those alternate access positions described in the WCAG 1.0 introduction. The form of content only increased accessibility if other conditions were met, in terms of content, hardware, desired use, and financial resources, to name just a few. Recall Stan, whose story began this chapter; assistive technologies such as those that he relied upon would need to be interoperable with accessible code, without expensive upgrades. If that was not the case, no degree of accessible form would make the web usable for him, due to considerations that go far beyond form to touch on his individual needs at the point of entry.

Looking at the history of policy formation in this period reveals the importance of understanding accessibility, and other forms of access, as variable articulations of conditions that include individual points of entry. Accessibility policies could never be universally relevant, or perfectly formed, because of the unending differences in individuals' needs, desires, and surroundings. This early history demonstrates the impossibility of saying that a website "is accessible"–instead, we must ask if a site is accessible to a particular person, in particular conditions. The goals of accessibility thus become to broaden the possible user positions from which access may be achieved.

Part one of this project has focused on explicating and justifying a circuit model of the study of media access. These chapters have drawn upon histories of media, disability, and accessibility policies in order to suggest that access has often been oversimplified. Using web accessibility as both an inspiration and case study, it has demonstrated that preferred user positions disseminated in culture, politics, and technology function as default assumptions that mask a host of more complex means of access, and overgeneralize user experiences. And finally, interrogating attempts to make policies that govern the form of online content, this chapter has

reaffirmed the need to study access as endlessly contingent and shifting, rather than a single goal to be achieved.

In part two, I continue to move through the history of web accessibility in light of the remaining sites of analysis–content, use, and point of entry. Where the preceding chapters have justified the model by showing problems with other approaches, the following chapters delve into the complexities made visible through this approach. In the next chapter, focused on the site of content, I explore the implementation of WCAG 1.0 and Section 508. Generally speaking, implementation was slow and uneven, web development technologies and industries would change dramatically following the dot-com bust, lawsuits regarding the enforcement of 508 and applicability of the ADA to the internet were filed and often settled, and web-based technologies took on a larger cultural role in relation to information, communication, entertainment, and politics. In this environment, the meanings of accessibility began to shift, as it acquired overtones of onerousness and bureaucracy. Such meanings were made salient due to the persistent fears that increasing accessibility would not only change form, but would challenge the content of various online sites and services, as well as software and hardware. The amount of available online content grew rapidly in these years, and shifted significantly, rendering the standards described in this chapter quickly less relevant. How could new content meet old formal requirements without changing its very nature? Subsequent chapters in part two examine participatory culture and Web 2.0 at the site of use, and use ethnographic study of a contemporary blogosphere to consider the points of entry from which encounters with web accessibility begin.

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Chapter 4

Changing Content: The Implementation of Accessibility Policies

Clarisse is a young woman of color with an "invisible disability" that involves unpredictable, recurring, severe headaches. Strangers, and even acquaintances, are usually unaware of her health concerns, but Clarisse identifies as a person with a disability and talks openly about her health with family and friends. She is frustrated that her condition, fibromyalgia, is often dismissed as a psychological, or even hysterical, phenomenon. She sees the dismissal of fibromyalgia as related to its high incidence among women; she is similarly critical of cultural assumptions about fibromyalgia being the domain of privileged white women. Her disability is very real to her experience of the world, and she has had to shape her daily activities around the triggers that cause headaches, pain, or other symptoms. Online, Clarisse is a vocal disability advocate who embraces a social justice model of intersectional identity and political organizing. She considers her youth an advantage in reaching out to other young people experiencing invisible disabilities.

Despite the existence of accessibility policies and standards, Clarisse finds that many sites are minimally accessible to her, as animations, color combinations, and other features can trigger headaches. As a result, she actively avoids any site that has ever given her problems, culling her online world to focus on sites that are more or less "safe." She avoids YouTube videos because she never feels sure what will or will not provoke a reaction. Similarly, she avoids Tumblr, as she finds that it seems to encourage the sharing of animated .gif files, customization of the page, and posting videos. Much like MySpace, this is a social networking site based around individual

customization, and the diffusion of design among people with little background in it results in very little general accessibility for Clarisse and others with similar conditions.

Sometimes, Clarisse regrets her decisions to cut out sites that trigger headaches, as she wonders what content she might be missing. However, she prioritizes her health and comfort over taking a risk on a site with a less than reliable record of accessibility.

This chapter begins the second part, which moves forward through the history of web accessibility with attention to the remaining sites of study–content, use, and point of entry. Having established the need for a model of media study that incorporates the variations of access conditions, these chapters consider how those variants have affected the development of accessible online media. This chapter examines content in relation to the implementation of accessibility policies, the next turns to use in the context of participatory media and policy updates, and the last addresses point of entry through ethnographic study of a disability blogosphere. By breaking the remaining history into these sections, a particular history is told; we revisit policy, for instance, not just as a component of form but as a location in which use was hotly debated. These chapters all suggest articulations between spheres, as well; participation involves both use and sociohistorical context, and implementation touches upon form as well as content.

Temporally, I begin where Chapter 3 ended, following the implementation of WCAG 1.0 in 1999 and Section 508 standards in 2001. The web did not become fully accessible overnight

by fiat, through the trickle-down of benevolent industry leaders, the voluntarism of savvy web developers, or even through legal enforcement of the ADA and Section 508.

Many studies in the early years of the twenty-first century attempted to ascertain the rates of accessibility on the web, using testing software such as Bobby or CynthiaSays to check for code that did not meet accessibility guidelines or standards. Studies of federal websites found that the majority failed to comply with Section 508,[1] and disability advocates heard reports that the accessibility of a federal employee's working conditions varied greatly based on the agency's familiarity with disability issues.[2] University libraries, similarly often subject to 508 standards or similar state regulations, also had dismal rates of accessibility despite ample legal requirements and institutional knowledge.[3]

Outside of government circles, the accessibility situation remained even more dismal. One study found that over 70 percent of commercial sites failed accessibility tests.[4] Although individual webmasters indicated that they were informed about accessibility,[5] this knowledge did not result in implementation because other concerns were prioritized over accessibility. Some studies of accessibility in the early 2000s even found that accessibility decreased over time, likely as complex scripts and multimedia features increased. A study of Fortune 100 companies' sites revealed that over 80% of these sites were inaccessible to people with visual disabilities; only 27% of sites had no Priority 1 barriers, as described in WCAG 1.0, and passed user checks.[6] The authors of this study suggested that factors from lack of training and technical difficulty to out of date standards and financial factors affected the lack of accessibility on these sites.

Thus, for people whose situations resemble the above characterization of Clarisse, the existence of web accessibility policies is hardly a comfort; their experiences of the web involve many sites that do not meet their accessibility needs. As a result, people with disabilities often

browse smaller sub-sets of the internet, sticking to sites that they know are accessible, or that they have learned to navigate despite technical inaccessibility.[7] This represents a significant curtailment of available content for many people with disabilities, and as such, demonstrates a persistent inequality of access to mediated information and entertainment. At an experiential level, it could be said that web accessibility only exists insofar as it is implemented; for web accessibility guidelines or standards to become normative, and thus reliable for people like Clarisse, they must be put in to practice on a significant number of sites. Online, however, such implementation must be done by a large number of diverse individuals responsible for producing online content. Corporate web staffs, boutique developers, those responsible for major social networking sites, blogging platforms, or search engines, and individual bloggers and content producers are all "page authors," to use W3C terminology, who could implement voluntary accessibility measures. Government employees and contractors, bound by Section 508, must adhere to those standards, although studies have shown that they did not always do so.[8] Why, once accessibility policies had been crafted and released, were they not fully embraced?

This chapter considers how the attempts to govern the accessible form of online content, discussed in Chapter 3, continued to struggle with enforcement and conflicted with ideas about what constituted "good" content. Focusing on the years between releases of WCAG 1.0 (1999) and WCAG 2.0 (2008), and encompassing the aftermath of Section 508 standards (the Refresh of which is still in progress), I consider how discourses about accessibility developed in opposition to discourses about creative, profitable online content. In analyzing reactions to accessibility policies in relation to online content, I draw upon interviews with several policymakers, popular and disability press coverage of accessibility, and a web development trade press, which includes various high-profile web sites as well as textbooks and how-to guides. Trade press and

instructional texts aimed at the web development community offer a useful site of analysis.

Aimed directly at those professionals and amateurs working to develop their web design skills,

launch e-commerce start-ups, or otherwise further their professional success in internet media,

these texts would seem, perhaps, more likely to address access, accessibility, and related issues

than popular or academic sources. Through analysis of these materials, it becomes clear that

accessibility was regularly segmented off from other discussions of web technology, and was

almost never discussed in relation to creative content. Through this positioning, it failed to be

incorporated into the zeitgeist and reinforced ideas about disability as difference and deficit,

casting Americans with disabilities as recipients of "special" rights acquired through the charity

of others. Furthermore, attempts to make web accessibility a matter of equity and civil rights,

using ADA protections to challenge sites such as AOL.com, resulted in settlements without

setting legal precedents. Thus, major content providers were not legally required to adhere to any

accessibility measures, perpetuating an environment of voluntarism that produced enormously

variable results.

<u>"Good" Design vs. Accessibility</u>

The contrast between accessibility and other discourses of mainstream web development began

with the contrast between early accessibility guidelines and the mainstream valuation of web

aesthetics around the turn of the century. In this period, the meaning of "accessibility" was still

hotly contested, and the ways in which accessibility was discussed (on the relatively rare

occasions that it was invoked to refer to usability by people with disabilities) were fundamentally

different from the mainstream discourse of the web industry. The emphasis on web aesthetics

and innovation was so strong as to lead to conflation of content and aesthetics; a site's meaning

was not in what it said, but in how it said it. Thus, strict accessibility recommendations that prioritized text and HTML seemed likely to restrict the ability to innovate with web aesthetics. There was a strong perception that accessible sites would be unattractive and unsuccessful, as regulation of form would inevitably degrade the quality of sites' content. Accessibility was a minority discourse that sat uneasily with those called upon to implement it.

The especially pronounced mutability of the term "accessibility," and its root, "access," during the late 1990s and early 2000s is clearly demonstrated in instructional books that conflate the needs of people with disabilities with a number of other concerns about web access. Often, accessibility was linked to internationalization, the challenges of reaching users with disabilities folded into the challenges of reaching global users.[9] These topics may also be segregated from broader concerns of web development, often given their own chapter or chapters rather than integrated with the technical and design material in the rest of the text, and notably placed at the end of the book, implying that they are add-ons to the basics of web work.[10] Additionally, references to accessibility and access often entail attention to alternative displays or modes of use more generally, such as Web TV or emergent hand-held devices, as "some users may be watching your web page on TV. Still others may be viewing it in the palm of their hand on a PDA (personal digital assistant) or cell phone. Sight-impaired users may be listening to your page, not viewing it."[11] Though some texts published between 1997 and 2000 did include accessibility guidelines, usually derivations of the WCAG 1.0, the fluidity with which the term "accessibility" was used indicates that its official meanings and requirements were not yet fully understood by a broad audience that was primarily concerned with artistic expression, e-commerce, and aesthetic design.

Flashy tricks, faster processes, more elegant code, and a never-ending search for the next big thing came to characterize professional discourse in magazines, trade publications, and instructional handbooks. The emphasis was so strong as to cause a slippage between good content and good design–a good website, in the late 1990s, was one that *looked* good, not necessarily one that offered particularly valuable content or services. The web industry in the late 1990s:

> brought together advertising and design's focus—youth, cool and sexiness—with the competitiveness and commercial ambitiousness of financial sectors, then mixed in software developers' tendency to focus on technology for its own sake rather than for its usefulness to people. The overall result was a boys club atmosphere.[12]

Jeffrey Zeldman noticed such trends among web designers, in particular, who were "tired of underlines and menu bars. We want to burn down the house, and forge newer, better interfaces in the fire" and thus turned away from everyday users to show off where, in a "'special' environment of their Web-savvy peers, they feel validated, understood, embraced by a secret brotherhood of bleeding-edge creative geniuses."[13] This elitism and emphasis on aesthetics over function are also noted in Ankerson's discussion of web development culture focused on Flash animation software, where "By positioning themselves not as designers but as auteurs with a unique vision, Flash provided the means for many creative practitioners to re-imagine the craft of web design and intervene in the e-shopping discourse that was gaining momentum between 1998 and 2000."[14] She notes that in this context, "'standards,' 'accessibility,' and 'usability' interfered with the creative process"[15]; concerns with user experience, and particularly with the experiences of a minority of users such as people with disabilities, were bracketed off as irrelevant, if not detrimental, to the design imperative.

Stunningly, this emphasis on aesthetic elements over accessibility carried over even to portions of the disability press that moved online. This can be seen in the hiring of "a leading Internet services firm" by HalfthePlanet.com (a disability portal), which itself received funding from a "preeminent Internet-only Silicon Alley venture capital firm,"[16] and in the partnership between We Media and HotJobs.com, where disability-focused organizations shared enthusiasm regarding the dot-com boom and its flashy trappings. Other disability publications moved online around the turn of the century, as well, including *Deaf Life* in 1998, *The Disability Rag* in 1997, *Mainstream Magazine* in 1999, and *We Media* in 1999.

Most notably, however, the disconnect between extravagant design and web accessibility struck *WE* Magazine's online lifestyle portal. *WE* went online at wemedia.com as a lifestyle site and online hub for a disability community. Their magazine article announcing the site trumpeted the involvement of several people with disabilities as well as the importance of accessibility. Because "poor site design, navigation and usability become core problems for people with disabilities trying to surf*," We Media* wanted to address these concerns proactively, causing their developer (formerly of a legal software company) to remark, "I never had to deal with these kinds of specifications at my old job."[17] Here, accessibility was presented clearly as an issue for people with disabilities, and as something that was especially—or only—important when targeting this audience; accessibility was not understood as part of web development best practices. Despite *WE*'s print coverage of its site and its accessibility, the reality was dire:

> The designers had failed to include descriptive text captions […] for the graphics […]
> Flash technology, which is murder on deaf as well as blind users, was used all over the
> site. The audio and mpeg (movie) clips had no closed-captioning for deaf users. The

complexity of the home page defied the mouse skills of a person with limited mobility

[…] this fault in our own now-conspicuous public face was mortifying.[18]

The description of the site, including its reliance on Flash, tracks with the general extravagance and one-upsmanship of eye-catching, edgy web design at the height of the dot-com bubble. The glossy, expensively-produced *WE* had positioned itself against the strong activist strands of other disability publications in hopes of capturing a broad audience and mainstream attention[19]—in keeping with this, its online presence was launched along the lines of a dot-com start-up, and it fell prey to many of the same issues seen elsewhere in web industry discourse, including treating its audience primarily as consumers, advocating exuberant and edgy design at the expense of the user experience, and treating accessibility as an afterthought. The failure of wemedia.com was one of the major factors in the eventual demise of *WE*.[20]

The emphasis on the appearance, rather than the functionality, of websites during the late 1990s perhaps reflected the romanticism, libertarianism, and technotopianism of the early internet; it certainly carried over into a discursive tone that was young, hip, casual, and achievement-focused. The Web was dominated by those who "got it,"[21] and its industry discourse dripped with disdain for popular web browsers (and their users), emphasized the new over the useful, and worked to construct a model of web development that was, by-and-large, utterly indifferent to questions of access, identity, or difference. Thus, on occasions when web accessibility was included in an instructional text or trade press story, the tone with which it was discussed jarred with the style of much web industry discourse. In some cases, the exclusion of accessibility from what was hot in the web industry was explicit, as "On my desk is a copy of the World Wide Web Consortium's (WC3's) unhip-sounding document, Web Content Accessibility Guidelines 1.0, which advises information providers to design websites as simply as possible."[22]

Besides oversimplifying WCAG 1.0's recommendations, this statement directly expresses the values of the web industry and positions accessibility outside of these norms. What was "hip" was very rarely accessible, and what was accessible was "simple" and rarely understood as "hip."

From this glimpse of professional discourses of "good" web design, it seems that disability (and accessibility) were regularly discursively positioned in opposition to the promises of style and innovation on the web, recalling previous conflicts between beauty and disability. There are longstanding disconnects between fashion and function, in which imperatives of beauty and innovation may conflict with a solution-oriented approach to "fixing" the problems of disability. Graham Pullin suggests that much design for disability in the physical world has aimed for invisibility, while fashion is concerned with the creation of a particular image[23] - thus hearing aids have most often been ugly and useful, while earrings are designed for aesthetic pleasures. Pullin notes that the cultures of assistive technology and related fields have been quite separate from those of designers or artists,[24] perhaps leading to the ugliness of disability devices. For many in assistive technology, the pursuit of function dominates, making considerations of form and aesthetics appear shallow or unnecessary.[25] Yet in order to destigmatize disability, and find in it inspiration for future designs, Pullin argues that the two cultures need each other. A similar argument has been made by advocates of inclusive or universal design in the built environment, as "it is *designers* who will decide whether accessibility will take to form of better design for everyone, or simply unattractive, costly, band-aid responses to annoying [legal] code requirements."[26] Perhaps the associations of disability with ugly medical devices or poorly-designed architecture carried over to the web, predisposing designers to react with antipathy

toward the notion of accessible web design. However, it seems clear that the maintenance of this divide through the professional literature did nothing to help the cause of an accessible web.

Accessibility, Usability, and Standards

Following the dot-com crash, tastes shifted to value simplicity and usability in web design. This facilitated an emphasis on standards and universal design as markers of quality web production. Accessibility was often discussed in these terms, integrated with ideas of usability and standards. Discussion of accessibility per se, as a somewhat specific kind of development aimed at a particular audience and with potential legal force behind it, was less common. WCAG 1.0 and Section 508 standards were often criticized for their inflexibility and for making accessibility unnecessarily complicated. Standards, usability, and universal design were positioned as solutions to the problems of inaccessibility that would, simultaneously, preserve the integrity of web content and value developers' creative efforts.

Ankerson describes the rise of usability as a reaction against the visual styles of excess characterized by Flash websites in the late 1990s, and an attempt to move forward following the economic downturn by returning to fundamentals. Designers and developers sought a return to the basics of the web, but were reluctant to entirely abandon the discourses of creativity and elite status that had been established in earlier years. Perhaps as a result of attempting to reconcile these divergent discourses, there emerged numerous "gurus" or "standardistas" who actively promoted the creative potential of using clean, standards-compliant code. Many standardistas advocated in books, articles, and online publications for the full implementation of standard web languages and syntax. Apart from accessibility standards, there are W3C standards for writing correct HTML (currently, HTML 5), CSS, Ajax, XML, and other web technologies. For these

developers, many of whom were also involved in accessibility consulting, accessibility was understood to *build upon* existing standards; other W3C standards formed a baseline, many portions of which already aligned with accessibility recommendations, and upon which other features could be added. Sites developed in accordance with standards were generally more robust, more flexible, easier to maintain, and were certainly examples of best practice in web development. Complying with W3C standards, writing clean code, and testing sites with actual users were upheld as new standards for good design.

The embrace of standards among elite developers, and their evangelistic efforts, has been described as a positive form of self-regulation among web developers as cultural workers.[27] Helen Kennedy argues that web accessibility grows best not through legal imperatives, but through the self-regulatory motivations of developers who considered accessibility a moral imperative or an integral to their professional craft. She points to grassroots sites such as the CSS Zen Garden, which demonstrates how the same HTML content can be re-presented in different styles using Cascading Style Sheets, and the success of the grassroots Web Standards Project in persuading manufacturers of web browsers to support standards as evidence for the success of such self-regulation. However, Kennedy's study relies upon interviews with "web design gurus" and people involved with Inclusive New Media Design, a UK group dedicated to increasing accessibility for people with intellectual disabilities.[28] In other words, this is a highly self-selecting group, among whom voluntary embrace of standards and accessibility practices might be expected. Kennedy does not indicate that such attitudes exist, or lead to accessible sites, among other sectors of the web industry. Furthermore, though the independent advocacy of organizations such as the Web Standards Project is laudable, their mission is to promote compliance with W3C standards; this self-regulation builds upon the regulations established as

best practices by the W3C. Though some standardistas and other developers chafe at the notion of legally enforcing accessibility, or other standards, they clearly see value in the existence of guidelines, and often participate in their formation in order to advocate for the best possible guidelines.

The turn to usability and standards resulted in a growth in professional literature that considered accessibility for people with disabilities, though it was rarely discussed in exactly those words. Instead, accessibility was discussed as a component of other theories of design and development, including universal design, usability, inclusive design, universal usability. The introduction to *Inclusive Design* (2003) explains this treatment of accessibility by saying that:

> it became clear that designing specifically for disability and ageing could create more problems than it solved through an over-attention to capability deficits and therefore a reinforcement of the medical model as opposed to the social model of age and disability… This recognition prompted a similar shift away from a technical, problem-solving emphasis on design 'for disability', which placed it firmly in the margins of design practice, towards more inclusive approaches that focus on the softer, destigmatising aspects of designs that promote social integration.[29]

It was hoped that by including disability as one of many challenges, its isolation from other development discourses would be reduced, and web development could proceed in the interests of a wide variety of potential users. This perspective encouraged attention to the ways in which the needs of people with disabilities had "resonance" with the needs of other, non-disabled people in particular circumstances. Some even argued that bodily differences could act as sources of inspiration, prompting new and better designs in built and computer environments.[30]

Many instructional texts embraced ideas of universality, user-centered web development, or similar frameworks, and mentioned accessibility as a specific case only briefly. For instance, Jonathan Lazar's *User Centered Web Development* describes the goals of "universal usability" as "making informational systems that anyone can use from any platform, any screen size, any browser, any location, and with any disability,"[31] and Andrew Sears adopts this terminology in his chapter of *Universal Usability and the WWW*, which considers disability, age, international audiences, and varied technologies.[32] Sears, like many others writing in the early 2000s, provided references for readers interested in accessibility specifically; he listed the Trace Center, a website dedicated to universal usability, the *Falling Through the Net* reports, and the W3c, among other resources. Thus, though accessibility was tied to broader frameworks for understanding web development, its specific details were made available for those who were interested.

The specific details of accessibility were important because, despite resonances with these other frameworks, accessibility existed in a very different regulatory environment. The existence of 508, and the possibility of web accessibility being required under the ADA, meant that not only was accessibility "always desirable because it expands your market," but "for many government and educational sites, accessible Web design is a requirement."[33] Thus, accessibility, unlike usability or similar concerns, was a kind of coding that might be required, and that developers might have to learn for reasons other than self-interest. In some ways, web accessibility offered an opportunity to advocate for standards more broadly; accessibility was often taken up due to legal or organizational policies, whereas code validity did not have such official backing in many environments. By ignoring the legal implications of accessibility, the turn to standards and usability missed a potentially powerful way to encourage compliant web

development. The conflation of accessibility with other concerns served to normalize its discursive standing while downplaying its specific moral and legal status in regards to Americans with disabilities.

Furthermore, despite the ease of distributing content online, the turn to standards and usability did not lead to the development of robust online resources relating to accessibility. Certainly, WAI produced supplementary documents, including a "Before and After" demonstration that shared the code and appearance of sites before and after accessibility guidelines were met,[34] and sites such as *A List Apart* published occasional articles on web accessibility. However, nothing to rival the CSS Zen Garden or Web Standards Project emerged. Joe Clark, an accessibility consultant who wrote for *A List Apart* and participated in the working group prior to the release of WCAG 2.0, recalls that " everyone working in the web business has the means of production… Web accessibility, accessibilitistas, have the web itself to discuss their own work. But even so, we were a minority in many respects, preaching to ourselves."[35] The self-regulation described by Kennedy adhered strongly in this community, which hotly debated the best standards and means of implementation. However, standardistas were "almost an oppositional voice"[36] within web development, as they were outnumbered by web developers who did not take the time to understand and implement standards, and who built websites with invalid code, relying upon browsers to automatically correct it. As universal design, usability, and standards attempted to encourage self-regulation of accessibility to spread beyond elite developers, many industrial texts and popular press articles focused on encouraging accessibility by emphasizing a consumer model of disability and counting on the success of voluntary accessibility implementation. Perhaps an interest in profit would be sufficient to increase accessibility at the granular level of individual web sites and services.

The Consumer Model and Voluntarism

Accessibility advocates made many efforts to frame their evangelism in terms of the possible

financial rewards of accessibility for commercial web sites. If self-regulation or moral

imperatives were insufficient motivators for commercial developers, perhaps financial benefits

could convince company managers to implement accessibility measures. As Jim Barry of Bell

Atlantic Outreach, told *Ability Magazine*, "once we see people with disabilities regarded as

potential customers, then there will be a new interest" in universal, or accessible, design.[37] This

quotation illustrates the precarious position of universal design and accessibility, still waiting to

become an object of interest for mainstream businesses, still waiting for a consumer model of

disability to take root. This faith in the consumer model as a motivator for change and inclusion

was expressed in popular press, trade press, and textbooks throughout the early 2000s. Crucially,

faith in voluntarism was often paired with the threat of legal enforcement; authors argued for

voluntary measures by encouraging accessible development as a precautionary measure.

Enthusiasm about voluntary measures was particularly evident in popular press stories

that criticized the ADA or Section 508 as impositions of government into problems best solved

by the market. While stories hostile to civil rights arguments for accessibility always expressed

sympathy for the plight of people with disabilities, they routinely dismissed these concerns to

argue that "government disabilities regulation should not be imposed on the laissez-faire

environment of the Web."[38] Here, the Web's reputation for openness and individualism worked

against the need for accessibility regulations. If the government were to intrude on the chaos of

the web at the level of accessibility, it was feared that ultimately content would suffer "for the

rest of us,"[39] positioned as "normal." They also emphasized differences, excluding people from

disabilities from a mainstream in which benefits of convergent policies and technologies might be realized by individuals. By casting accessibility as an inappropriate realm for government intervention, such arguments maintained a charity model of disability; by invoking the market as a reason to pursue accessibility, as discussed in Chapter 2, they upheld a consumer model of disability in which benefits to the market were prioritized over civic benefits of equality.

More often, the distance in tone is conveyed through a shift in emphasis from creativity and risk-taking to pragmatism and business models when discussing accessibility. Pragmatism often took the form of delay, as when iSyndicate's Jeff Thomas said accessibility was "on our radar screen. It seems like something we would ethically want to do. The short-term answer is we aren't doing anything now."[40] If not outright refusal or delay, accessibility was often discussed not in terms of best practices or later benefits but in terms of pragmatic partial implementation. In Jakob Nielsen's *Designing Usability*, which was crucial in moving the industry away from over-emphasizing aesthetics and toward considerations of the user experience, he nonetheless begins his chapter on accessibility by stating that, "I have a pragmatic approach to usability and sometimes cut corners in order to meet deadlines or satisfy other design trade-offs […] Even if you cannot design a fully accessible site, you have the responsibility to include as many accessibility features as possible."[41] Accessibility, from the beginning, was thus positioned as potentially expendable at worst, and as a matter of responsibility rather than creativity at best.

Finally, a number of pragmatic arguments focused on denial of the need for government-enforced regulation and the maintenance of a voluntary web accessibility ecosystem. In discussing the applicability of the ADA to the internet, a spokesman for the US Internet Industry Association urged for the maintenance of voluntary efforts rather than regulation because

voluntary guidelines could better respond to shifts in online technology.[42] This voluntary system

relied on a trickle down effect, as "the profile of accessibility is being raised to a point where

manufacturers have to pay attention and Web masters are going to have to start paying

attention."[43] But, at base, a voluntary system of web accessibility would have to rely "on the

participation of web developers to build sites according to the proposed guidelines,"[44] and that

participation was far from assured without significant outreach, clear standards, and the ability to

connect the importance of accessibility to the desires and interests of a diverse group of web

authors. Framing that positioned accessibility as *different* from other components of web design

and development counteracted the last portion of that mission, and, perhaps, can be understood

as part of the reason for the failure of wide-scale accessibility implementation through the first

decade of the 2000s.

Closely related to discourse of pragmatism was the focus on business imperatives, in

which people with disabilities were once again framed as a potential market rather than as a

group of people with rights to access online content. *Forecast* made this explicit in 2000, asking

"Looking for the next hot market on the Internet? Look no further than the substantial number of

consumers with disabilities."[45] Accessibility was presented as offering an entrée to a new market

niche[46] and as a way of including as many customers as possible.[47] After all, "If other online

stores block disabled visitors and nontraditional device users and *your* store welcomes them,

guess who will be selling to those customers, and guess who won't be?"[48] Accessibility was also,

on occasion, presented as potentially profitable as it might enable better search engine

optimization, driving users to the site, as "search engines are essentially blind users." Both blind

users and webcrawlers could not understand images and other multimedia content without

textual descriptions; thus providing descriptions for the sake of accessibility would enrich a site's

metadata (or vice versa). The potential profit in accessibility was discussed both in terms of how much money could be made from a disabled audience and how inexpensive it could be to code for access. The expense of accessibility, of course, is one of the "myths" debunked in professional discourses. Accessibility is described as "easy and cheap,"[49] or achievable "with minimal effort and cost."[50] The sense that the authors of instructional materials might protest too much is justified; accessibility was regularly described in the industry as an additional, unjustifiable expense.

The expense of accessibility was one of several "myths" regularly debunked in writing about accessibility. The most common assumptions discussed are the following: accessibility is too expensive; it is irrelevant to the mission of a site; accessible sites are simple and ugly; and accessibility is hard to implement.[51] Almost always presented as "myths" and then refuted, these arguments in fact seem to have only gathered strength through repetition and furthered the distance between the pleasures of other forms of design and development and the drudgery of accessibility work. The intent of the pragmatic and business-centered justifications for accessible web sites was to provide developers with arguments to use with their clients and supervisors who were not interested in the ethical arguments for access. However, this motivation only further isolated accessibility from other discourses of web design and development by positioning the audience not as the author or creator but explicitly as an employee. This isolation even resulted in hostility toward accessibility, as it became seen as an annoyance:

> many well-intentioned accessibility books preach fire and brimstone. The smell of sulfur does not inspire designers[52]

> In short, I intend to make accessibility *less* of a *pain* in the *arse*[53]

Accessibility, here, is positioned as something that must be painstakingly justified to others in business-speak, and that is a routine and uncreative activity for the developer. Writings that debunk the developer-centered "myths" of accessibility—boring design and extra effort—made an effort to bring accessibility in line with the ideals of creativity and individualism within the profession, but did not succeed in changing this defensive discourse of accessibility as "not as bad as you think."

The trade press and instructional texts of the 1990s reveal that accessibility remained a counter-discourse, explicitly different from the mainstream way of talking about and engaging in web design and development. As industry largely succeeded in retaining a voluntary model of accessibility for private sites, leaving decisions about implementation to the site, corporation, or individual responsible for its creation, this discursive disjuncture threatens the very possibilities of implementation. By failing to connect to developers and industry discourses, accessibility failed to be incorporated into default standards, best practices, or discourses of creativity and experimentation. Pragmatism, profit, and threats only increased perceptions of accessibility as potentially cumbersome, unpleasant, and required. The majority of online content remained inaccessible long after the release of WCAG 1.0 and the Section 508 standards, as developers did not voluntarily take on what seemed to be a burden of accessible coding, and businesses did not actively embrace the market-driven arguments in favor of accessible sites.

Creativity and Content

Much of the resistance to accessibility came from a protectiveness towards online content, a resentment of the idea that web sites' *content* would be forced to change for "normal" people in order to accommodate people with disabilities. In the era of exuberance, content and aesthetics

were closely linked in evaluations of what constituted a "good" website. The notion of being required to change the *form* of content was particularly abhorrent in cases that seemed to require changes to the visual design of a site. Design, in other words, was part of content. The "hipness," or creativity of a site's appearance was as important, if not more important, than the informational content or functions of many sites, particularly before the dot-com crash. Even after the rise of usability and standards, when content was regularly shaped around the needs and desires of an intended user, many people involved in the production of web content felt a strong creative ownership over their words, images, and other content. And, of course, in an environment characterized by a consumer model of disability and a voluntary model of enforcement, it was easy for many organizations to think that they shouldn't need to be accessible because they did not have a significant audience of people with disabilities.

Additional threats to content came from the attempts of WCAG 1.0 to deal with intellectual disabilities. In order to make sites more accessible to this audience, Guideline 14 recommended that web documents be "clear and simple." As part of this guideline, Checkpoint 14.1 commanded that developers "Use the clearest and simplest language appropriate for a site's content."[54] This was a Priority 1 checkpoint, which the guidelines state developers *must* meet, or else the content will be impossible for some groups of people to access. This checkpoint did not have a counterpart in Section 508 standards, precisely because it was a vague standard that required significant exercise of judgment in determining what language would be sufficiently simple, and what content required a higher level of language.[55]

Many reacted badly to the sense that WAI was attempting to control content, rather than presentation, with this recommendation. One participant in the writing of WCAG 1.0 recalls that "Designers think that we're telling them that they can't use color, and writers think we're telling

them how you can or cannot write, so there's pushback." Of course, language itself is imprecise, and nearly impossible to test or evaluate for its accuracy of communication. As an industry accessibility expert explains, governing content comes down to "how information is *authored* […] not just how the code is written, but how the words are used. And people definitely have a little bit more difficulty with that because it's encroaching on the author's way of delivering their own content." And, in fact, having a guideline that dealt with questions of language, and thus with content directly, led to significant confusion and resentment in implementation.

Joe Clark recalled struggles over plain and simple language when the Working Group began discussion of an updated version of WCAG in the early 2000s. He recalled being the only professional writer involved in the process, and as such "I am not going to have them dictate to me how I can write. I refuse."[56] Clark saw this conflict in terms of creative personnel, content creators, versus a more technocratic, academic, and industrial approach that dominated the W3C's approach. Clark understood the value of simple language, and its requirement, for government or educational sites, but thought that it was impossible more generally.[57] Newspapers, blogging, quoting the historical record, and other forms of online writing would potentially be hobbled by requirements that all web content be written clearly and simply. More likely, of course, was that this recommendation would be roundly ignored as impractical, furthering the sense that accessibility was unwieldy and impractical.

Guideline 14, and similar checkpoints relating to color contrast, animation, or tabular layouts were understood as threats to the creative process, and thus to the creative expression of content online. However, these threats to the creativity of final content were only one way in which accessibility threatened content. By recommending the use of W3C technologies for

accessibility, WCAG 1.0 was perceived as a possible threat to content creation tools, such as Macromedia/Adobe Flash.

Flash had powered countless sites for major corporations and start-ups alike during the dot-com boom of the late 1990s, but it was a disaster in terms of accessibility. It incorporated animation or video in concert with audio and dynamic interface features such as menus and buttons, and lacked structures to add captions, communicate with screenreaders, or control the interface in alternate ways. To address the lack of accessibility in such formats, WCAG 1.0 suggested that web developers use "W3C technologies"–essentially, HTML–whenever possible. The guidelines were widely interpreted as calling for text-only, or minimally-designed pages, and were thus largely ignored. But, however onerous this process appeared to developers, it was at least as damaging to industrial morale. Flash, Ajax, Microsoft Silverlight, ePub, and a variety of other web content technologies and formats were rapidly increasing in popularity through the late 1990s and early 2000s. Though they initially offered little in the way of accessibility options, it appeared that the companies behind such technologies would not be able to advocate for their use regardless of improved accessibility features if the standards remained static in their recommendation against these alternative formats. Developers seeking to comply with WCAG 1.0, which had been partially adapted into laws in Canada, France, and New Zealand as well as influencing Section 508, seemed likely to continue to avoid these technologies in order to achieve compliance.

Additionally, such blanket recommendations made on the basis of technological from the late 1990s had the effect of potentially limiting consumer interest in these formats and their offerings. Companies that become known for their lack of accessibility, whether via accessibility standards or simply word of mouth, often struggle to gain customers even after improving their

products, as many people with disabilities become accustomed to shaping their technology and web use around the products and sites that they know will be usable. Therefore, because WCAG 1.0 and Section 508 indicated that some technologies were preferable to others for the purposes of accessibility, they also potentially dissuaded people with disabilities from seeking out and trying non-preferred technologies down the road.

The case of Flash was particularly notable because of its popularity in turn-of-the-century web design, and its use as an environment for developing complete sites or web applications. No longer sought out simply for its animation capabilities as exploited in splash pages, Flash refigured itself as a multimedia container. Its scripting capabilities were dramatically increased, allowing developers to essentially write code to execute within the Flash window. This proved useful for more advanced site designs, for dynamic applications that drew on user input to change the display or behavior, and ultimately for an explosion in browser-based video games that were written entirely in Flash. In a blog post, "A Call to Action: Making Flash Accessible," Jim Heid decried the inaccessibility of Flash-created content as a growing concern as more and more content was developed using the software.[58] The software itself was also inaccessible, should people with disabilities want to develop in that environment, but Heid's primary concern was with the finished products, circulating online, which people with disabilities could not access.

Despite WCAG 1.0's recommendation against proprietary web technologies, Flash began a major overhaul in 2001, likely in part due to the passage and enforcement of Section 508.[59] In keeping with the turn to usability, Macromedia launched "an ambitious "usability awareness" campaign, a joint enterprise that enlisted the help of prominent Flash developers to re-position the technology and educate the Flash community about the importance of "user-friendly"

experiences."[60] In 2002, Macromedia released Flash Player 6 (the software that allowed Flash content to play in web browsers) and Flash MX (the authoring software in which Flash content was developed). The accessibility improvements in these releases focused on the accessibility of Flash content, rather than authoring, an understandable choice given claims that 98% of web users had Flash player installed[61] and the need to make Flash a usable option for government offices under Section 508.[62] Flash MX offered an accessibility menu, which could prompt content creators to add descriptions of video, or labels to interactive controls, in addition to testing for color contrast and other fairly simply determined accessibility features. The most notable increase in accessibility came in screenreader compatibility, which had been entirely absent from earlier versions of Flash software, though captions and other features were also improved. Certainly, there was no guarantee that Flash content was always accessible; the content creators who used Flash to develop their games and play their videos had to choose accessibility. However, accessible Flash content was now possible, and would become increasingly important to the development of the Web moving forward in the twenty first century.

A List Apart's coverage of Flash MX was largely positive, pointing to the importance of a major proprietary software company making accessible products. Andrew Kirkpatrick of Adobe, which would soon purchase Macromedia, wrote that "People concerned with accessibility issues will find shortcomings in Flash, as is also easy to do with HTML. Rather than deriding Macromedia, we need to work with them to progress toward better solutions."[63] This suggests a repudiation of the recommendation of using only W3C technologies, as did Clark's statement that "Accessibility experts are, moreover, generally hostile to good visual design. There's a considerable bias within web accessibility toward "universal" HTML and away from

"proprietary" software like Flash and PDF. People are just gonna have to get over that."[64] Flash's attempts to implement accessibility features indicated that W3C technologies were not the only options for accessible development, and suggested that a wider range of content than simple HTML pages could be made accessible to people with disabilities without losing the creativity, innovation, and "hipness" of web design and development. As Clark wrote, "the Macromedia case is a concrete example of a high-profile company with a kewl product embracing accessibility in an unbegrudging way. So what's your excuse?"[65]

Attempts to regulate the form of online content, perhaps inevitably, met with resistance from those who created content, for whom some recommendations in particular appeared to be needless constraints on innovation. In a largely voluntary environment, this meant that much content remained inaccessible, as detailed at the opening of this chapter. However, some accessibility policies could be, and were, enforced legally. Clark attributed Macromedia's accessible makeover to the pressure of Section 508, as the company may have believed accessibility was "the right thing to do for all the usual ethical and business reasons, but the inciting incident was the prospect of permanently losing U.S. government sales."[66] Threats of enforcement led to increases in accessibility, and throughout the early 2000s, accessibility advocates began to consider how various forms of enforcement might promote accessible content.

Web Accessibility and the Need for Enforcement

As discussed above, the chasm between discussions of accessibility and discussions about web content and innovation perpetuated an environment of voluntarism in which many developers avoided accessibility due to its reputation or their concern about the integrity of their content and

design. The resulting inaccessible bulk of web content was further perpetuated by the lack of

practical channels by which to enforce accessibility practices. WCAG 1.0 was, of course,

voluntary. Section 508 web accessibility measures were to be enforced through a complaint

system operated through individual federal agencies, placing the onus of enforcement on

individuals with disabilities. The other means by which accessibility might have been enforced

was via the ADA. As discussed in Chapter 2, Title III of the ADA covered places of public

accommodation, and the Department of Justice stated as early as 1996 that this ought to be read

as pertaining to online services, as well. However, the applicability of the ADA to the web was

untested as a means of enforcing accessibility until *National Federation of the Blind vs. America

Online* (1999), which argued that AOL's inaccessibility constituted a violation of the ADA.

In the 1990s, AOL was a major Internet Service Provider, as well as a portal. AOL

subscribers would use the ubiquitous CD-ROMs to install an AOL program on their PCs, then

use that program to carry out dialing up to the internet and logging into AOL's proprietary

offerings. This structure, by which users went through AOL's program in order to access their

online services, raised concern among blind Americans, as the software program was not

accessible. Curtis Chong, director of technology for the National Federation of the Blind (NFB)

recalls that the organization made the choice to file due to the incompatibility of that software

with screenreaders, because they feared that AOL was setting a standard that other providers

would follow.[67] The NFB sent a letter to Steve Case, AOL's CEO, and received no response to

that or other inquiries about AOL software. Thus, they filed because "we were scared, frankly,

that the whole internet was going to get away from us. And if that happened, we thought we were

in huge trouble."[68] The class action lawsuit claimed that "AOL violated the ADA because its

services were inaccessible to the blind and therefore did not comply with the accessibility requirements of Title III."[69]

Ultimately, *National Federation of the Blind vs. America Online (AOL)* (1999) was settled out of court in 2000 when AOL agreed to make its services accessible to blind and visually impaired customers. In the settlement, AOL stated that it had already been working on screenreader compatibility for AOL 6.0,[70] and as part of the settlement it created a corporate accessibility policy, checklists for employees, and entered partnerships with screenreader companies, in addition to pledging to meet with the NFB.[71] In return, the NFB agreed to hold its suit for one year. Significant improvements were made, and the suit was discontined, as the NFB "would prefer to work in partnership with AOL to assist in bringing information to the blind."[72]

This settlement meant that the case did not set precedent for cases alleging online accessibility violations on the basis of the ADA. Chong recalls that they had hoped to get legal ruling that the ADA would apply to the internet, and were disappointed in the outcome in that respect.[73] Several other cases have sought similar rulings. *Access Now, Inc. vs. Southwest Airlines* was dismissed in 2004 by the 11th Circuit U.S. Court of Appeals as the appeal claimed that Southwest.com was a "travel service," but did not reintroduce its possible status as a place of public accommodation under Title III of the ADA, which had been part of the original suit.[74] The dismissal acknowledged the importance of determining the relationship between the ADA and the internet, as "Title III's applicability to web sites… is a matter of first impression before this Court. Unfortunately, this case does not provide the proper vehicle for answering these questions."[75] A similar class action lawsuit was brought by the NFB against Target in 2006, alleging that its online retail offerings constituted places of public accommodation that ought to be required to be accessible under the ADA. In a report filed on behalf of the NFB, accessibility

consultant Jim Thatcher found that there were many accessibility barriers on Target.com, including the impossibility of completing a purchase without using a mouse to click the final purchase button.[76] This case, too, was ultimately settled, with Target agreeing to increase its online accessibility to blind and deaf customers. NFB would monitor Target's efforts, and provide training, and Target would aim for complete accessibility before March 2009; additionally, Target agreed to pay the original claimants out of a six million dollar fund, and to make a charitable contribution on behalf of original claimant Bruce Sexton.[77]

As a result of the lack of precedent set in these cases, enforcement of accessibility could not reliably occur through the ADA, leaving non-Federal sites in a voluntary environment, and leaving much web content inaccessible. As Chong points out, threatening major players such as AOL or Target can be effective, as they can often be convinced to implement accessibility, "But there's *thousands* of little guys out there, little organizations, who are no big enough to catch anybody's attention."[78] These countless inaccessible sites remained largely untouched by accessibility policies, producing their content with limited awareness of or attention to access by people with disabilities.

Given the persistent inaccessibility of the web, and the lack of the ADA as a tool with which to rectify it, accessibility advocates suggest that better means of enforcement are needed to move beyond voluntarism. Section 508 is currently enforced through complaint procedures operated by individual Federal agencies. This process requires people with disabilities to advocate for their own needs by reporting disability discrimination, and does not award compensatory or punitive damages (although individuals may file civil suits).[79] Unlike procurement measures, like Section 255, which are enforced directly, these enforcement mechanisms rely upon the complaints of affected parties, allowing violations that go unnoticed to

persist. As a result, a full decade after Section 508 standards went into effect, "we're still fighting with people to put alt tags on images."[80] That said, without the legal requirements, it's likely that progress would have been even more glacial, judging by the rates of inaccessibility outside the government sector. Web "guru" Andy Budd expressed a similar desire for legal enforcement, in the last instance, writing "I would love to live in a world where everybody acted in a socially responsible way. However the reality is we need to have legislation to help enforce equality in the cases where social, commercial or political pressure alone aren't enough."[81] Accessibility may share characteristics with usability, universal design, or other frameworks, but its rootedness in a question of social equality for people with disabilities means that enforceable laws may be necessary to meet its goals. The goal of accessibility is not ease of web use, but social inclusion for people with disabilities; how to meet this goal remained a source of disagreement following the first phase of accessibility policy development.

Even if Section 508 enforcement were to strengthen, the majority of web content will not be accessible until accessibility is incentivized. Laws, like the ADA, are one means of incentivizing accessibility among a diverse group of sites and developers. Stienstra and her coauthors argue, however, that regulations alone are insufficient. Rather, the production of accessibility as a global public good requires a "complex three-way dance" between regulations, ease of use of products and standards, and the market strength of people with disabilities.[82] This suggests that articulations between policy, material and technical elements, and the circumstances of end users are needed in order to promote access. The authors argue for recognition of the interconnectedness of these factors, as pursuing them individually has failed to make accessibility a taken for granted component of web development. Similarly, accessibility advocates have suggested that market-driven solutions may have some potential, if rather than

trusting to the market to serve a customer base of people with disabilities, regulations and

industry measures could work together to change the tone of accessibility. Accessibility has often

been cast in moral terms, "but the only reason that anything was ever done consistently over time

was if it was profitable."[83] Instead of requesting voluntary accessibility, platforms, distributors,

or other industry leaders could "begin to force accessibility at some level, so that developers

don't have a choice."[84] This would constitute effective self-regulation of an industry, with far

broader implications than the self-governance seen in Kennedy's analysis of elite web

developers. As to why an industry might self regulate in that way, Vanderheiden suggests that

accessibility advocates need to identify and promote ways in which accessibility makes a

company successful and profitable. He posits three ways of doing so: to make accessibility

easier, to make it rewarded (including through legal means), and to make it more expensive to

design things inaccessibly than accessibly.[85] These are all large shifts in the arguments for

accessibility, but they have the potential to make far more content accessible than did the first

round of policy documents. They offer to take the focus off of specific content entirely, by

promoting accessibility in terms that are far more contiguous with mainstream discourses of web

development and online entrepreneurship. These efforts will be considered in more detail in the

next chapter, as I return to the development of accessibility policies within quite a different

context.

Conclusion

The decade following the release of WCAG 1.0 and Section 508 standards did not see the full

incorporation of accessibility concerns in mainstream web development. Though some sites

implemented accessibility, and software companies like Macromedia made their products more

accessible, there remained countless sites that did not do so, leaving broad swaths of content

inaccessible and constraining the web browsing of people with disabilities like Clarisse,

discussed at the opening of this chapter. Accessibility policies can set goals, provide legal

benchmarks, or offer a set of best practices, but the success of accessibility as a means of

fostering access to online media comes from its widespread implementation. Without the

granular implementation of policies, those policies are of little effect on the conditions of access

for those they aim to help.

This chapter has examined some possible reasons for this persistent inaccessibility,

examining the relationship between accessibility policies and dominant ideas about creativity,

usability, voluntarism, and content on the web. In attempting to govern the form of online

content, accessibility guidelines and standards were often understood to be hampering the free

expression of creative ideas and design online. Alternately, accessibility standards were

conflated with other practices, losing their force as a means of increasing access in the interest of

a public good. In the absence of effective enforcement, accessibility advocates adopted a variety

of tactics to encourage accessibility, with mixed success. Perhaps the technological emphases of

standardistas and accessibility policymakers worked against them, as they rarely made

meaningful connections to the kinds of increasingly participatory online content that

characterized the web; in the words of Clark, many policymakers perhaps "needed to get out

more" online,[86] to see for themselves the variety of content being produced and to consider how

that content might be made accessible without seeming to threaten creativity and innovation.

Interdisciplinary, "combining and blurring design craft with engineering brilliance, therapeutic

excellence, and the broadest experiences of disabled people,"[87] seems the only way forward in

moving beyond accessibility as afterthought or accommodation and towards a more integrated

form of web design and development.

The contrasts between policy spheres and cultural spheres illustrated in this chapter

indicate the importance of not only outreach regarding accessibility policy but of direct

engagement with broad cultural attitudes regarding online media and digital technologies. Form,

it seems, cannot be meaningfully changed without at least engagement with values surrounding

content. Values surrounding "good" design, beauty, and innovation were integral to the first

decade of the web, and remain crucial. These values have not, historically or in the physical

world, encompassed disability as an inspiration for design, though Pullin and others convincingly

argue that they could do so and benefit from new sources of inspiration. Although design

concerns may often be an afterthought in designing functional systems for people with

disabilities, "it is impossible to disentangle our senses from our overall experience"[88]–the

success of accessibility is tied to form, to content, and to design. All of these components are

integral to experiences of an accessible web, and to fostering its implementation. Beauty and

utility need not be oppositional, but can inform and extend one another.

In the next chapter, I consider how these experiences with lack of implementation and

discursive conflict may have shaped the second round of accessibility policymaking, as WCAG

2.0 was developed (and released in 2008), and the Section 508 refresh began. By 2005, web

media was awash in a relentless discourse of participation, which emphasized the ability of

people with no technical expertise to not just consume, but create and share online content. I

study this environment in terms of *use*, as it highlights the variety of motivations and activities of

web users, including users with disabilities. Participation as a mark of online quality or

innovation led to an emphasis on the user and creativity, bridging usability and design concerns

of the early 2000s, and challenging accessibility policies to consider a wide range of sites,

services, and possible authors of web content.

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Chapter 5

Web (Accessibility) 2.0: Policies for Participation and Varied Uses

Jim, a white man in his late thirties, lives in an urban center and is Deaf. He has used American

Sign Language from a young age, and his primary community is also Deaf; Jim understands

deafness both as a disability and a cultural difference. While parts of his life might be easier if he

were hearing, he has found much to appreciate in life that he might not have experienced were it

not for being Deaf and becoming part of a Deaf community.

As the internet has become faster and more ubiquitous, Jim has been enthusiastic about

opportunities in online media. He knows a little HTML and has maintained a casual blog for

some time, where he posts about his job in government and his personal interests, which include

swimming and reading contemporary fiction. One of the most exciting developments for Jim and

his friends has been the rise in voice-over IP services, which make it possible to conduct free

video calls online, allowing members of his community to sign to one another and communicate

over vast differences.

Simultaneously, the quantity of online video has dramatically increased, and Jim finds that many

things he might be interested in watching are inaccessible. The rise of Web 2.0 and amateur

content creators has meant many more audiovisual materials are being shared online, but very

few of them have any kind of captions, transcript, or sign language interpreters. Jim would like

to be able to participate online more broadly, but he largely limits his online video consumption

to known accessible providers, such as Hulu.com, or to watching videos made by people within the Deaf community.

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"Broadcast yourself!" This invitation, which has appeared as a tagline on video-sharing site YouTube, was just one of many such enjoinders extolling the possibilities of "Web 2.0"[1], in which users with no technical expertise could create online content by filling out forms and/or uploading material, and companies like YouTube would take care of producing the code, hosting the content on their servers, and creating a URL that could be shared. All YouTube required was that "you" use a camera or phone to record digital video, then upload that video to their servers, where it would be encoded in a Flash video player, and hosted alongside links to related videos and structures for other users to leave comments. A preferred user position is assumed by such invitations, certainly, as many internet users may not have the ability to produce digital video, the know-how to utilize the form, or the interest in sharing their cats' habits with the world. And, of course, users with disabilities such as Jim may not be able to see, hear, or cognitively understand the videos available for viewing, let alone broadcast themselves. Between 2004 and 2010, as discourses and experiences of the web became increasingly driven by these kinds of user-generated content, policies, and practices of accessibility had to adjust as well.

The unevenness in implementation of accessibility policies discussed in the previous chapter, and the resulting uneven online environment for users with disabilities, quickly led to calls for new standards. The working group that produced WCAG 1.0 took only a very brief break before beginning work on updated recommendations, with email traffic to the WAI-GL group growing throughout the early 2000s and efforts culminating in the 2008 release of WCAG

2.0. The federal government also returned to the standards business in the years between 2002 and 2010, with the Section 508 Refresh project. To date, the Refresh has not yet gone into effect. The challenge for accessibility advocates in the early part of the twenty-first century was to find a way to update the guidelines and standards written in the late 1990s to be less reflective of that technological moment, less focused on HTML, more adaptable to new and changing technologies, and more easily testable and verifiable. Additionally, accessibility had a new industrial and cultural context to contend with, as the web industry and everyday users began to reformulate what the web could be in the wake of the dot-com crash. Dot-com start-ups that had flourished soon floundered, exorbitant stock prices plummeted, many designers and developers were out of work, and the boundless enthusiasm and faith in the transformational possibilities of the Web were eroded. Following the end of the dot-com bubble, the web industry and American culture were forced to recalibrate their expectations regarding the web's uses and effects, leading to the emergence of Web 2.0, which prioritized the building of infrastructure for user-generated content over the creation of static content for passive audiences. As more and more people blogged, Flickred, and joined Friendster, then MySpace, and then Facebook and Twitter, scholars began to see Web 2.0 as fostering a "participatory culture"[2] of "produsage"[3] and "collective intelligence,"[4] ushering in new cultural practices and reducing traditional hierarchies by breaking down barriers to entry and allowing individuals to express themselves, reach a broad audience, and collaborate more easily than ever before.

The context of Web 2.0 and participation made it imperative for accessibility advocates (and policies) to consider *use* as a variable in the online experience. It was insufficient to focus on the ability of people with disabilities to access existing content, produced by professional web developers, as had been done in the first round of policymaking. Instead, it became crucial to ask

how people used the web, for what purposes, and how people with disabilities might be enabled to become producers, as well as consumers, of online content. In studying this history through the site of use, tensions are revealed around notions of production and reception, author and audience, and technological innovation. The ability to *use* online media for a variety of purposes represented a challenge to policymakers, and resulted in the formation of more flexible accessibility goals.

This chapter examines the second round of accessibility policy development in relation to the discursive contexts of Web 2.0 and participation. Where the first round of policy development exhibited concerns about an uncertain audience, this round of policy work demonstrated a generalized concern with the increasingly blurred boundaries between on- and off-line content and document types, and the ever-expanding notion of the author in a context of broader participation. Additionally, the processes themselves had matured, and there was greater awareness that W3C guidelines and legal standards would affect one another and that divergences could cause problems for the technology and web industries, as well as for those people with disabilities who would ultimately use the online media produced in accordance with these strictures. Beginning by contextualizing Web 2.0, and discourses of participation, I move into analyses of policy processes, which exhibited many of the same promises and oversights as mainstream participatory culture. While this chapter argues that attention to use resulted in flexible policies with great potential, it is equally a caution that attention to use, without attention to inclusion, is an insufficient basis for strengthening the democratic and participatory values of the web.

<u>The Rise of Web 2.0 and Participatory Culture</u>

"Web 2.0" refers to shifts in the forms and business models of online sites and services following the dot-com bust. Web 2.0 is now commonly used to refer to services that foster self-publishing and collaboration (blogs, wikis), encourage folksonomic forms of organization (tagging or user-created metadata as seen in Flickr), and social networking sites on which individuals' connections to others form the value of the network. It implicitly contrasts web sites and services in the early 2000s from their 1990s counterparts, establishing a new context in which users are central to the content production and monetization of online media. In the first elaboration of "Web 2.0," Tim O'Reilly suggests that these services feature "an implicit 'architecture of participation,' a built-in ethic of cooperation, in which the service acts primarily as an intelligent broker, connecting the edges to each other and harnessing the power of the users themselves."[5] Here, value for a web company was created through its ability to encourage users to share information or creative works, and then to utilize this content and the connections between users to create added value and keep their users coming back. O'Reilly argued that this creation of value from information is the result of harnessing collective intelligence, growing a service with the growth of user input. The term stems from Pierre Lévy's 1997 treatise of the same name, in which he hypothesizes that networked technology could facilitate the rise of a universal, shared intelligence to which anyone has the right to contribute and from which anyone can draw, allowing users to work collaboratively more easily than ever before. [6]

This notion of collective intelligence has been adopted not just by O'Reilly, but also in academic literatures. For instance, it is one of the many new literacies seen as crucial to social, cultural and economic participation in Henry Jenkins et al's "Confronting the Challenges of a Participatory Culture." These authors define participatory culture as having "low barriers to

creative expression and civic engagement, strong support for creating and sharing one's creations, and some type of informal mentorship,"[7] and treat it as a new form of cultural, economic and political activity. Jenkins' 2006 *Convergence Culture* applies these ideas, and Lévy's work, to entertainment and political media. He focuses on the way that convergence–the flow of media across platforms, the cooperation between media industries, and migratory audiences–is altering relationships between media consumers and producers.[8] Additionally, Jenkins describes how American citizens might use their experiences with participatory media as a foundation for new forms of political activism, including videos, online tools, information sharing and collaborative practices.[9] Axel Bruns' work on "produsage" also applies Lévy to concrete case studies and attempts to expand understandings of the cultural impact of participatory culture by focusing on the blending of the role of the online user and the producer along a continuum of produsage activities.[10]

The embrace of Web 2.0 and ideas of participatory culture flourished throughout the decade, as many sites and services based around notions of participation matured to near-ubiquity, and took on increasing political and economic roles, in addition to serving as social and cultural touchstones. Five years after the initial glut of Web 2.0 enthusiasm, O'Reilly and John Battelle suggested that we were approaching "web squared," in which the trends that characterize Web 2.0 are growing exponentially. They exclaimed that "If we are going to solve the world's most pressing problems, we must put the power of the Web to work–its technologies, its business models, and perhaps most importantly, its philosophies of openness, collective intelligence and transparency [….] It's time for the Web to engage the real world. Web meets World–that's Web Squared."[11] The Web certainly has engaged the world; through Twitter-driven political campaigns, socially-targeted advertising campaigns, and the integration of geolocative services,

the boundaries between online and offline life may be experienced as increasingly blurred for many wired (or wireless) Americans.

A high-profile implementation of what could be called Web Squared in the United States occurred during Barack Obama's presidential campaign, as web tools were used to integrate real-time information about voters at the polls with the phone lists volunteers were using for election day outreach.[12] The real world of democratic government was integrated with web-based tools that allowed more effective and efficient political participation on the ground. Following the election, Obama retained the technological savvy of his campaign, expanding the White House website, launching blogs for major initiatives such as the National Broadband Plan, and announcing a dedication to a more open, transparent government. In a 2009 memo from Peter Orszag, open government was defined as relying on "principles of transparency, participation, and collaboration."[13] Recalling O'Reilly's emphases on openness, collective intelligence, and transparency, the governmental principles prioritize the sharing of information, but they also use the language of *participation*. This is a key shift, as the language of participation offers an emphasis on individual contributions and agency that is essential when talking about the role of citizens in a participatory democracy. Though collective intelligence is obviously still important, enshrined in "collaboration," which references intergovernmental and public-private partnerships, participation indicates an interest in the ability of individuals to access and contribute to governmental processes. Orszag's memo goes on to call on agencies of the federal government to "increase opportunities for public participation in and feedback on the agency's core mission activities," including offering websites and new feedback mechanisms for public engagement.[14]

These pundits, scholars, government officials, and those building on their work offer an attractive vision of a techno-mediated future—or even present—in which increased access to cultural production, political participation, and social collaboration produces more just, egalitarian forms of culture. This is a world in which anyone can potentially be heard, transform the status quo, and build upon the work of others' outside of longstanding social hierarchies. It recalls the notion of the ideal public sphere and Papacharissi's characterization of the internet as "several culturally fragmented cyberspheres" within a shared virtual space.[15] Participatory culture, then, could facilitate the formation of these separate spheres and may also encourage their connection through links, social media integration, and social collaboration.[16] Expanding access to cultural and political voice is a worthy goal, and the expansions of possible publics via participatory culture is enticing, as is the expansion of public values such as egalitarianism, meritocracy, and diversity.

Despite the appealing, inclusive rhetoric of Web 2.0, collective intelligence, and participatory culture, these concepts offer little practical attention to questions of digital divides, access requirements, or the differences of identity and social location that users bring with them to their participation in these structures and cultures. The limitations of old hardware, slow connections, and unaffordable ISPs are ignored, as are any challenges that stem from bodily differences such as age, illness, or disability. Such oversights take on particular importance in light of the extension of discourses of Web 2.0 and participation to the political sphere. In this arena, access to the information and services that are fundamental to citizenship must be understood as a priority. Lévy ignores the possibility of different types of users, in different social and economic circumstances and with different motivations for participation, and allows a preferred user position to emerge that is white, wealthy, Western, male, and able-bodied. Though

there are small exceptions to this image, particularly in Jenkins' attention to youth and female

fans and in Bruns' calls for future research, the bulk of this literature focuses on a fairly narrow,

seemingly homogenous population and pays little attention to questions of users' access to

technology, skills, and motivations. These critiques mirror the objections of José van Dijk and

David Nieborg concerning manifestos on participatory culture, including *Convergence Culture*

and Tapscott & Williams' *Wikinomics*. Their critiques center on the broad descriptions and

flattened distinctions between forms of participation, forms of technology, and forms of value

creation, as these works often assume that all users are interested in collaboration for the same,

collectivist reasons, and flattens the distinctions between user-created spaces for collaboration

and those online spaces created by existing corporations to create and take advantage of that

collaboration.[17]

The unmarked subject/user of participatory culture mirrors the relentless focus on early

adopters within the online media industry and the maintenance of a rigid preferred user position.

Early adopters, those with the technological and financial abilities to stay on top of the latest

innovations in online services and devices, represent a cutting edge market and first audience for

new sites and services.[18] O'Reilly, and later O'Reilly and Battelle, were explicitly writing to a

savvy audience of web and software developers, many of whom were themselves early adopters,

discussing cutting-edge trends and aiming to provide possible business models for success in the

industry. This early adopter figure is ostensibly unmarked by identity categories, reinforcing

hegemonic norms even as this material calls for inclusion. Thus, it is unsurprising, if lamentable,

that questions of access, equity, and the materiality of the tools themselves go largely

unaddressed, as do possibilities for alternative uses of new technology. Through the discursive

maintenance of a single preferred user position within industry treatises like O'Reilly's, and the

limited attention to difference even in academic literatures, the full potential of Web 2.0 and participation to strengthen public values is eroded, threatening to only further empower the most privileged.

Given the celebratory rhetoric of Web 2.0 and participatory culture regarding access, creativity and political engagement, the exclusion of difference from these accounts represents a major oversight. If participatory culture only facilitates the participation of those who are already privileged, then its progressive potential is unrealized, if not transformed into a regressive affirmation of existing power structures. Furthermore, if "participatory culture is being co-created every day, by vloggers, marketers, artists, audiences, lawyers, designers, critics, educators" and others,[19] then the barriers to technological and cultural access, including barriers of disability, must be addressed so that such co-creation does not occur without the input of (or against the interests of) less powerful populations. The necessity of understanding diverse users, particularly non-normative users, thus becomes a priority for extending this body of work.

Participation, Use, and "You"

The growth of Web 2.0 sites and services was accompanied by a range of advertising, news coverage, and other popular representations of what this new online era would entail. I consider these sources, as I considered their 1990s counterparts in Chapter 2, in order to demonstrate the prevalence of a rhetoric of participation that adopted a second person address in order to shift attention from technologies' content to their uses. This marks a crucial shift in social and cultural context; where the dominant discourses of disability and technology in the 1990s emphasized easy transformations by way of technological change, twenty-first century discourses of participation highlighted the possible uses of technology but made few promises about the

outcomes. Without the emphasis on a culturally, politically, or economically transformed society, these discourses largely abandoned imagery of social inclusion, replacing it with highly individualized representations. In its focus on the use of online media, the discourse of participation upheld a preferred user position as inhabited by a privileged, unmarked figure with agency, technological competence, and unlimited potential. This is seen in the popular rhetoric and representations of such technologies, as well as in the distinctly different coverage of disability and technology during the same period. Where the dominant discourse of participation suggested individual empowerment, discussions of disability and technology demonstrated a distance between the normative user and those outside of the norm.

The reification of a preferred user position within Web 2.0 technologies and models of participatory culture, and its erasure of embodied and other differences into a ghostly normative construct, is best seen in the way that the discourse of participation has depended on the rhetoric of "you." The direct, second-person address of "you" rings of familiarity and hails masses of people in language that emphasizes individuality. Imaginatively, we can each be the subject of this address, which takes aim at individual identities and desires, suggesting an ability to fulfill unique needs and even to set "you" apart from the masses of others. The use of "you" seems a natural fit with discourses of participation and the rise of user-generated content, as the implication, both industrially and culturally, is that these sites and services are personalized, individual, unique, and easy to use. The "you" hails readers and viewers as potential collaborators in the fast-changing online environment, allows us to flatter ourselves as creative producers, and flattens the vast differences in how we do and do not create, consume, and share online.

As early as 2005, on the heels of Web 2.0 declarations, Steven Johnson's popular book *Everything Bad is Good For You* discussed the quick embrace of "participatory electronic media–from email to hypertext to instant messages and blogging."[20] He then extends this statement to a shared experience, claiming that "the rise of the Internet has challenged our minds in three fundamental and related ways: by virtue of being participatory, by forcing users to learn new interfaces, and by creating new channels for social interaction."[21] Though not a use of the second-person address, already there is a collectivism to the rhetoric of online experience in this era. "Our" minds–"yours" and "mine"–are positioned as challenged in the same ways, equally, without attention to differences in individuals' access to and experiences of the internet.

Similarly, in perhaps the best-known popular use of "you" in these discourses, *TIME Magazine*'s 2006 Person of the Year was "You!" The cover featured a desktop computer, whose screen was a reflective panel, showing a reader's face within the tableau. Inside, the story reiterated the familiar words regarding participation, as the changes online were:

> a story about community and collaboration on a scale never seen before. It's about the cosmic compendium of knowledge Wikipedia and the million-channel people's network YouTube and the online metropolis MySpace. It's about the many wresting power from the few and helping one another for nothing and how that will not only change the world, but also change the way the world changes.[22]

Collaboration, social media, and the collapse of hierarchies were once again highlighted as significant not only to online media and practices, but potentially politically and globally important offline as well. This was rephrased, and the magazine's decision explained, as it concluded that "for seizing the reins of the global media, for founding and framing the new digital democracy, for working for nothing and beating the pros at their own game, TIME's

Person of the Year for 2006 is you."[23] You were celebrated for your participation, your contributions to these shifts; regardless of the degree to which you, as a particular individual, may have participated. The "you" here once again flattened differences of experience and embodiment; the subject/user that emerges throughout the course of the article is the ideal subject of participatory culture. The incorporation of these rhetorics into a high-profile print magazine indicated a mainstreaming of participation and "you"–and "your" many uses of the Web–beyond any technology industry or computer culture. Such coverage furthered the imaginative effects of participation by offering the preferred user position of participation to any number of readers seeking to take up these new technologically-enabled identities.

That same idealized subject was hailed by many Web 2.0 sites and services, themselves. In logos, names, and taglines, repeated invocations of what "you" can do with social media— such as YouTube's "Broadcast Yourself" and Flickr greetings that exclaimed "Hej! Now you know how to say hello in Swedish!"—welcomed an active, creative user. These greetings' use of the second-person address suggested that internet media was both immediate and fully under one's personal, unmediated control. The use of direct address encouraged a more personal engagement, a friendly relationship with media, and thus conveyed a kind of liveness and immediacy, which was augmented by the interactive potential of online and digital media.[24]

Additionally, through the "you," users' agency was highlighted, and the inevitable constraints of hardware, software, and cultural contexts were elided. Here, web sites themselves upheld a particular version of participation articulated by Deuze as the reconstitution of media users as "active agents in the process of meaning-making."[25] Certainly, digital or participatory culture was not the first in which users, viewers, or audiences took active meaning-making positions, but the reiteration of the active online user in websites, popular representations, and

academic theory had the effect of producing difference and distancing online activities from earlier forms of media. Direct address and invitations to action strongly reinforced this difference and the subject position of the active internet user. This upheld the preferred user position as active and distanced it from assumptions about viewers of other media (and even passive web surfers), who are regularly constructed as passive, as well as divorcing the user position from the experiences of a body as it uses technology.[26]

So, who were "you?" You, in these examples, were addressed in generalities that ignored differences in embodiment or social location, and may even have indicated a default user position that is white, male, and wealthy. You, similarly, were an active agent, creating and participating, never consuming or observing. Furthermore, you were assumed to be technologically empowered; you had the necessary hardware, software, knowledge, time, and interest to jump in to new online offerings. Additionally, you were assumed to be capable of using default structures and interfaces; underlying any appeal to a user's autonomy and control is the assumption that they can manipulate the options given. On inaccessible websites, or for users of assistive technology, some of these options may be difficult or impossible for "you" to implement. When a 2010 iPad ad proclaimed that "you already know how to use it," it was certainly not referring to the extensive accessibility features for visually-impaired users, which must be appropriately configured, or the applications which enable its use as a letter board for people with communication-related disabilities. "You" already knew how to use it only if you were using it in the default ways demonstrated in the ad, and for the purposes that were foregrounded.

The centrality of *use* to the discourse of participation as expressed via "you" provides a useful way of prying apart the general, yet individualized hails of a preferred user positions.

When particular kinds of use, or the mechanics of use, are considered, the hollow nature of this unitary subject position is revealed; it is uninhabitable in its default state, and is in fact subject to extensive negotiation by a wide variety of users with a wide variety of goals. The inattention to difference in discourses of participation, brought to the fore through the use of "you," has meant that those understood in terms of difference or Otherness are addressed outside of this discourse, through forms of address and topics of discussion that foreground their particularity. Popular press coverage of disability and technology during the same period lacks the connection to creativity, collaboration, and possible political effects that characterized both 1990s discourses (discussed in Chapter 2) and twenty-first century discourses of participation. People with disabilities were not positioned as participants, as "you" or "us," but as passive beneficiaries of others' technological creations, as a special population—as "them."

The vast majority of popular coverage of issues related to disability and technology conveyed this address subtly by describing the experiences of people with disabilities in terms appropriate for a non-disabled audience who was not familiar with these concerns. By framing stories as human interest pieces about experiences assumed to be unfamiliar to their readers, many bloggers and reporters created a situation in which they, and their audience, were aligned in observation of those who are different. Thus, a *Computerworld* article titled "Blind users still struggle with 'maddening' computing obstacles," foregrounded the particular barriers, assistive technologies, and legal structures surrounding blind users' use of the internet.[27] Likely familiar to internet users who were blind or visually impaired, this information is presented as new for an audience that had not previously considered accessibility for people with disabilities. Similarly, the blog Gizmodo published a piece called "Giz Explains: How Blind People See the Internet," opening with a description of "normal" use of the site and the question "what happens when a

layout becomes words?"[28] Educational pieces like these certainly had value in bringing concerns about accessibility, disability, and web media to the attention of larger audiences. However, they remained totally disconnected from the discourse of participation, and often positioned internet users with disabilities in opposition to the normative "you."

Where the preferred user of the participation discourse was active, creative, and individual, popular press coverage of people with disabilities' use of the internet constructed a subject who was passive, consumptive, and collective. Many stories focused on hurdles for people with disabilities, then interviewed technological specialists or policy advocates about solutions to these problems, giving little voice to those users who had these experiences and positioning them as recipients of various forms of aid.[29] Similarly, as when Gizmodo expressed concern that mobile applications might not be made accessible to blind users, people with disabilities were positioned as consumers and end users of hardware and software, not as potential producers of content and applications, rhetorically cutting them off from potential uses of technology. Finally, news pieces tended to specifically categorize people with disabilities, discussing problems that affected this group, and limited their focus on individual needs or activities. This, on occasion, further distanced discussions of disability from discourses of participation, as in a *New York Times* article that created a remarkable sense of distance, stating that, "For many people, social networks are a place for idle chatter about what they made for dinner or sharing cute pictures of their pets. But for people living with chronic diseases or disabilities, they play a more vital role."[30] Here, the author distinguished "people living with chronic diseases or disabilities" from "many people," putting a specific categorization in opposition to a generality, and potentially reinforcing the Othering of people with disabilities. Additionally, the false dichotomy of the statement is remarkable, as certainly many able-bodied

people found the internet playing a vital role in their lives, and many people with disabilities

happily shared pictures of their pets and socialize; by suggesting otherwise, such articles further

distanced people with disabilities from the cultural activities associated with online participation.

The discourse of participation, for all its appeal, did not easily incorporate differences of

race, gender, age, ability, or other forms of identity or social location. Because of its broad

invitations to action, participation is at heart a generalized discourse that struggles under the

weight of particularities. Thus, the "you" of participation seemed not to include people with

disabilities, especially when contrasted with popular coverage of disability and the internet,

which is treated as a distinct topic, set apart from normal concerns. If, in an era of participation,

people with disabilities were to be included, this positioning of them as simple consumers could

not remain unchallenged. Participation, and the Web 2.0 sites and services that support it,

required that people take up creative and productive roles, as well as engage in interactive forms

of socialization and creation. Thus, it was crucial that in this cultural context, accessibility

policies consider the expanding needs for web users with disabilities, as well as the rapid pace of

technological change on the participatory web.

I turn now to the ways in which accessibility policy attempted to meet these challenges.

My focus is on the particular problems caused by an evolving online environment, in which users

had more ability to choose and complete more online activities than ever before. Recalling the

brochureware[31] that characterized the web during the first round of accessibility policymaking,

described in Chapter 3, it is clear that dynamic web sites, Web 2.0, and social media represented

a sea change in how online media was created, experienced, and *used*. Both the process leading

to WCAG 2.0 and the initial steps of the Section 508 Refresh had to contend with this already

quite different online environment, the cultural context of participation, and the likelihood that

these changes would only intensify. Through examination of these processes in relation to use, it becomes clear that the underlying principles of participation— inclusion, creation, collaboration—came to characterize the very processes of accessibility policy, and the struggles with incorporating disability into participatory spaces extended to the policymaking sphere.

WCAG 2.0–Authorship and Principles for Accessibility

WCAG 1.0 "was almost out of date by the time it was published," as seen in the challenges of implementation discussed in Chapter 4. Quickly, Web 2.0 services and related applications blurred the distinctions between web content, client applications, and desktop publishing, as well as between web developers or computer scientists and more casual authors of online content. The WCAG 2.0 process faced the difficulty of finding a balance between the needs of people with disabilities, the changing capabilities of new technologies, and the diversity of expertise among authors of web content. These factors contributed to debates about the guidelines' direction, and the maturation of W3C processes and the group's emphasis on consensus meant that these debates were thoroughly explored. As a result, the WCAG 2.0 process was lengthy, culminating in its release as a W3C recommendation on December 11, 2008.

First, an overview of the W3C guideline process, which at times became controversial, is required. The W3C is a membership organization, with a variety of international companies, non-profit organizations and other entities contributing. It has four subareas, including the Web Accessibility Initiative (WAI), and each "domain" houses several working groups, such as the GL WG.[32] The process within individual working groups involves a high degree of openness, with email archives, multiple versions of documents, regular calls for public review and comments on drafts, explanatory documents, and contact information made generally available

to the public. The working group's email list (GL) is not restricted, and minutes of the working group are posted there. Some comment processing pages, however, are restricted to members during discussion to avoid miscommunication before completion of deliberations but all results are posted immediately on public locations. Generally, any W3C member can ask to be represented on a working group, and their representative will be put on that group. Working groups may also ask others, often participants in the public email listservs, to become "invited experts," filling out the working group with their expertise. The chairs of working groups are chosen by the W3C; Gregg Vanderheiden was asked to stay as a chair between WCAG 1.0 and 2.0 in order to provide continuity.[33] Those people listed as editors on final documents are similarly recruited, often because they are reliable participants and are believed to have the time and funding to take on the quantity of work involved in writing the document. The working group requires a commitment of at least 4 hours every week, and often runs to 10 times that for some members during some periods. The result of this structure is a mix of perspectives and open communication within a fairly rigid structure.

Further complicating this collaboration was the decision to operate via consensus, rather than through voting or similar mechanisms. The guidelines were not simply written by the editors, but were understood to be captured by editors holding a "pen for the group."[34] In fact, the prioritization of consensus within this working group was such that in its re-chartering in 2005, under a point about voting procedures, the new charter stated that "the primary means of decision making in the WCAG is consensus."[35] Careful consensus building both in the group and outside of it resulted in a full-consensus standard, without any of the typical formal objections laying out opposition to the final document. Vanderheiden has argued that the importance of consensus lies in its inclusiveness; whereas votes would always result in losing sides, "if we

could work together and always try to find common ground, then when we got to an issue later, the other way, people were much more willing to try to find common ground."[36] However, such an approach required participants to act in good faith, advocating not just for those provisions that they *wanted*, but accepting those elements that they could "live with."

Consensus and openness in the process recall the centrality of inclusion and sharing to mainstream discourses of participation and Web 2.0 during this era, but they proved difficult within the policymaking process. The revised guidelines initially attempted to include a range of perspectives by further codifying accessibility measures. In attempting to include a greater level of detail, increased measures for cognitive disability, and "future-proof" technological writing, initial drafts of WCAG 2.0 were widely criticized for their opacity and inability to clearly communicate important information to a diverse audience.[37] The difficulty of communicating to a diverse audience of varied authors of web content was increased in the early twenty-first century precisely because it could no longer be assumed that the creators of web pages, and those reading the standards, were professional developers. In the 1990s, online authorship often entailed at least a basic familiarity with HTML or other coding languages; these authors were also web developers. Therefore, while WCAG 1.0 exhibited confusion regarding its audience, it displayed a confidence that it was addressing a technologically literate group. With the rise of what-you-see-is-what-you-get (WYSIWYG) software and automated content creation such as that seen in Web 2.0 sites in which users simply fill out a form, the need for such knowledge decreased even as opportunities for new uses of the web increased. These new "produsers" often were not deeply technologically literate. Writing WCAG 2.0, authors were understood to be anyone creating web content, but that group had expanded exponentially, including managers and policy makers as well as "web content authors" with a wide variety of skills, and web

developers who support authors by providing systems that ease content development.[38] In fact, the breadth of those who use the web for producing content may be even wider, incorporating jobs such as "webmaster, designer, editor, producer, multimedia specialist, programmer, developer, writer, and assistant" as well as average users.[39]

Critics of the drafts of WCAG 2.0 found that the detailed, technical document was daunting for this diverse audience of professional and casual authors. Brys and Vanderbauwhede analyzed the November 2004 draft in light of communication challenges, and found that the guidelines were too technical, too grounded in English-language concerns, and insufficiently targeted to those with little prior technical expertise.[40] Similarly, Adam and Kreps' analysis of discourses of access for people with disabilities found that the web accessibility discourse was "dauntingly technical,"[41] and focused on the creation of standards to the exclusion of concerns with the digital divide or social construction of disability. In fact, interviews with practitioners have revealed that WCAG in all its versions has been subject to criticism concerning its "length […] lack of clarity, obtuse language, and convoluted organization."[42] These communication difficulties may have made WCAG documents "completely overwhelming" for less expert audiences, leading to abandonment of accessibility measures.[43]

The difficulty of operating within the structures of the W3C, honoring consensus, and communicating complex ideas to an unpredictable audience of web authors led to some dissatisfaction within the working group. Joe Clark was vocal about his objections, and following his departure as an invited expert, he remained on the public email list, raising objections and sending in comments on draft documents, and he later went public with his critiques. "To Hell With WCAG 2.0," was published in 2006 on *A List Apart*, a blog dedicated to expert-level, standards-compliant web development that was widely read among a highly

influential, expert audience. Clark called the Working Draft of WCAG 2.0 "nearly impossible for

a working standards-compliant developer to understand. WCAG 2 backtracks on basics of

responsible web development that are well accepted by standardistas. WCAG 2 is not enough of

an improvement and was not worth the wait."[44] Another critique in "To Hell with WCAG 2.0"

was aimed at the open process of WCAG and its attempts to entirely rewrite accessibility

standards, and was followed by a proposal that an alternate, expert body be formed.

The response from the WCAG working group was not to publicly defend their work, but

to incorporate Clark's critiques as additional data points to be worked out through an open,

consensus-driven process. Ultimately, "To Hell with WCAG 2.0" would strongly influence the

final version of WCAG 2.0, as Clark's critiques were taken up along with the public comments

on the Last Call Working Draft released in 2006. Each comment on the draft was processed

individually, possible solutions were discussed by the full group, and the commenters were

contacted with proposed resolutions to their issues, at which point they could object and the

process began again.

Clark's eventual satisfaction with WCAG 2.0 is perhaps the strongest indicator of the

value of this relatively open, consensus-driven process. Though no representative of the W3C or

WCAG working group ever responded directly to his article, by treating all of his critiques as

public comments and incorporating them into the process "they fixed everything. They fixed

giant errors, they fixed small errors, they fixed terminology, they fixed everything."[45] In an email

to the group, sent on the day that WCAG 2.0 became a W3C recommendation, Clark wrote that

"Without the publication of that article […] you would have forged right ahead with the total

piece of shit you had published up to that point. But–and I quite commend you for this–you took

the advice and fixed the standard."[46] Though not a part of official process, the effect of Clark's article in combination with the working group's structures resulted in a stronger standard.

Two final factors in the development of WCAG 2.0 to accommodate a climate of diverse web use were the maturation of the W3C's process, and the increased experience and expertise of those working on the guidelines. First, an additional stage had been added to the W3C standards process. Called Candidate Recommendation, this stage was placed between Last Call Working Draft and Proposed Recommendation. In this stage, "an evaluation is taken of the feasibility of the proposals based upon predictions of the implementation experience,"[47] so that any potential problems can be found and addressed before the finalization of the standard. This stage, had it existed in 1999, would likely have stalled the release of WCAG 1.0, as difficulties in implementation would have been seen and addressed. WCAG 2.0 entered Candidate Recommendation on April 30, 2008, moved to Proposed Recommendation on November 3, 2008, and became a W3C Recommendation on December 11, 2008. This process allowed the group to wrestle with the more difficult provisions and make final decisions based on experiences of implementation and actual user testing, rather than on theories of best practice.

Secondly, with experience came dissatisfaction with the technological specificity of WCAG 1.0 and its rough organization. In 2003, following a suggestion from Gregg Vanderheiden and Ben Caldwell at the CSUN conference, the working group shifted toward a principle-based structure. Vanderheiden and Caldwell proposed that "Everybody needs to be able to see the content, everybody needs to be able to operate it, everybody needs to be able to understand it. This is not a disability thing."[48] However, people with disabilities do need to use assistive technology and/or to have flexible interfaces in order to do such things, and thus needed content to be robust, or flexible, enough to be used with atypical hardware and software.

Taken together, this became a set of four principles—Perceivable, Operable, Understandable, and Robust—that guided the final organization and phrasing of the guidelines published in WCAG 2.0.

The combination of principle-based guidelines and an implementation stage, as well as the tireless building of consensus, resulted in much more comprehensible and flexible guidelines than those seen in WCAG 1.0, or in earlier drafts of WCAG 2.0. As an example, the guideline concerning alternate text retained its meaning but was vastly simplified in form. Alternate text, or alt text, is simply a textual description of an image that conveys the image's content. For instance, alt text of a lolcat might say something like "cat looking really surprised and unhappy, and the text says 'DO NOT WANT!'"[49] In WCAG 1.0, alternate text was covered in Checkpoint 1.1 under Guideline 1; each guideline included a set of checkpoints explaining its application, and checkpoints were prioritized as Priority 1, 2, and 3.[50] Checkpoint 1.1 read, in part, "Provide a text equivalent for every non-text element," and was followed by specific examples of implementation.[51] Alternate text in WCAG 2.0 was placed under Principle 1 (Perceivable), which requires that "information and user interface components must be presentable to users in ways they can perceive."[52] The difference between a guideline and a principle is made clear here, as WCAG 1.0 emphasized the desired *action* and WCAG 2.0 emphasizes the desired *result*In WCAG 2.0, the principles were followed by more specific guidelines each with testable success criteria. Clear definitions were provided for each term and each success criteria was linked to an "Understanding" and "How to Meet" documents that further explained how to achieve the desired results. Alternate text was covered by Guideline 1.1 in WCAG 2.0, which suggested that developers "Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols or simpler language."[53] Though

longer than its WCAG 1.0 counterpart, this statement was quite a bit clearer, explaining the

needs that motivate the guideline and offering options outside of the main document to gather

more information. This separation of goals from the specific ways in which they should be met

resulted in a more flexible set of guidelines, which could evolve with new technologies and

changing capabilities and uses of the web. It may also have had the effect of making the

document more understandable by a wider audience, as the principles could be taken up and

reconfigured for various audiences, as in Glenda Watson Hyatt's *Blog Accessibility* materials,

which explain accessibility measures using POUR for the specific audience of casual bloggers.

To return to the example of alt text, under "Images," the checklist simply reminds bloggers to

"Add an alternative text (the null or empty alt text may be appropriate)" and to "Add a title

(optional)."[54]

Throughout this short history of WCAG 2.0, participatory culture and Web 2.0 are

largely unspoken, yet the underlying values seem to align closely. The WCAG 2.0 process

involved extensive collaboration in its openness and consensus-building, and the very goal of

fostering access for new audiences recalls the breaking down of barriers to content creation

discussed by scholars in participatory culture or collective intelligence. Even the four principles

of WCAG 2.0 (POUR) speak to the web industry's interest in building Web 2.0 sites that can be

understood and utilized by diverse users in diverse circumstances. This alignment in ontological

principles has not, in itself, been sufficient to result in the widespread implementation of web

accessibility, but web accessibility did improve and gain visibility following WCAG 1.0. More

importantly, these similarities and the principle-based guidelines uphold public values consistent

with the social justice goals of accessibility for people with disabilities. As Catherine Easton has

argued, the broad influence of W3C guidelines means that its processes "should be based upon

principles of accountability, openness and transparency."[55] To the degree that the WCAG 2.0 process displayed these values, it aligned with important cultural discourses and public values, and created a final product that allowed for greater flexibility in interpretation and implementation that may foster accessible web development among a variety of web sites, services, uses, and users. Furthermore, the high profile of WCAG 2.0 within technical circles led to its influence on other web accessibility policies, including the Section 508 Refresh, potentially extending participatory values to legal implementations of accessibility.

The 508 Refresh–Authorship and Harmonization

Like the WCAG 1.0 guidelines, the Section 508 standards were quickly found to be insufficient for the technological inclusion of people with disabilities in federal agencies' work. However, the structure of the Access Board required that standards work cease following their publication. Though ancillary materials were produced, and many government officials participated in the WCAG 2.0 process, the standards themselves did not begin revision until the Access Board began recruitment for the Telecommunications and Electronic and Information Technologies Advisory Committee (TEITAC), which worked from late 2006 to April 2008 in order to produce recommendations for revised standards. This committee overlapped with the release of WCAG 2.0 and involved many of the same participants. Unsurprisingly, it dealt with similar concerns about the varied uses of twenty-first century technologies and the expansion of authorship, while also attempting to harmonize with WCAG 2.0 in the interest of producing substantively similar accessibility policies and thus increasing their implementation.

Again, a note on procedures is useful to begin, particularly as the Section 508 Refresh has not yet, as of spring 2012, led to the implementation of new standards. TEITAC was convened

by the Access Board to provide guidance on "revisions and updates to accessibility guidelines for telecommunications products and accessibility standards for electronic and information technology."[56] The Access Board itself is a small organization with fewer than 25 staff members, a 25-person board make up of Presidential appointees and representatives from federal agencies, and insufficient technical expertise to carry out its rulemakings in isolation. Having been given a mandate by Congress to write guidelines and standards, the Board has the power to convene Advisory Committees to advise its decisions. In convening TEITAC, the Access Board called for applications from organizations with interests in telecommunications, computer, and online accessibility; the committee was limited, and drawn from these applications, while meetings and subcommittees were open to the public. The opportunity to participate in TEITAC was welcomed by a variety of stakeholders, with industry, advocacy, assistive technology, and international representatives applying to the process. The revision of legally binding standards offered a rare opportunity to influence the future of technology policy in the United States and potentially globally, as the move toward harmonization of standards suggested that forthcoming European regulations could draw upon 508 standards.

To carry out the work of TEITAC, public subcommittees were formed, which included General Interface Accessibility, Web and Software, Telecommunications, Audio Video, Self contained/closed, Desktops/Portable, Sub-part A, and Documentation and technical support, representing an initial division of labor. Web-related standards were dealt with primarily in the web and software subcommittee, with some issues taken up in general interface accessibility, as well. The openness of subcommittees meant that even more interested parties became involved; the web and software subcommittee, for instance, had 82 interested members on its email list,[57] potentially benefiting from a deep collective intelligence among interested parties not officially

part of the committee. Next, subcommittees determined their leadership, choosing chairs whose roles would be more those of "facilitators" or "editors" of a consensus-based process.[58] In the Operating Protocols detailed in the TEITAC report, the committee was encouraged to work "in a spirit of collegiality and consensus" and to "strive to find common ground and articulate it in its recommendations."[59] Consensus, as in the case of WCAG 2.0, entailed looking for solutions that members could live with, even if they did not have their full support. In the case of TEITAC, there were a number of issues on which consensus could not be reached, which were detailed following the committee's recommendations, including divergent perspectives there, as well as within minority reports.

Throughout the TEITAC process, and in its final report, there was a strong concern about the changing nature of web content, which now encompassed far more potential uses than it had when the standards were initially developed. In many ways, these changes and blurred technological boundaries recalled the shifts brought about in Web 2.0 or participatory culture discourses, as web technologies converged and their uses increasingly both diversified and overlapped. However, in the context of TEITAC, these were not simply cause for celebration, but challenging shifts to the way in which legally binding regulations could be created. The report stated that the existing standards referenced product types such as web, software, and telecommunications, but that since then, "many of these technologies have evolved and many of their various functions have converged and overlapped."[60] Of particular concern were documents attached to email; it was unclear whether this should be considered web content or fall under other provisions.[61] This opened the door to extensive considerations of content and authorship, reflecting ongoing concerns about the multiple uses of these technologies and their broad user bases.

Where WCAG 2.0 wrestled with authorship shifting to an increasingly diverse group of professionals and amateurs, Section 508 had to address a very specific audience–federal employees involved in producing content, many of whom had very little technical background. This meant that 508 standards had to reach out not only to federal agencies' use of "scheduling software, custom software, mainstream software[…] it applies to all kinds of web content obviously […] but just people typing up documents!"[62] Its implementation required discussing everyday content producers, not just developers, or producers of software packages and web applications. This led to a number of disagreements, especially between advocates who wanted to build robust requirements and industry and government representatives who were aware of the limitations in dealing with content. No matter how accessible a software package might have been, there seemed to be no way to guarantee that the content produced through that software would also be accessible.[63] This came up often within the web and software subcommittee emails, which asked "who is the author and thus who carries the responsibility for ensuring the content meets the provision,"[64] and suggested that "some of the responsibility will always fall to the author."[65] Suggestions included merging standards for web and software, or creating separate provisions for content authors who were not programmers.[66] Ultimately, the report states that "instead of attempting to define the difference, for example, between "software" and a "web application," provisions are organized by how the products are constructed and used,"[67] and detailed the difficulties experienced by non-users in implementing the first 508 standards.[68] This focus on relatively inexpert authors, confronted with a range of technologies and potential uses, meant that the communication challenges experienced in the WCAG 2.0 process also characterized the TEITAC process.

A final challenge for TEITAC was the need for harmonization, or "the adoption of specific accessibility standards and guidelines across as many jurisdictions and standards bodies as feasible."[69] Such harmonization was believed to create a clear environment for product development and use, increasing economic efficiencies for industry and producing more reliable accessibility experiences for users. With WCAG 2.0 moving into its final stages, it was the primary reference for 508 harmonization. The web and software subcommittee moved through the original 508 standards to see what could be preserved and what ought to change, and then looked to WCAG 2.0 to see what could be taken from there. TEITAC co-chair Curtis Chong recalled that, "To the extent that we reasonably could, we tried to get as close to what we thought the WCAG 2. 0 was going to do so that we wouldn't have to make new things."[70] WCAG 2.0 itself had also worked towards harmonization with an awareness that its guidelines could form the basis of international policies. This symmetry, and the overlap in personnel, led to fairly parallel processes of revision. Additional, though less central, targets of harmonization included the International Organization for Standardization's standards related to software accessibility and aids for people disabilities, the Japanese "Accessibility Guideline for Office Equipment," and the Nordic Standards for Accessibility. Ultimately, because WCAG 2.0 was not yet a W3C Recommendation, the subcommittee and later TEITAC as a whole would recommend not simply adopting it, but incorporating it wherever possible.[71]   However, in their individual comments, which were appended to the final report, both industry and consumer members of the TEITAC asked the Access Board to all they could to harmonize with the final WCAG 2.0 document.

Following the committee's work, its report was given to the Access Board on April 3, 2008, and the Access Board began its work turning those recommendations into new standards. As of this writing, the Section 508 refresh has not been completed; the 2001 standards remain in

effect. The Access Board's work continues through the present, in a process that can only occasionally reveal itself to the public. Working out the details has been a difficult and time-consuming process, with an ANPRM issued in March 2010 detailing proposed rules and seeking public comment. The structure of the ANPRM contained chapters on "common functionality" and "electronic documents," set apart from chapters that detail more complex standards for applications, synchronized media, or hardware; this can be seen as a concession to complex authorship, as everyday users could look to the relevant chapters and ignore the rest. However, while this intent was clear, the effect was not yet satisfactory, based on comments received on this ANPRM that suggested it needed to be more understandable by people not already accessibility experts. Additionally, these rules included several sections detailing how the proposed standards harmonize with WCAG 2.0, and indicate how WCAG 2.0 compliance compared to 508 compliance on given topics. Like the Last Call stage of W3C processes, the ANPRM resulted in a wealth of public comments, which the Access Board uses to refine the draft of the standards. The next stage would ordinarily be an NPRM, with regulatory and financial impact assessments, and a final rulemaking. Given the challenges of working through issues of "new or convergent technologies, market forces, and international harmonization,"[72] the Access Board may still issue a Supplementary Notice of Proposed Rulemaking in order to further communicate its intent to the public. The final revisions to the 508 and 255 standards are unknown at this time, but they appear likely to be deeply shaped by concerns about converging technologies and varied uses of computer and internet media and a vision of authorship that includes inexpert users.

Policy Participation and People with Disabilities

If WCAG 2.0 and the 508 Refresh focused on the varied uses of Web 2.0 and exhibited characteristics associated with participatory cultures, it is only fair to ask whether they incorporated people with disabilities more fully into these ostensibly egalitarian structures more successfully than the web industry, advertising, or academia. Certainly, given the goals of web accessibility, inclusion of people with disabilities ought to be a priority in any case, and the emphases on openness and participation would suggest that there were mechanisms for that inclusion. In fact, representatives of disability advocacy organizations, many of whom were themselves disabled, participated in both processes. Yet, the often technocratic practices of policy making have been critiqued for failing to meaningfully incorporate the perspectives of web users with disabilities or give sufficient weight to the opinions of advocates.

Beginning with the WCAG 2.0 process, it is important to recall the membership structure of the W3C, as well as the required expertise and time commitments, all of which had the effect of potentially limiting meaningful participation. Several invited experts on the working group felt that their official inclusion happened quite slowly, and that their earlier participation via the email list may not have been as important to the central working group as they had assumed. Joe Clark, an accessibility consultant and invited expert who left the working group before completion of WCAG 2.0, further felt that the selection of chairs and editors was a kind of musical chairs, as the same handful of people emerged in central positions over and over again.[73] Additionally, the involvement of diverse stakeholders resulted in some distrust, as in the case of industry representatives. Jim Thatcher, who worked for IBM, felt that his participation on WCAG 1.0 was as an expert and advocate for accessibility, not the corporation.[74]

However, others certainly saw industry representatives as necessarily promoting the interests of their employers, and potentially prioritizing those interests above the group's mission. In *To Hell with WCAG 2.0* , Clark described the atmosphere as a "climate of fear" in which corporate and non-disabled voices were regularly prioritized to the detriment of accessibility for people with disabilities.[75] Clark's dissatisfaction with the system was well known, and the piece was a polemic; many others dispute his representation of the working group, its practices, and its composition, as there were working group members who themselves were people with disabilities. Another critique of the inclusion of people with disabilities came from Maurizio Boscarol, also writing for *A List Apart* in 2006,. He critiqued the apparently limited user testing that had gone into WCAG 1.0, calling for future guidelines to be written only after "observing users with disabilities, talking with them, and conducting both formal and informal research with them. We could document the research so that it would be replicable and publish results so that we can stop relying on dubiously researched assumptions."[76] Significant user testing was done on WCAG 2.0, before and during the Candidate Recommendation stage. What is particularly notable about these blogged critiques is not their disputable content, but their contribution to the discursive construction of accessibility as insufficiently attentive to the input of users with disabilities. The perception of such inattention had the potential to be damning, regardless of the efforts behind the scenes to make a time-consuming and difficult process as inclusive as possible.

In the TEITAC process, there was an attempt to include a range of stakeholders, including people with disabilities, but this did not always go smoothly. The Access Board strove for balance on the committee, describing its desired membership as "balanced in terms of interests represented."[77] In the case of the web and software subcommittee, this kind of balance

was achieved through naming as co-chairs Andrea Snow-Weaver of IBM and Curtis Chong of

the National Federation of the Blind, representatives of industry and advocacy, respectively. This

numeric balance did not prevent disagreements, as creating enforceable standards often required

compromise on what many advocates felt were significant accessibility measures. Many

requirements that were undoubtedly important for increasing accessibility were considered

impractical in terms of cost or effort. For instance, audio description of video content, which

makes it more accessible to visually-impaired or blind audiences, is extremely difficult and often

quite expensive to produce. Thus, deciding whether to legally require it, knowing that it could be

burdensome, or whether to leave it out, knowing it would represent a lack of accessibility, could

be a difficult and contentious process. This was especially true because "everybody's coming to

the table as an advocate at some level,"[78] with an interest in "doing the right thing," meaning that

everyone hoped to increase accessibility, but in potentially different ways. Disability

organizations often advocated for comprehensive accessibility standards, which would require

things like audio description, while others exhibited far more concern with practicality. For

industry, practical standards meant those that could be incorporated into hardware and software

within the given time frame, and those that harmonized with international standards. For the

Access Board, ensuring the practicality of its standards increases the likelihood of full

compliance. For advocates, of course, whatever the precision of technical specifications, the only

meaningful question was "what is the result of all of this work for the person who has to use the

technology who has a disability?"[79] This meant that there was extensive discussion during the

TEITAC in attempting to reach consensus and compromise on these issues, and participants did

not reach consensus on some crucial issues.

Regardless of the characteristics of participation seen in these processes, or their concern with converging technologies, shifting authorship, and diverse uses of online media, many scholars argue that further inclusion of people with disabilities in the process is desirable.[80] In their discursive analysis of web accessibility, Adam and Kreps argue that such increased participation is also valuable for its critical potential, as giving voice to the experiences of people with disabilities could reveal unknown problems with existing policies and policymaking structures.[81] This is not always easy to do, as the very technological means by which policy participation is solicited may exclude people with disabilities,[82] but Catherine Easton argues that "increased participation by disabled users in the W3C standards creation process could enhance the legitimacy and accountability of the process."[83] In other words, while there are structural barriers to increased participation by people with disabilities in policy processes (including time, expense, technology, and expertise), finding ways to mitigate those barriers and promote inclusion would counter discourses of non-inclusion and increase the perceived legitimacy of those processes among web users with disabilities.

The increased participation of people with disabilities is central to what Kent and Ellis term "accessibility 2.0," and it is crucial to taking the rhetorics and technologies of participation to their fullest potential. Building explicitly on the rhetorics of Web 2.0 and participation, they argue that accessibility, like Web 2.0, could promote "collaboration and participation."[84] Crucially, their understanding of accessibility 2.0 "assumes different people use the web in different ways and that accessibility is a process rather than a finite solution."[85] Accessibility 2.0 sees the incorporation of diverse voices, including people with disabilities, as central to developing accessibility policies that produce the desired effects. Their vision of an accessible networked future is predicated on the ability to participate extending to ever-broader audiences,

prompting developers, businesses, and others to regularly consider the diversity of needs that individuals bring to their uses of online media. It is this shifting constellation of needs to which I turn in the next chapter, examining the points of entry from which users with disabilities access the web, and how those points of entry shape subsequent experiences with accessibility.

Conclusion

This chapter has paired analysis of Web 2.0 and discourses of participation with the history of the second round of accessibility policy development in order to demonstrate the strong connections between cultural context and policy. In both sectors, between roughly 2004 to 2010, the varied *uses* of online sites and services became topics of mainstream attention and professional concerns. The rise of the amateurs, the extension of authorship, and the glut of social media options created an environment in which understandings of the web, and thus means of regulating the web, were in flux. Furthermore, these changes did not entail a necessarily greater inclusion of people with disabilities, as produsers or policymakers, despite the rhetoric of democracy and merit that were central to discourses of participation.

The processes of policy development demonstrated many values of participatory culture and collective intelligence, though it did not use these terms, and was concerned with media and technological convergence. The openness of the W3C process reflects the value of openness on the web at large, seen in open source software, open APIs, and discussions in favor of net neutrality. Even the 508 Refresh incorporates a degree of openness through public meetings and requests for comments; the internet has increased the openness of the latter process by allowing comments to be made and viewed online. Finally, they aimed for consensus, resulting in lengthy discussions and compromise positions. This may have fostered a kind of collective intelligence,

as individuals' expertise and opinions were blended into a final set of recommendations. TEITAC even used a wiki, that classic example of collective intelligence, to organize its recommendations and track changes to language and structure over time. Turning to convergence, which in academic discourse has been used to refer to the coming together of different forms of media technology and hardware, as well as to "the flow of content across multiple media platforms, the cooperation between multiple media industries, and the migratory behavior of media audiences,"[86] the policy processes found themselves contending with how the same technologies could be used in multiple ways, by a wide range of individuals. The coming together of different forms of data and the rise of the social web fostered convergence in the sites and services provided by web companies, and equally facilitated the creation and spread of content by users. Concern with convergence as it applied to accessibility was particularly evident in the TEITAC report, which stated that it had reorganized the standards in order to "address the convergence of features and functionality" in information and communication technology.[87]

Yet just as the rhetoric of participation and "you" had the effect of erasing users with disabilities as members of mainstream participatory culture and positioning them as a special, more serious, case, these processes were not (from the outside) perceived as fully inclusive of people with disabilities. Both WCAG 2.0 and the TEITAC report were written by diverse committees, including representatives of industry, government, and disability advocacy organizations, some of whom were themselves people with disabilities. These processes highly encouraged all involved to actively participate in meetings, emails, wikis, and phone calls (upon penalty of exclusion, in some cases). However, not everyone did participate equally; the amount of work involved was a barrier to participation for some, and relative lack of expertise led others to be less vocal participants. These barriers, along with other barriers of ability, may have led

policies to be less finely attuned to the lived experiences or desires of users with disabilities, resulting in perceptions that users were not prioritized in these policies. As a result, many analyses of WCAG 2.0 and the Section 508 Refresh have explicitly called for finding ways to increase participation by people with disabilities, integrating the insights of the social model of disability and more fully realizing the potential of participatory values. Creating such change may mean going beyond the tools and ideals of participation to consider changing the very structures of policy processes, which rely in part upon the labor of volunteers, resulting in barriers to the inclusion of people without the time, expense, technology or expertise to participate in the formal policymaking processes.

Returning to the example that began this chapter, it is now clear how individuals like Jim, could be caught between participation and policies. The values of participatory culture–creating, sharing, and spreading online media–had become part of his online identity, but accessibility policies had not found a way to make the spaces and user-generated content of participation accessible. Captions have been invoked as too cumbersome to require, their implementation has been minimal, recalling the difficulties of implementation discussed in Chapter 4. Integrating accessibility with user-generated content, or encouraging its uptake with web authors who are not professional web developers, remains a major challenge in making the web sufficiently accessible for people with disabilities to experience the full magnitude of uses and opportunities available to other users.

In the next chapter, I consider exactly which uses of online media that people with disabilities choose, what content they consume and produce, and in what forms, in relation to their individual identities and social locations. These individual characteristics comprise the point of entry, an intersectional way of understanding the specific knowledges, attitudes, and

material conditions brought to a media experience. This shifts discussion from policies and the

rhetorics of participation to people with disabilities' very experiences of participation, asking

how those experiences may challenge and enrich "official" understandings of accessibility.

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Chapter 6

Webbed Accessibility: Networked Practices in a Disability Blogosphere

For Jessa, sharing content online has become second nature; she has a personal blog, a photoblog on Tumblr that links to her Flickr account, and an active Twitter and Facebook presence. Jessa is a white woman in her late twenties, living in a medium-sized town, and identifying as a Christian and a feminist. She has identified as a person with a disability since her multiple sclerosis was diagnosed several years ago. Gradually, Jessa's online persona has grown to include more disability-related components, alongside her other interests. A typical month of posting on her personal blog includes links to her photos, short posts pointing to others' blog or Tumblr posts, some discussion of disability and women's rights issues in the news, and personal reflections about her family, faith, health, job, and politics. In short, not everything she does online focuses on disability, but she sees her various identities as major influences on her choice of content.

Jessa's online community is a diverse network, encompassing real-life friends, people she met through her creative photography, and other bloggers with disabilities. At various points in her blogging life, she has felt closer to some of those components than others. Early on, for instance, she felt like by posing about her MS, she could reach out to other young women struggling with their diagnoses. Though responses to that were positive, and she still keeps up with many people she met through that blogging, Jessa has been more dedicated to her creative identity as a photographer recently, leading her to start reading more blogs and Twitter accounts maintained by photographers she admires. Jessa has also found that these communities can be at odds with one another, and she rarely discusses her ideas about being a Christian feminist in spaces other

than her own blog, as many faith-based blogs are uninterested in feminist politics, and feminist blogs are often uninterested in questions of faith. Her personal blog, and to a lesser extent her photoblog, serve as central places for the articulation of these varied identities, which are otherwise distributed across online networks. Her Twitter account, however, she treats as more interactive and performative, using it primarily for conversation with other individuals, rather than as a broadcast platform.

The study of web accessibility requires engagment with policies, existing within particular sociocultural contexts and being implemented according to the decisions of countless web producers, but it must also involve close attention to personal and communal experiences of accessibility. If the goal of accessibility policies is to make the web more usable by people with disabilities, then the experiences, decisions, and interpretations of this audience are of crucial importance to understanding accessibility's role in the development and use of the web. From the description of Jessa, above, it is clear that web users with disabilities may have wide-ranging interests that drive them to use multiple sites and services. Jessa seeks out religious, feminist, and disability-centered content as well as artistic photos and instructional materials. She uses many different forms of content, as well, from blogs to Twitter, Facebook, and Tumblr. Her uses include writing material, posting comments on others' blogs, sharing her photographs, and staying in social contact with people she has met online. In many ways, this description might be familiar to non-disabled web users–it combines various interests, elements of her identity, and relies on commercial web services. However, disability is one component of that identity, and

through the establishment of her MS community, Jessa's unique point of entry can be seen to shape some of her subsequent decisions regarding form, content, and use.

This chapter looks at web accessibility through the lens of the point of entry, considering how an intersectional identity (of which disability is one part) may create particular articulations to form, content, and use within a given context. As elaborated in Chapter 1, I understand the point of entry to be a particular positionality from which situated knowledge emerges and exerts influence on subsequent knowledge, experiences, and actions. I theorize it in terms of feminist and disability studies theorizations of intersectionality as being comprised of particular identities, privileges, and oppressions located within individual, varied physical bodies. In the model of the study of media access proposed in Chapter 1, I indicated that the point of entry was the intersection of four vectors: bodies, resources, skills, and social identities. Bodies, and physical abilities, structure the possibilities of access, and their interface with technology is often what is altered through the policies and implementations of web accessibility. Resources–social and economic status, community resources, the availability of technology, and levels of education– can be understood as tools to be leveraged in the service of access, if so desired. The relative wealth of resources may correlate with easier access. Skills are those literacies, knowledges, and other forms of know-how brought to a media use situation, which may enable greater or lesser access. Finally, social identities is a broad category that attempts to capture demographic and identity characteristics (and their relationships to one another). Taken together, these four vectors produce a means of discussing endlessly variable personal characteristics that are brought to an access situation, and encourage consideration of how this point of entry might connect to other components of a circuit of access.

Unlike previous chapters, which have utilized interviews with web accessibility professionals in conjunction with archival and popular press sources, this chapter is rooted in ethnographic data from a disability blogosphere, collected between May 2011 and January 2012. This data allows for exploration of web accessibility is experienced and conceptualized by a group of internet users who are ostensibly the beneficiaries of accessibility measures. Where previous chapters have looked to the production of policies and web content in their sociocultural contexts, this chapter looks to the reception of those policies, their implementations, and the relationship between disability and online technology. This focus can denaturalize the preferred user positions established earlier by highlighting alternative arrangements of access and investigating the ways in which a non-normative point of entry affects experiences of and ideas about web use. Perhaps the best analogy is to the deconstruction of "preferred readings" of media via audience studies, as when David Morley argues that:

> we need to set ethnographic stories of domestic consumption in the wider context of the discourses of production, design, advertising and marketing and then see how people work with these technologies in and against these existing, powerful discourses which work to construct 'preferred readings' of their desirability and uses.[1]

Just as preferred readings privilege particular arrangements of power and subject positions, the preferred meanings and embodied uses of internet technology have privileged a dominant "user," as explored in previous chapters.

In this chapter, I examine the activities, experiences, and conceptions of accessibility within a disability blogosphere as they relate to particular points of entry. Web accessibility is woven into the fabric of these users' experiences of online media and technology. Sometimes it rises to the foreground, while often it is a present, but unremarked, component of the overall

experience. By examining the details of individual arrangements of access, and meanings of accessibility, preferred articulations of internet use are challenged, and the contingency of access is revealed. I turn first to a review of existing work on disability blogging, before providing an overview of my ethnographic methods (which are expanded upon in Appendix 2) and interview questions (see Appendix 3). Then, I move to consideration of the point of entry within this community. Having established the diversity and commonalities among points of entry, I consider how a point of entry shaped by disability results in particular articulations to form, content, and use. Finally, I explore the expanded conceptions of accessibility within this community, where accessibility is understood not simply as a technical enterprise but as connected to a politics of inclusion, in keeping with a nuanced understand of disability as both social and personal.

Disability and Blogging

Existing research on disability blogs has largely focused on the question of the theoretical understanding of disability produced through blogged self-representations. In one of the earliest attempts to consider the online cultural practices and productions of people with disabilities, Goggin and Newell argue that, "in online interaction and exchange, those of us participating learned to understand the social nature of disability."[2] This conclusion comes from a rhetorical analysis of an online community around disability, which they found through web searches. Goggin and Newell argue that this online community allows individuals to move toward a social understanding of disability, rather than a medical or charity-based understanding, while offering them the opportunity to participate in the construction of the meanings of disability.

Later studies of disability blogging have challenged the degree to which a social model of disability is forwarded through blogging communities, and have focused on only a few, high-profile sites, particularly BBC Ouch!. Goggin and co-author Tim Noonan, in their essay in the anthology *The Uses of Blogs*, provide a typology of disability blogging. They suggest that major categories include: those blogs that explicitly claim a disability activism or disability studies perspective; those blogs that focus on a particular perspective or topic, including many personal journals of disability experiences; and those blogs that are associated with major media organizations, such as Ouch!. Throughout these rough categories, however, Goggin and Newell emphasize that many of the discursive constructions of disability in these spaces are at odds with the "rules" of disability theorizations, demonstrating "alternative narrations that are not necessarily in accordance with the dominant paradigms, including those proposed by social model theorists."[3] Estelle Thoreau draws similar conclusions from her critical discourse analysis of 48 articles from Ouch!. The majority of bloggers on the site represented themselves informally and emphasized personal experiences, thus presenting disability as individual, and not conforming to a strict social model.[4] Katie Ellis and Mike Kent reference these nuanced, individual self-representations on Ouch! in their discussion of Web 2.0 and new opportunities for people with disabilities to participate in the creation of content. They suggest that Ouch! is instrumental in redefining disability through an irreverent tone and encouraging community participation.[5] Throughout *Disability and New Media*, Ellis and Kent incorporate textual analysis of online material, interviews with content developers, and illustrations of inaccessible experiences to provide a detailed overview of contemporary online media, accessibility, and disability politics.

Blogging, Twitter, and other social networking sites may also provide a necessary antidote to stereotypical mainstream media representations of disability. Beth Haller provides a brief overview of these venues in *Representing Disability in an Ableist World*, referencing many of the same blogs used in this research, including *Disability Studies-Temple University*. Haller argues that blogs have had a significant political role for the disability community, with activists, scholars, and people with disabilities providing alternative representations of disability.[6] Regarding Twitter, Haller notes its growing use by disability organizations, such as ADAPT, and advocates, such as Marlee Matlin.[7] She argues that Twitter is particularly significant as an alternative means of accessing news, as disability-related news may not always be easily availabe through mainstream venues. Haller discusses several other forms of online media, as well, concluding that these communication technologies and user-generated media has provided important avenues for the production of media by people with disabilities; "with that voice, people with disabilities can tell the world about their own stories and life experiences."[8]

Though negotiations of the cultural meaning of disability are clearly a central component of any disability blogosphere, these studies' focus on prominent sites and textual analyses results in a limited understanding of how accessibility concerns filter through all aspects of the user experience. Bringing an ethnographic sensibility to the study of disability blogs offers a chance to reveal deeper insights about the social construction of ideas, behaviors, and interactions as they come to be taken for granted within a loose online community around disability.

Ethnographic Methods

Ethnography, or "the qualitative study of research participants' interactions and perspectives,"[9] works to make the familiar strange, revealing how taken for granted assumptions are culturally

constructed. In this case, ethnographic research into the meanings and experiences of accessibility complicates the official discourses of access for people with disabilities as well as the popular discursive constructions of online participation. That is to say, this method allows consideration of both what users with disabilities say about accessibility and how their actions connect to discourses and policies of accessibility; the experience of online media is both discursive and material in its everyday practices.[10] Crucially, online experiences are inextricable from the offline, and embodiment is persistent.[11] This is particularly observable in the study of accessibility, where the reliance on particular assistive devices, experiences of fatigue, and negotiation of preferred technosocial relationships are central to the online experiences of many people with disabilities.

This study of online cultures and experiences additionally draws upon a tradition of audience research in media and cultural studies. Audience studies have used ethnographic methods in order to make sense of media reception as it is embedded in everyday life and as it creates and circulates particular meanings around cultural texts. Through analysis of audiences,

> "we restore time, process, and action to our account of human endeavor [...]. We also increase our chances of sorting out or articulating the difference between the represeeive imposition of ideology and oppositional practices that, though limited in their scope and effect, at least dispute or contest the control of ideological forms."[12]

Through focusing on audiences and the ways in which they use and make meaning from media, audience studies has demonstrated that there is "more to watching TV than what's on the screen."[13] This focus on practice makes it particularly appealing to my study, in which the interface of bodies and media technologies is essential to understanding the media experiences of web users with disabilities. Although I limited this study to interviews and online observations,

rather than watching users at their computers, I have attempted to be aware of the limitations produced by this decision, conducting open ended interviews and drawing connections between participants' statements or actions and larger structures. Audience studies do not take audience statements as indicative of truth, but as suggestive in terms of the relative importance and relevant cultural frameworks that surround reception of a text.[14] This retains the inherent complexity of media use and interpretation within a larger system of power and ideologies that may constrain those active uses.

In moving online, audience studies have struggled with many of the same challenges as other ethnographic work, including the negotiation of available audience opinions and the need for more directed audience research.[15] Audience studies, however, have an emphasis on the relationship between daily life and cultural interpretation that may be particularly valuable in the study of new media as it becomes part of everyday life, introducing new practices, cultural forms, and negotiations of meaning.[16]

Much audience studies research, however, has focused closely on the moment of reception. Although theoretically access to cultural production is part of the field of audience studies,[17] it is rarely the focus of research in this tradition. In moving online, audience studies must address the blurring of reception and production, as well as new uses; reception, like access, is better understood not as a single act but as "constellations of active moments of engagement saturated in histories and contemporary experiences of raced, classed, and placed identities."[18] Therefore, in this chapter, ethnographic methods have been used in the tradition of audience studies in order to illustrate the specificities of context, and the complexities of the relationship between point of entry, form, content, and use. In what follows, I am interested in the meanings circulating around the concept of accessibility, as it is experienced, implemented,

and discussed in online contexts; these meanings may not have the status of objective truth, but they are indicative of particular relationships to internet access and use.

Methodologically, this chapter draws upon online participant observation and open-ended interviews. It is an online ethnography, in which the site is not a geographically distinct location or culture, but networked cultures in all of their specificity. Where oral and embodied interactions have been central to traditional ethnographies, the interactive textual exchanges possible online constitute a kind of orality that may be studied as a similar form of exchange.[19] As individuals must produce text and other content to represent themselves online,[20] analysis of these blog and social media texts is best understood as ethnographic research on the presentations of self and production of culture as lived by a number of people. Often, online data is combined with offline interviews or observations.[21] However, because most individuals involved in online cultures will not meet face to face, and do not necessarily experience similar cultural contexts offline, conducting ethnographic research online in some ways preserves the integrity of the field.[22] Thus, participant observation for this project is being conducted entirely online, and supplemented by interviews, themselves often conducted through online communication technologies, including Skype and email.

Participant observation offers a particularly useful method of online ethnographic research practice. Ethnography seeks to understand lived experiences and the ways in which particular meanings and social norms are instantiated and maintained; participation in and observation of regular interactions illustrate the common behaviors and beliefs of a culture's members. Online participant observation requires that the researcher acts and participates within the virtual research site, gaining experiential and interactive knowledge of the culture as well as observing others. The situated knowledge gained from personal experiences and interactions can,

far from simply biasing interpretation, provide a standpoint from which to explain the beliefs and

practices of the culture in a way that would be inaccessible to mere observers. Participant

observation is "intentionally oxymoronic,"[23] but the push and pull of these dual roles offers

opportunities for reflection on personal experience, observed interactions, analytic

interpretations, and participants' (un)stated meanings. This can result in a more nuanced

description and analysis of the research site than would be possible from either participation or

observation alone.

Online participant observation for this project has entailed entry into a disability

blogosphere comprised of over 50 sites as a regular reader and occasional commenter, as well as

my ongoing participation in Twitter and Tumblr conversations with research participants. For a

detailed description of the construction of this field, see Appendix 2. This participation has been

counterbalanced by ongoing detailed observation of the content and frequency of postings on the

sample blogosphere, which has been recorded in regular fieldnotes. In combination, this has

allowed me access to large-scale trends within the research site, as well as to smaller moments of

meaning-making, illuminating the specifically constructed nature of "common sense" meanings

within this disability blogosphere.

One of the challenges of online participant observation is that only final acts of

participation are visible; the individual offline contexts of research participants are not normally

available for study.[24] In this research, open-ended in-depth interviews, conducted by phone,

Skype, or email, attempted to unearth some conditions of use by prompting reflection on the

mechanics of computer and internet use. These in-depth interviews aimed to understand the lived

experiences of research participants at a level of specificity that may not be attainable through

simple observation. Anecdotes and experiences related to accessibility were elicited through

open-ended questions, and were followed up with probes to clarify or amplify the participants'

responses. Interviews also explicitly asked participants to reflect on the meaning of disability and

accessibility, foregrounding often implicit parts of their on and offline experiences. Additionally,

these interviews were open to changes in topic initiated by the participants, in a reflexive co-

creation of the interview encounter. All interviewed bloggers were asked about their history of

internet use, whether they avoided or heavily used any sites in particular, what they knew about

web accessibility, what audience they blogged for, and about their understandings of "disability"

and "accessibility." A full list of the starting questions asked in all interviews is available in

Appendix 3.

In choosing not to conduct interviews in-person, I have found advantages and

disadvantages. These interviews, like those conducted for the historical work, took place over

the phone, Skype, or email. Skype and email interviews brought the technological interface and

life experience into connection with closely related research questions, preserving a networked

field of relations. More crucially, the availability of multiple methods of interviews gave me

needed flexibility in making the interview encounter accessible for participants, some of whom

had strong preferences for either oral or written communication due to the nature of their

impairments or preferred assistive technology. This flexibility was an advantage, and in some

cases, online interviewing allowed me greater access into the accessibility context of users'

computer and internet use, as we could more directly discuss the minutia of technological use.

However, some taken for granted components of context that might have been clear in-person

were rendered inaccessible to me in this context; class context, in particular, was largely

obscured, as was race except in cases in which participants chose to disclose it. Even disability

status was not necessarily clear, as I did not explicitly ask for diagnostic information, and many

interview participants shared only the symptoms or relevant characteristics of their disability experiences. Undoubtedly, phone and online interviews also produced different kinds of data, as people may have been more or less inclined to share particular kinds of information through particular media.[25]

Most importantly, by using interviews in conjunction with participant observation, members of the disability blogosphere were given the chance to share their own interpretations of their culture, as relative experts. Both participant observation and in-depth interviewing are forms of research that rely heavily on the formation of a productive relationship between the researcher and participants, and the nature of power within these relationships must be attended to in order to avoid exploitation of participants or loss of analytic distance. Participant observation requires the conscious, ongoing negotiation of power dynamics, as forms of knowledge, experience, and culturally sanctioned forms of authority intersect in various ways. This is particularly true in cases in which variables of race, class, education, and ability status may privilege the researcher in ways that discipline participants' openness or willingness to participate, as may be the case in these interviews with Internet users with disabilities. By offering in-depth interviews as an opportunity for research participants to speak for themselves and interpret their own experiences as members of this disability blogosphere, I was forced to reevaluate my analyses in light of the often quite lucid interpretations of members of this disability blogosphere.

The ethics of online research raise numerous questions, as the quantities of information freely available online seem to offer a bonanza of data, while the relative anonymity or obscurity of most producers of online content suggests that there may be risks to privacy in making public content more public. In order to respect both the visibility and privacy of online participants, I

have made three key decisions: the only names used in this chapter are those I have permission to use from individuals whom I interviewed; findings based upon participant observation of sites are not tied to specific URLs, though public blog posts are discussed and blogs may be named; and only group characteristics are otherwise used to identify individuals from participant observation. Though I consider blogs to be importantly public venues in which people may self-publish to a large audience, a particularly crucial feature for a historically silenced population, I do not wish to be the source of undue attention to individuals, nor to use material for which consent was dubious. All blogs observed for this project were notified, and given an opportunity to refuse or ask questions, but in the absence of explicit consent, I have taken small measures to protect both participants' status as authors of publicly available online materials, and their status as private individuals who should not be subject to unwelcome intrusion as a result of their cooperation with this research. These reasons echo those used to justify the creation of composite individuals, whose descriptions have begun each chapter; drawing upon multiple individuals, experiences, and texts, these composites speak to real concerns and often recall real language and perspectives, while protecting any individual from being identified and in any way targeted as a result of my analyses.

These decisions, however, call into question the politics of speaking for others, particularly those in a frequently marginalized position. Ethnographic writing has been described as the production of "true fictions,"[26] calling attention to the exclusions, partiality, and process of constructing representations of reality. In writing this chapter, and through the vignettes elsewhere in this project, my goal has been to make choices that enable me to convey what is true about this disability blogosphere without taking voice from my participants, and without violating their privacy. Whenever possible, I use direct quotations from interviews in order to

explicitly give voice to those bloggers with disabilities about whom I write. Many other

components are paraphrased or placed in quotation marks, but are not directly attributed, as they

were drawn from observation, often of multiple sites. In order to prevent ventriloquizing, this

chapter and the vignettes used in each chapter were sent to every person I interviewed. I received

significant feedback from these individuals, sometimes going through two or three rounds of

revision on particular statements, descriptions, or interpretations. The co-construction of

meaning in this work is taken seriously, and I have endeavored to make the presentation of data

in this chapter as clear as possible in terms of differences between data, my interpretations, and

my participants' understandings. Concerning the vignettes, I sought confirmation that those upon

whom they were partially based found them to be resonant; I similarly received significant

feedback, much at quite a high level of detail, which enabled these composites to become even

stronger illustrations of the experiences and concerns of not one, but many, web users with

disabilities.

Turning to my own position as a researcher, I want to emphasize that while I am an

active user of online media, I do not identify either as a blogger or as a person with a disability.

My own blog, briefly and intermittently maintained prior to the official start of this ethnographic

research, allowed me to make initial connections with individuals who later became research

participants, but did not otherwise become part of my research process. Throughout this research,

I have also drawn on previous knowledge of many disability blogs, as a long-time reader and

commenter in these spaces. This was a source of valuable contextualization but also an

indication of the artificiality of constructing a research field.[27] I nonetheless found that in

preparing for, conducting, and reporting on this research, I developed a perspective on my

research and on my own internet use that drew upon the experiences and perspectives of the

blogs I read, conversations I witnessed, Tweets I exchanged, and interviews I conducted.

Certainly, the deconstruction of my Twitter use in Chapter 1, through a circuit model of media

access, would not have been possible without this ethnographic work. In an effort to declare my

indebtedness, I attempt to incorporate interactive writing in this chapter, making available the

intellectual exchanges as well as the results of this research.[28]

The influence of my participant observation is particularly pervasive and difficult to

extract from my own analyses, in part due to the pervasiveness of that online participant

observation. Online research can be difficult, as the expectations of privacy online are not

necessarily obvious, making accountability measures like those discussed above particularly

important. Online research, however, is much like traditional ethnographic research in the

intertwining of the researcher and field, and of research relationships and personal lives. The

only difference may be in the different ways in which these interchanges occur. In participant

observation, I attempted to bracket research time from other online pursuits during these nine

months, setting aside periods in which I conducted participant observation nearly every day.

However, as I followed most blogs via RSS in Google Reader (in order to be sure not to miss

posts), and followed Twitter and Tumblr accounts through those services, new material would

often become available to me outside of those timeframes. In addition to being research tools,

Google Reader, Twitter, and Tumblr were equally personal services, used in my private and

professional capacities. Thus, they were all available not merely on my personal laptop but also

on my smartphone, which would regularly update both personal and research content. I stumbled

across research material while riding the bus, watching television, and upon waking in the

morning. While I would attempt to retain those posts for later concerted attention, this blurring of

research into daily life was continual. Conversely, participant observation periods were often interrupted by the rhythms of daily life, despite my best intentions.

The challenges of conducting ethnographic research online, and around a potentially sensitive topic such as disability, have been significant. However, this work offers to fill an important gap in current research on disability and the internet by focusing on the discursive meanings of accessibility, disability, and technology as they are collectively constructed and understood by those to whom they are most salient. This chapter's investigation of the point of entry and its effects on an access situation is, in many ways, the most central component of the larger project, without which my analysis of web accessibility would remain isolated from those it purports to serve.

Intersectional Identity and the Point of Entry

The concept of intersectional identity is central to understanding the point of entry. Though social identities are placed on a vector apart from resources, skills, and bodies, the four vectors necessarily affect one another, and intersectionality may be understood as a theoretical means of placing these concerns in relationships of mutual influence and locating the individual at a unique point, from which he or she may enter a constellation of media access. Intersectional identity is not merely additive, but relational, and the composite vignettes used throughout this dissertation have attempted to indicate something about the points of entry they represent. These accounts draw upon participant observation and interview data, though they do not describe real individuals. Thus, I now turn to deconstructing these vignettes, in concert with the data, in order to demonstrate the diverse points of entry represented within my disability blogosphere.

"Lora's" story began Chapter 1, in which media access was reviewed across several literatures, and in which my model of the study of media access was proposed. The composite of "Lora" drew most heavily on several male and female bloggers with mobility impairments, including amputations, muscular or nerve disorders in the legs, and paralysis. Lora's occasional use of a wheelchair was chosen in order to convey the lack of uniformity in these experiences of impairment, and to indicate the different experiences of disability that bloggers, particularly female bloggers, encountered when using a wheelchair, walker, cane, or when unaided. Though underlying problems may be the same, many bloggers indicated that these different embodiments of mobility impairment resulted in very different interactions with the public. I considered this composite particularly necessary because, based on available content, I would estimate that at least half of the disability blogs identified in my sample were maintained by individuals whose impairments do not directly affect their use of online media. For them, web accessibility was not of significant concern, although they were often very well versed in physical accessibility concerns, and were often quite invested in a disability politics and identity.

Furthermore, "Lora" demonstrated a point of entry that is relatively privileged, but nonetheless found the disembodiment of online media appealing as a visible disability affected treatment in the outside world. This point of entry, as a white, middle-aged person with decent skills and resources, was extremely common among men and women in my disabilitiy blogosphere, although socioeconomic class varied widely, and was thus not stated in "Lora's" persona. Many bloggers fit these characteristics, and used the internet to "speak back" on their own behalf. As blogger Jana Remy explained, after encountering ignorant responses to her leg prosthetics, "I don't want to like, be rude to their face and say 'you don't know what you're talking about,' but I wanted a place where I could in some sense um, uh–talking back is probably

not the right word–but I could tell like, sort of real stories of what it's like." This group was particularly likely to engage in activism around disability rights, whether via ADAPT and similar non-profit groups, through the sharing of news material, or through advocating health care reform, a particularly important topic for bloggers with fewer financial resources. I similarly declined to provide "Lora's" educational background, as some bloggers in this general group included references to college or advanced degrees, including doctorates, but others did not, making it impossible to deduce representative educational levels.

The second chapter began with the case of "Michael," whose point of entry was similarly privileged, and who was described as a college graduate and a white-collar knowledge worker. This composite description attempted to capture the points of entry of several bloggers with visual impairments, who in my blogosphere were predominantly male and highly educated, and for whom web accessibility was particularly essential. For many of these individuals, a social model of disability remained crucially important, and allegiance with a disability rights movement was quite pronounced. For some, however, individual adaptation was understood as necessary, thus prompting me to include reference to "Michael's" "blind skills," the tactics learned to navigate a largely inaccessible physical world, and his attention to "work-arounds" in order to create his own accessibility measures. These forms of individual accessibility represent crucial interventions, and demonstrate high levels of resources and skills. Similar attempts to advocate and innovate in order to gain access will be discussed later in this chapter. Finally, I included "Michael" in order to demonstrate a point of entry that was old enough to have experienced the initial shift from a text-based to a multimedia web, as the blogosphere contained several members of this generation.

The story of "Stan," which began Chapter 3, illustrated a man of the age "Michael" would be now, and demonstrated a case of much more severe disability. "Stan's" story drew upon a handful of blogs by paraplegics, individuals using respirators, and others for whom daily life requires assistance. His was a point of entry that was relatively disadvantaged in terms of resources, as his mobility, employment, and social outlets are greatly reduced by his disability. Individuals like "Stan" are in some ways vulnerable to outside forces, given their need for assistance. Should the heat go out, for instance, during a snow storm, as happened to one blogger during the course of my observations, these individuals might find themselves at risk due to the difficulty of travel, the need to acquire food, and a potential reluctance to ask for aid as others also faced the storm. Additionally, this vignette was used to highlight the high needs for assistive technology among some people with disabilities within my blogosphere. Some impairments require significant intervention in order to interface with technology, and assistive devices can be expensive. As one female blogger explained, navigating the computer was a struggle because of the expense of hardware; she was eagerly anticipating receiving a mouse that could be operated by the chin/tongue through a state agency. Such generosity is not always forthcoming, and presents its own challenges regarding the time and bureaucracy involved in acquiring assistive devices. As a result, many people allow their assistive technologies to age without replacing them, or stick to a technology chosen years ago due to familiarity, both of which pose a challenge as web media develops and changes, and assistive technology must be brought up to date.

"Clarisse" began Chapter 4, introducing the inconsistency of accessibility implementation from a point of entry that was deliberately ambiguous. The figure of "Clarisse" was modeled in large part on a number of bloggers found through Feminists with Disabilities, and this was

reflected in her gender, non-white race, youth, and activist perspective. I found far more women

of color than men of color active in the disability blogosphere that was my field, often mixed-

race women, in particular. As "Clarisse" is a composite, I declined to be more specific about her

racial background or geography, though these variables would undoubtedly matter to her

experiences. The youth and intellectual activism in "Clarisse" reflected the strong political

element to a segment of my blogosphere, where an interest in disability as a matter of social

justice, broadly defined, was more common than a simple disability politics. Finally, I included

"Clarisse" in order to prompt reflection on "invisible disabilities" and conditions not often

discussed explicitly in relation to web accessibility. Finally, like "Michael," "Clarisse" provided

an example of someone actively managing their own health and accessibility needs in the face of

limited accessibility measures, as will be discussed later in this chapter.

Chapter 5, focused on use and participation, began with the case of "Jim," an active web

user in the post-Web 2.0 era. "Jim's" identity was much like those of "Lora" and "Michael," as

he was white, middle-aged, employed in government, and living in an urban environment. This

was reflective of the relative privilege of such a position, and its subsequent dominance in online

media; the time, resources, and cultural relevance of blogging may be higher for those who are

closer to a preferred user position. Perhaps as a result, there was a white, middle-class dominance

to the disability blogosphere in which I conducted my research. Additionally, "Jim" was largely

based on the handful of hearing impaired bloggers who were part of my blogosphere, many of

whom were quite enmeshed in a Deaf community, in which deafness may be understood as more

cultural than a matter of disability. As a result, I described "Jim" in relation to online media

known to be particularly relevant to a Deaf community, and discussed his accessibility hurdles in

terms of not just captions but ASL interpretation of audio content. "Jim" also stood in for

younger men within the blogosphere, whose posts often combined reflections on workplace experiences, media fandoms, and disability-related content. As a result, I incorporated several interests into my description of "Jim," which drew on the blogosphere as a whole, in which a host of interests and hobbies are shared in blog posts and images. "Jim" enjoyed swimming and contemporary fiction. The blogosphere as a whole enjoyed these things as well as crafting, photography, running, watching television shows and films, cooking, and a variety of other sports and hobbies. In a chapter focused on varied uses of the web, incorporating the kinds of content produced seemed necessary, and was accomplished by giving Jim particular interests as well as a job, though this was by no means a unique experience.

Finally, this chapter began with the case of "Jessa," a feminist Christian with an active social media life. Like "Clarisse," "Jessa" was drawn from observations of female bloggers with strong ideological beliefs. However, I chose to include "Jessa's" religion in order to indicate the commonplace nature of Christian bloggers within my field. Many bloggers, usually women, incorporated posts about their religious beliefs and experiences, as well as hymns and prayers, on their blogs. These were usually not the only focus, as these bloggers were often also involved with activism in a disability community, pursuing higher education, or had demanding family lives. These bloggers were no more or less likely to be politically active than nonreligious bloggers, and I paired feminist beliefs with Christianity in "Jessa" in order to indicate a second common identification. Perhaps, given the seed of Feminists with Disabilities, the commonality of feminist beliefs, sometimes tied to anti-racist or social justice activism, was unremarkable and even a bias within the field. That said, it was notable that disability politics and politics around gender and sexuality often coexisted, so I chose to include this detail for "Jessa." The choice to put these identities at odds was made on the basis of common critiques of both Christians and

feminists, as well as on the basis of my long experience within a US-based feminist blogosphere, where positive discussions of religion are relatively rare, though not absent. Next, I incorporated the production of artistic content and the intentional formation of community into "Jessa," both of which were common activities, particularly among those sites found through Blind Photographers. The formation of community will be discussed at length later in this chapter. Finally, "Jessa" represented the most active user of social media of all of the vignettes. This was included due to the common use of Twitter and Tumblr by bloggers within my sample, and their frequent references to Facebook (which was not studied, as it is less compellingly public than blogs and similar sites).

Having described my choices in producing these vignettes, I should also highlight three important exclusions–cognitive impairment, family life, and points of entry with low resources or skills. I made the decision to exclude cognitive impairment from these vignettes for two reasons. First, I excluded them because cognitive impairments received relatively little discussion in earlier chapters, where I chose to bracket extensive policy debates about cognitive disabilities. Secondly, the possible inclusion of individuals with cognitive impairments in ethnographic work raised concerns with my IRB, and resulted in a choice not to ask for diagnostic information directly and not to include bloggers with known severe cognitive disabilities that could affect their ability to consent (See Appendix 2 for more). Secondly, I elided family life from the vignettes despite the huge quantities of blogging about family members and partners in the blogosphere in an effort to avoid either overgeneralizing or accidentally identifying anyone's family members, who undoubtedly have a right to complete privacy in regard to this project. Thus, though family situations clearly relate to elements of social identity, as well as to the resources and skills available to various bloggers, I have declined

to include this variable. Finally, deconstruction of these vignettes has made clear the lack of any representation of an individual with low resources or skills. People with disabilities are statistically likely to be older, have low levels of education, and live in low-income households.[29] Thus, those bloggers discussed here are not a representative sample of Americans, or even web users, with disabilities. In part, this exclusion is due to the material and technical requirements of blogging, and the likely elimination of people without the necessary resources or skills from my project. The site of the blogosphere constrained the diversity of class and educational statuses among research participants, and also meant that many bloggers simply did not disclose their class status or educational background online or in interviews. This represents a limitation of my research, and an important avenue for future ethnographic work on disability and internet technology.

Intersectionality and Disability in the Blogosphere

Intersectional identity, though a powerful and nuanced way of considering the effects of living at the intersection of particular identity groups and material conditions, is difficult to apply to a study of many, very diverse, people. The vignettes employed throughout this dissertation have attempted to highlight particular articulations of identity as points of entry from which individuals access online media, incorporating representative components of many individual experiences. In terms of a single experience of intersectionality, I asked Australian social justice blogger Chally Kacelnik about how she understood race, gender, sexuality, disability, and other forms of identity relating to one another, as she often blogged about identity issues. In her emailed response, which she later posted to her personal blog followed by requests for reader engagement with the ideas discussed, Kacelnik wrote:

I am atypical in a lot of ways: I can often pass as white, and non-disabled, and normative in other respects, and the Internet has been an important place for me to play around with identity, and expand people's ideas beyond essentialist notions of various identities. […] I also understand race, gender, sexuality, disability, and so forth as relating to each other in all kinds of ways. White womanhood is defended and idealised where non-white womanhood is not. Many people are reluctant to acknowledge people with disabilities as having sexualities, and certainly not queer ones. I know I'm seen as silly and hysterical or making up my chronic illnesses specifically because I'm a woman. I have an amazing doctor who doesn't subject me to those attitudes, however – but that's because I can afford him, with the funds that come attached to being middle class. I'm extremely conscious of how racialised ideas influence how people might understand me as a sexual woman. It's all intertwined in many, many, many ways.

In this account of her own positionality, Kacelnik demonstrates how closely components of her identity relate to one another and to her lived experiences online and off. Her point of entry, then, appears to be one in which her material resources and high educational background are put to use online in the service of a complex identity project, which itself stems from her experiences. Exploring intersectional identity at such a level of detail is impossible in the study of a large, diverse blogosphere, however, and I will take disability itself as the central vector in my subsequent discussions of how the point of entry is articulated to form, content, and use in a given context.

As I did not ask for diagnostic information, it is best to conceive of the influence of disability at the point of entry in the ways in which bloggers with disabilities themselves conceived of disability and its effects. The conceptions of disability revealed through observation

and supplementary interviews combine elements of the social model of disability with attention to the individual, embodied experiences of disability that were the focus of a medical model of disability. Certainly, within this loose community, there are abundant critiques of inaccessible spaces and practices in society at large; the ongoing saga around getting wheelchair accessible taxis in New York City circulated throughout the blogosphere, as did regular critiques of Tumblr. The social model emphasizes the need for changes in society in order to change the stigmas of disability, and this transformative social standpoint is certainly found. A strict social model was most often espoused by highly educated bloggers and by those who were of an age to have grown up with the disability movement. Mark Willis, an educated middle-aged man who works in university settings, expressed his definition of disability as follows:

> I absolutely believe the disability is a social process. I was fortunate I guess to have come along in my experience of disability in the beginnings of it in the early 1970s to have sort of grown up with that concept of disability as a social process… So, in that, it's not just my limitation that, you know, results from some disease process or bodily injury or whatever, it's also society's limitations. And disability is a process that involves a dialogue or a negotiation between the two. Between the individual and the individual's social context.

Willis, like many others, embraced the social model but emphasized the individual nature of disability. In these formulations, disability is not individual in the sense of the classic medical model–in which disability was located within individual bodies–but in the sense of particularity, referring to an individual standpoint from which one interacts with society.

This individualism of disability was conveyed through bloggers' attempts to define disability in relation to a norm, and their desire to explain the relationship between individual

experiences and social barriers. In interviews, several bloggers began by defining disability in terms of conditions that cause an individual to be different from a physical or mental standard, as in one blogger's statement that "disability is any variance from the norm of the basic physical/mental condition of an individual." From this beginning, which seems to restore a medical model of disability as deficiency, bloggers expanded, articulating a connection between individual impairments and social structures. Blake Watson, for example, concluded his definition by saying, "But it can be worsened, or improved by, society, I would say. Yeah." A more elaborate attempt to connect the individual and social came from an interview with genderqueer writer and activist s.e. smith,[30] who wrote the following in answer to a question about the meaning of disability:

> I subscribe to a mixture of the social and medical models of disability; in short, I believe that variations in human bodies can create public access issues because society is not accommodating (spaces designed for people who walk instead of roll, media developed for people who see instead of hear, etc.), and that some variations in human bodies also result in the personal experience of impairment (chronic pain persists despite access, mental illness can still create suicidal thoughts even without social stigma).

This explanation uses the language of the social model (disability/impairment) while attempting to validate both socially constructed experiences of disability and individual, embodied experiences of impairments that may have disabling effects.

This understanding of disability as difference–whether internal, external, or both–shapes the general point of entry such that people engage with a range of online forms, content, and uses in ways that often reflect or incorporate their differences. The following sections make articulations between disability as difference and sites of form, content, and use of online media

before considering how disability, in its relationship to other elements of access, results in expanded conceptions of accessibility within the disability blogosphere.

Form and the Effects of Inaccessibility

If disability at the point of entry is understood as influential at all other sites from which access may be analyzed, it is in some ways most pronounced in considerations of form. The forms of media may be accessible or inaccessible to an individual with a given disability, and this inaccessibility may shape subsequent decisions about the content and uses of online media. Inaccessible sites, multimedia elements, or presentation formats represent palpable barriers to meaningful access; inaccessible media is presented in a form that cannot support a given individual's embodied abilities, and unsurprisingly, many individuals will not make use of such content. Less directly, online content that is presented in a form that is unpleasant due to a particular disability is regularly avoided, as are sites and companies that have a reputation for inaccessibility. Many bloggers in my field research indicated that there were particular online experiences that they could not, or chose not to, access. Though certainly studying individuals' ideas about sites they avoid has all the challenges of proving a negative, in addition to necessarily relying upon the fallible memories of individuals, my inclination has been to treat these portions of interviews, as well as blog posts, as experientially truthful. They may not be strict, unfiltered statements of truth, but they are real in the sense that participants believe them to be so, and thus they shape participants' online choice and experiences. Broadly, the dominant forms of inaccessibility and avoidance seen in this disability blogosphere centered around typing, navigation, and audiovisual material.

Typing was a source of difficulty for bloggers with a range of disabilities, who often needed an alternative means of producing text on the computer and on the web. Traditional keyboards, and attendant desk configurations, were unpleasant if not impossible for many users with disabilities. This barrier to access is perhaps more related to accessing a computer than the web, although website that support input from devices such as screenreaders, or accept alternate forms of input can reduce hurdles for users. Despite the availability of some assistive technologies for typing, it is common for users with typing difficulties to "try to avoid typing as much as possible," which may constrain their use of websites and services. Software that converts text to speech, or vice versa, was used by a majority of visually impaired users, but was also used by individuals whose disabilities affected their typing. Voice conversion software, however, presents its own challenges. In a blog post at This Ain't Livin', writer s.e. smith reflected on growing hand pain and the possibility of moving to this kind of software, writing, "I wonder how it will change my writing voice, how the loss of my hands would also take my voice away, and what that might mean or look like, precisely."[31]

Conversely, some users preferred typing to speaking. Writing was extremely important to many bloggers with disabilities, as might be expected among prolific producers of online written material. The chance to organize, edit, and clearly communicate thoughts via writing was valued. Typing was thus particularly valuable for many people with disabilities that affected their oral communication abilities. These users generally had sufficient mobility in their hands and lower arms to find typing easy, but this did not always entail a traditional desk set-up; wheelchair users sometimes found laptops easier to maneuver than interfacing with a desk, and touchscreen devices were popular alternatives to keyboards for users with a range of physical impairments, including fibromyalgia, spinal muscular atrophy, and cerebral palsy.

The most popular touchscreen devices for typing were not assistive technologies, per se, but popular consumer products such as the iPad 2 and iPhone 4S. Blogger Blake Watson regularly uses an app on his iPhone that connects wirelessly to his Mac and allows him to type on the small screen with less physical effort. Similarly, blogger and student Anna Hamilton stated that her iPad was "immensely useful from a disability standpoint—typing, for example, is easier for me to do on the iPad than on a standard laptop keyboard." For a visually impaired blogger with residual vision, using Twitter and blogging on an iPhone 4 (with built-in assistive technology) was just as easy, if not easier, than using a computer. The benefits of Apple touchscreen products were such that, over the course of my time in the field, several other bloggers expressed desire for an iPad and blogged about the progress of eye-tracker studies, development of iPads that could use breath input, and patents for the integration of the iPad and assistive technology. Even more notably, upon the death of Apple founder Steve Jobs, an outpouring of gratitude was seen across my disability blogosphere.

Jobs' death provided an occasion on which to mark Apple's accessibility efforts. Many disability bloggers wrote about the importance of Apple technology in their own lives, which was echoed in my interviews. Immediately following Jobs' death, many members of the blogosphere posted to the Twitter hashtag (#thankyoustevejobs), aligning their memories of Apple as transformative for disability with mainstream public expressions of appreciation. Like many others, bloggers with disabilities shared their memories of Apple products, including how it enabled the use of necessary assistive devices at various points in their lives. One Canadian blogger and accessibility advocate, who had previously blogged about the value of her iPad and the Proloquo2Go app in allowing her to communicate with people who could not understand her vocalizations due to her cerebral palsy, wrote a post thanking him for contributing to her

independence by fostering communication. Other bloggers focused on Jobs' persona as inventor, applauding his success and finding inspiration, as on Watson's blog, I Hate Stairs, where a post concluded, "The technology inspired by Steve Jobs has helped me keep going when my atrophied body was trying to stop me. I applaud his accomplishments and am grateful for his help."[32] In the weeks following Jobs' death, videos and news stories about him continued to circulate in the disability blogosphere, including pieces emphasizing the possibilities of Apple products for people with autism, limited speech ability, and other disabilities. The attention around Jobs' deaths, and the recurrence of Apple products in discussions of accessibility barriers and solutions, suggests that contemporary experiences of disability online are increasingly grounded in the same technologies used by mainstream users, though they may be used in different ways. In the case of difficulty typing, for instance, the widespread use of touchscreens made for a consumer audience, and not specialized disability-centered assistive devices is an important shift in extending affordable access and cultural relevance to people with disabilities.

Barriers related to typing spilled over into the difficulties that several bloggers had with navigating web pages. Navigation, the process of selecting and following links in order to reach desired content, is a fairly web-specific phenomenon, made better or worse by the individual coding decisions of each individual site. For users with visual impairments, unclear navigation constituted a major barrier that could not be solved by assistive technology. In our interview, blogger Mark Willis discussed his reliance on his chosen screenreader, ZoomText, and his unwillingness to spend time on sites that the software couldn't interpret. Without the ability to access navigational content, let alone other content on a page, the experience of web browsing was constrained. A second navigational challenge, for visually impaired users and others, was the use of pop-up windows, frames, or in Watson's words, "any site that I feel like is gonna take

control of my browser." These features were avoided, and decried, as they took away user control of the web experience; this control is particularly important for individuals with disabilities who use assistive technology, have limited energy, or otherwise want to streamline their online experience.

A final major category of inaccessible web content involved the use of audiovisual material, whether video or animation. These barriers were experienced by expected groups, people with visual or auditory disabilities, as well as by individuals with attention-related impairments or dizziness symptoms. In the case of sensory disabilities, closed captions or auditory descriptions may alleviate some barriers by allowing access to content, but the provision of such measures online remains unusual. In other cases, however, avoidance remains the primary means of coping with inaccessibility. Blogger Marissa, who experiences extreme dizziness in a range of circumstances, explains it simply: "If I go to a site, and I get sick, I'm reluctant visiting the site again." Following her interview on web designer Jeffrey Zeldman's podcast, The Big Web Show, Marissa is regularly asked if particular animations or other moving features make a web page inaccessible to her; this solicitation is bittersweet, as she both wants to help and dreads looking at sites that may cause her to feel sick. Ideally, Marissa says she'd like to be able to turn off intrusive audiovisual content when a page loads, rather than being forced to endure it before accessing the content she was looking for; this expectation aligns with web accessibility policies, but has not yet become standard practice, forcing continued avoidance on the part of individuals.

In typing, navigation, and audiovisual content, disability at the point of entry in combination with the particular forms of hardware and software result in experiences of inaccessibility and avoidance that subsequently shape many users with disabilities' online

experiences. The similarities of experiences of inaccessibility across impairments and types of content may suggest that, as Goggin and Newell observed about blind online communities, inaccessibility shapes the community.[33] The shared barriers and strategies may shape community values and meanings around accessibility within a disability blogosphere. Insofar as accessibility is discursively constructed through its opposite, inaccessibility appears to mean not just impossibility of use, but unpleasantness of use. It is not just solved by assistive technologies and coders' decisions, but is actively managed, avoided, and thought about through individual decisions and community resources. These will be discussed in more detail in relation to content and use, where disability at the point of entry results in hightened interest in disability-related content and using the web for community engagement and individual expression.

Content and Community

Turning to how disability at the point of entry is connected to decisions about content, many participants in my disability blogosphere exhibited a strong interest in sharing and producing content directly related to disability, as well as an interest in forming communities around shared interests and experiences. Certainly, there is nothing unusual about the importance of identity categories and lived experiences to the choices of online content, as the web has been celebrated precisely because of the wide variety of interests that may be pursued online. However, these articulations are rarely made central to analysis of online content, and the particular relationships between identity and content are worth considering as an important component of what constitutes meaningful media access.

Perhaps some of the most notable forms of content in terms of connection to disability at the point of entry were blogged news stories and discussions of US politics. Tumblrs and

Twitters were often full of news stories reblogged from national news sources. Not all, or even most, were directly related to disability, though some bloggers were more tightly focused on disability news than others. Coverage of disability-related news that was popularly reblogged included physical accessibility cases, issues in higher education, reports and opinion pieces dealing with health care (especially the Affordable Health Care Act), local cases of abuse of people with disabilities, and sometimes cases of discrimination or other civil rights violations. This content is obviously of special interest to people with disabilities, who may find it directly relevant to their lives and directly related to their politics, in the case of particularly active participants in disability activism. Other news stories that were shared, most often with only one or two sentences of commentary, on blogs, Twitters, and Tumblrs included cultural reporting, articles related to a broader social justice agenda (including pieces on police brutality, women's health, or racial inequities), coverage of the economic climate in the US, and political news. The last of these was particularly widespread, with many disability bloggers engaging quite deeply with posts about political battles and, as the 2012 Presidential race began, electoral candidates. A blog maintained by a man who was also employed in academia, for instance, featured ongoing coverage of state-level politics as well as occasional commentary related to the Republican primary race and his fears for people with disabilities should Republicans enact goals of cutting social supports. On other sites, bloggers shared lengthy essays dealing with political developments, evidencing a highly developed critical ability and a nuanced understanding of the issues at play.

The popularity of sharing news, particularly disability and political news, in this space seems to indicate the expression (and perhaps formation) of a disability identity that privileges being well informed about and critical of the state of the world. Not mere passive recipients,

these bloggers often shared content, spreading it among their communities, and provided their own commentary. This commentary, whether lengthy analytic essays or brief comments preceding a Tumbler post, most often indicated either the importance of the shared material or described the blogger's critique of the material, setting up readers to read it with a critical eye. Only material considered important (and trustworthy) would be shared without comment. Just as crucially, these news posts were often understood to be shared with a variety of readers, but to be particularly aimed at a given community believed to benefit from the shared content. The awareness of audience in these posts indicated that sharing within a community of like-minded people was as important as sharing individual insights.

Many bloggers experienced various forms of community within their online lives, including communities centered on disability and the sharing of information that went beyond news. Blogs, in some cases, functioned as community resources with tips for on- and offline life. Blake Watson, a twenty-something college graduate, began his blog as an attempt to reach out to parents of children with spinal muscular atrophy in order to demonstrate that a full life was still possible for these children. Another blog, run by a Christian paraplegic woman, attempts to provide resources for people who are newly paraplegic, including practical and inspirational videos of paraplegic individuals completing various activities. She has received significant support from that community, and it is one reason that she continues to blog. Similarly, blogger Marissa began her blog because she had not seen resources for young people with her particular health condition, so "I just figure my own experience maybe will be able to help out the vestibular community." She now uses it to highlight other little-known disabilities, combining service to her particular community with broader education. On This Ain't Livin', smith has a series of "Servicey" posts, covering everything from writing a Congressperson to fire

extinguisher safety. Many blogs occasionally posted information about disability legislation, including ADA fact sheets, references, or URLs for particular social services. All of these efforts bridge any online/offline divide, and rely on and call into being an active, possibly political disability identity.

Beyond the seeking and sharing of information, the existence of the disability blogosphere itself, in its mutual links and cross-site conversations is indicative of a particular kind of community content that has been sought out by these bloggers over the years. Many bloggers who were interviewed recalled first setting up their own sites, and only later discovering broader communities of bloggers with disabilities, often through Disability Studies - Temple University. Their extensive blogroll, which I used in constructing the field, similarly served to expose many bloggers to others writing about disability. Watson, for instance, started his blog and then:

> sort of found all these other disability blogs and it sort of […] I got really interested in, like, just disability issues for awhile. For awhile I got into greater political, not political maybe, but more societal, like, type discussion. And later, I got on this thing about assistive technology, and then… so it's all over the place now!

In tracing his trajectory into and around a disability blogosphere, Watson provides a typical example of how individuals' interests, and the importance of disability at the point of entry to their pursuit of those interests, may shift over time.

Blind Photographers, as a blog and Flickr site with an active and encouraging forum for members, served a similar central role for people with visual impairments and an interest in photography. Willis recalls that this community actually found and reached out to him, seeing his blog, and became a key part of his online experiences for a time. This community even served as

an incentive for him to join Twitter, as they gradually moved away from static posting to sharing via social media.

Just as these communities may form, they may also dissipate. Many bloggers considered themselves to have been part of a community in the past, but to have left it or found it less relevant since then. The case of Feminists with Disabilities provides an example of a community that came together and then dispersed. Its nine founders came together through email, discussing the failures of the broader feminist blogging world regarding disability. From there, they launched a group blog dealing with disability, feminism, and social justice, intentionally forming a community that would address the gaps, insensitivities and inaccessibility that were common on other sites. On January 1, 2011, the site ceased posting with a message that began, "We agreed when we began that this site wouldn't run indefinitely, that we would move aside when the time has come, and that time has come." More commonly, individual bloggers found that their interests shifted and they "kind of dropped out" or they "don't have the attention" to participate in a dispersed network of bloggers regardless of the topic. Some bloggers have also moved out of particular networks or communities because of fatigue, political disagreements, or feelings of alienation from groups of sites. The fluidity of movement in and out of community is not unusual in online spaces, and indicates the varying levels of importance that disability may have as a shaping influence on access at the site of content.

Considering the content sought out, and the communities formed, by bloggers with disabilities demonstrates that disability is a salient feature of their online content experiences. Furthermore, the spreading of information in the form of news, skills, or personal stories seems to be a commonly encountered and produced form of content, indicating that this space is one in which knowledge is valued. Discussing content has necessarily slid into discussions of use, as

creating, reading, and sharing online materials are distinct uses of content. In the next section, I discuss uses in more detail, focusing less on the content than on the activities involved.

<u>Use, Creativity, and Careers</u>

The connection between disability at the point of entry and the uses of the web chosen by bloggers with disabilities can be either quite direct or more oblique. In cases of non-use, particularly, articulations of disability and form often result in inaccessibility and avoidance, as discussed above. In other cases, bloggers make use of particular sites and online activities despite some inaccessible elements because its overall value is more important than inconveniences of use. Thus, the uses of online media by bloggers with disabilities vary, and encompass many of the same activities common among other users of participatory online media: producing, sharing, consuming, and learning.[34] Occasionally, these activities are pursued not just as hobbies or outlets, but as incremental steps toward various professional careers. And finally, in some cases, bloggers perform the practices of web accessibility itself, learning standards and best practices in order to improve accessibility for their communities.

Sharing is a particularly common activity within the several creative communities that overlapped with the disability blogosphere. Whether photographs shared on Flickr or knitting projects posted to Ravelry, many bloggers linked from their blogs and Twitter accounts to sites on which they shared creative or artistic content that they had produced. For the most part, the sharing of creative work occurs without obvious connection to accessibility or disability from the perspective of viewers. From the perspective of the creators, however, the production of such work often involves assistive devices or accessible technologies, which are used in the creation of a creative artifact but not in its display. Such techniques can be the topic of active discussion,

particularly in the case of the *Blind Photographers* community, whose Flickr forums are full of camera and related technological recommendations for low vision photographers. Importantly, the sharing of these creative works occurs through the same participatory sites used by web users without disabilities, and for many of the same reasons. The articulation between disability and use is less remarkable here because of its unique effects on access and use than because of its similarities to the conditions of access seen in preferred user positions.

Turning to production as an example of use, written content that is explicitly produced for an audience or as part of a career provides an interesting case. Many people use online platforms as forms of self-publishing with which to launch writing careers, and people with disabilities are no different. In fact, the opportunity to use online platforms in this way may be even more important to people who often have fewer employment opportunities or face other barriers to traditional career paths. Individuals who produce online writing may not even consider themselves bloggers, per se, but writers. smith, when asked about blogging, clarified that she considers herself a writer and journalist, and noted that she produces work for a variety of international print and online publications. In fact, following the conclusion of participant and observation and my interview with smith, I was interviewed for one of these non-blog pieces. Participants in the disability blogosphere have careers as reporters, academics, poets, or regularly produce content such as book reviews, pieces for online magazines, or articles for special interest publications. For such writers, the web offers a place for personal writing, working through ideas, and promoting their other written works. Again, this practice and the motives behind it may be quite similar to those of non-disabled users, although disability may make web writing more useful as a means of building a portfolio and establishing a career.

Finally, some bloggers use online media as a space in which to learn new skills, including the skills involved in developing accessible web content. This practice, unlike those described above, is in many ways directly connected to experiences of disability at the point of entry, as those experiences seem to increase understanding of the need for accessibility and participation in the kinds of communities discussed above can increase a sense of responsibility to make accessible web content. Most of these bloggers have learned about accessibility within communities, via word of mouth, as well as through WCAG documents and web development sources. Yet, even among those who do attempt to produce accessible content, there is a reluctance to describe oneself as knowledgeable about web accessibility, a sense that it is a professional or otherwise alien pursuit, and a resentment of the expectation that people with disabilities are automatically knowledgeable or must undertake self-advocacy to have basic accessibility needs met.

Many participants in the disability blogosphere attempt to produce online content in accessible forms. This most often includes providing alternate text for images, transcripts for video, and perhaps simplifying navigational components. Accessibility was a major concern at Feminists with Disabilities, co-founded by abby jean, Amandaw, Lauredhel, Moira Adams Brown, Anna Hamilton, Brandann Hill-Mann, Chally Kacelnik, Anna Pearce, and s.e. smith. On that site, they attempted to respond to and implement accessibility requests from readers, knowing that accessibility was of concern to their audience. This was largely possible because the site was self-hosted, and could be customized as necessary to implement accessibility best practices. In her blogging elsewhere, using Wordpress and other platforms, Kacelnik finds that she "[has] to work with what they give me." The limitations of existing Web 2.0 platforms are a source of frustration for many, as bloggers are torn between wanting to provide accessible

content and wanting to participate in online content production as easily as others do. Wordpress and Tumblr both came up in blog discussions and interviews as specific sites that have poor accessibility; Wordpress' image tool incorrectly implements alternate text, and Tumblr's image-posting feature offers no place to put alternate text. These barriers, among others, lead some to avoid these sites entirely.

Often, the production of accessible content is a use of web media that is learned in concert with a community in order to better serve that community. At Feminists with Disabilities, accessibility was crucial because bloggers knew that their audience would likely need these features, and thus they provided them and were open to making changes as people requested particular accommodations. Here, as elsewhere, accessibility was largely something that they learned through practical experience. The process usually began with conversations with people who had specific access needs, moved to researching accessibility best practices or talking with specialists, and then finally implementing changes. As s.e. smith explains, on ou own sites, ou encourages conversations, publishing "accessibility policies so people know who to contact about specific accessibility issues. When people raise concerns, I attempt to address them to the best of my ability." It seems that much accessibility knowledge is self-taught, out of a desire to provide accessibility for a community, or is learned directly from that community. Fuck Yeah, Accessibility, for instance, is a Tumblr dedicated to archiving information about how to make your Tumblr more accessible, offering a central location at which to learn about accessibility from others. This collaboration and sharing of accessibility knowledge is particularly crucial given the lack of responsiveness of many large sites, including Tumblr, to accessibility problems.

Many sites within the disability blogosphere chronicled cases of "accessibility fail" in which sites received requests for accessibility measures but did not implement them, and sometimes responded hostilely or with what many bloggers called "resistance." Beyond the lack of accessibility on mainstream sites like Tumblr or Twitter, particular sites and blogging communities have been unresponsive to calls for increased accessibility. The US-based feminist blogosphere was repeatedly criticized, as it is a space in which many people with disabilities might like to engage, but one that has repeatedly ignored accessibility requests ranging from transcripts of videos to the use of descriptive text for links. Several times, this community has had major comments debates and discussions around greater inclusion for readers with disabilities; though these predated my research, their effects continued to be felt, as some moved to avoid these sites.

Nearly all bloggers who encountered the rejection of accessibility requests discussed it in terms of "resistance," suggesting that there is an underlying, unquestioned belief that the needs of people with disabilities are less important than those of others. Such resistance was on display in an email exchange posted to You Fail at Accessibility, among other sites, in which an individual contacted Six Billion Secrets to say that their design changes made the site no longer accessible to her, and she would hate to have to stop reading. The staff member who received her request quickly escalated, accusing her of making threats. Further communication revealed that he was ignorant of how uses of color can cause problems with particular medical conditions, and suggest that there was a generally positive outcome. However, the lack of awareness around accessibility at this company was significant, and the initial overreaction at being asked to change is exactly the kind of "resistance" that many people with disabilities face in asking for accommodation, discouraging them from doing so.

Resistance, unlike responsiveness, does not investigate accessibility practices, engage in conversation, or make changes without complaint. However, in calling this attitude "resistant," there is an implication that these beliefs can be broken down through ongoing efforts, and that change might come despite the disinclination of those asked to increase accessibility. There is the possibility of change, but it depends on the continued efforts of people with disabilities to advocate for their needs and have those demands heard. Online, as in the cases of telephone and television accessibility, there is an expectation that people with disabilities self-advocate, bringing their needs to the attention of people and institutions who have ignored them. Goggin and Newell refer to this as a requirement that people with disabilities be "active consumer-citizens,"[35] and it is in some ways complicated online, where neither status as a voting citizen nor as a paying customer may apply. In petitioning Facebook for accessibility measures, for instance, users of the free service have limited space in which to negotiate, as they have no possibility of direct action. In such cases, self-advocates may find themselves reduced to "asking nicely," a tactic which, they report, almost never works. In September 2011, several sites in the sample covered a post, originally made at journaling site Dreamwidth, in which the author described exactly how "asking nicely" failed to produce results due to the resistance of those individuals and companies she spoke to.

One of the dangers of asking people with disabilities to self-advocate around accessibility online is that it can foster the expectation that they are experts, willing to provide free advice. Thus, in addition to regularly meeting with resistance, some people with disabilities are called upon to perform the very labor of accessibility, regardless of their interest in doing so. For instance, one blogger, a woman with a physical impairment who is employed in the web industry in addition to maintaining personal blogs, has found that although her disability is centered on

not walking well, her colleagues and those she meets often expect that she will have accessibility

expertise. A similar situation is eloquently described by smith:

> People assume I am available as a free accessibility consultant and the burden of access is
>
> placed on me as a disabled person, rather than on people creating spaces as creators of
>
> spaces. The fact is that accessibility consulting is actually a paid job that involves a lot of
>
> comprehensive knowledge, and people seem genuinely shocked when I indicate that I am
>
> not available to provide free consulting services and they really need to work with an
>
> expert, especially if they are working on something like a major website with high traffic.

The notion that "asking nicely" is sufficient is brought up here once again, showing that the onus

is placed on people with disabilities to break down resistant attitudes, provide expertise, and

otherwise help the mainstream understand accessibility. This retains the assumption that

accessibility is unique, set apart from other concerns of web development, usability, and access

in general, perpetuating structures that set disability apart from mainstream society.

Beyond using the web to advocate for accessibility, or implementing the practices of

accessibility on their own sites, some bloggers in the disability blogosphere are using web media

in order to pursue careers in web development. A Canadian accessibility consultant with cerebral

palsy who blogs at Do It Myself Blog launched a second site, Blog Accessibility, in 2010. There,

she posted slides from talks, which later developed into an e-book and a six-part online course,

called "Blog Accessibility Mastermind," as well as regular blog posts on accessibility. Other

bloggers in the disability blogosphere are using blogging, Twitter, and other online tools as a

means of forming connections with an eye on becoming professional web developers interested

in accessibility. Their experiences with inaccessibility and their love of web media would seem

to make them excellent candidates for positions as testers and developers, but as Marissa points

out, there are now stultified paths to success in web development, most of which involve a computer science degree and experience in a design agency, which are not always attainable for people with disabilities. Similarly, Watson has a degree, and has had jobs in web development, but is now keeping up his skills through freelance work while trying to find a job that will allow him to work from his home. As Marissa struggled to become self-taught and access education in compliance with the Department of Rehabilitation, she has questioned the accessibility of the very profession of web development. As she wrote to web guru Jeffrey Zeldman, she was "seeing the disconnect between the web accessibility movement and those that are actually disabled." Marissa wondered if, even as web development and design promote the accessibility of content, these careers were not open to participation by people with disabilities. In her appearance on Zeldman's podcast, The Big Web Show, Marissa described her efforts to learn these skills, answered questions about her disability and its effects on web use, and got advice from the co-hosts and callers. This undoubtedly increased her visibility, resulting in the accessibility queries described earlier. Since her appearance, Marissa has enrolled in online courses and begun studying through teamtreehouse.com's reduced cost student plan. She is optimistic that accessibility will increase in these careers, and her own future is brightening.

In noting a disconnect between the experiences of people with disabilities and web accessibility as a field, Marissa articulated a commonly expressed sense that "web accessibility" is a remote, official, or professional practice. Despite their navigation of inaccessible content, and efforts to create accessible content, bloggers were reluctant to describe themselves as knowledgeable about web accessibility. Perhaps reflecting the informal nature of much of their accessibility learning, many expressed the sense that they knew more than an "average web user," but not as much as others might. They often listed their skills or common practices, and

then expressed certainty that there was more to know, or listed areas they could learn more about. Anna Hamilton, for instance, interviewed by email and wrote that:

> I am somewhat knowledgeable, although I would like to be more so! I don't know a ton about accessibility from a technical standpoint (HTML, CSS, etc) other than providing image descriptions for pictures, and transcripts for musical or video material where appropriate, and not using .gifs or moving images out of consideration for migraineurs and people with epilepsy.

For Hamilton, as well as others, knowledge about accessibility was both learned through research and experiential. However, bloggers had differing levels of researched and experiential knowledge; some knew that accessibility standards existed, others did not, and still others had read them, and some knew about their specific needs but felt less knowledgeable than people with more extreme accessibility needs. Blind users, in particular, were brought up as a group who might have more experiential knowledge of accessibility. Yet even Mark Willis, who is legally blind, felt a disconnect between his lived knowledge of accessibility and the official policies:

> At a theoretical level, which would be at the level at which standards are defined and debated and so forth, there are probably a lot of things I don't know. At a practical, existential level, I wouldn't have a job, I wouldn't have a life if I didn't know something about how to make it accessible for me! … but, I have found myself feeling marginalized in discussions of web accessibility by people who are the stewards of the standards, you know.

The articulation of this disconnect demonstrates how the institutional aura of policy results in a failure to connect with the crucial audience of end users. As discussed in the previous

chapter, analyses of disability politics have long called for the further inclusion of people with disabilities in the making of policy, in order to foreground their interests and bring new perspectives to the discussion. This, in fact, is Marissa's larger goal, to go into web design and accessibility and know enough to contribute not just abstract theories regarding accessibility, but her lived experiences as a basis for possible change. The input of people with disabilities regarding accessibility policies and practices might be particularly valuable due to the expanded definitions of accessibility seen in the disability blogosphere. Vernacular understandings of accessibility go far beyond the technical, and the realm of policy, to undertake cultural critique of the web itself from a standpoint of disability, potentially shifting the context in which access situations for people with disabilities are formed.

Context and Expanded Concepts of Accessibility

The contexts of access for people with disabilities at the point of entry are largely similar to those for other users, but it is notable how the influence of disability at the point of entry results in challenges to that context and may potentially alter that context. From my time in the field, ongoing observations, and interviews, it appears that the most significant difference in how the disability blogosphere understood its context was in its definitions of accessibility. Certainly, accessibility was relevant at the site of form, and the production of accessible material was a fairly common use of online media, but more striking was the visibility of a discourse of accessibility that goes beyond the technical foci of existing policies to emphasize cultural components of access for people with disabilities.

Access to computer and internet technologies by people with disabilities could be addressed through several discourses. In earlier chapters, I referenced discourses of the digital

divide, the disability rights movement, and professional, technical, and policy discourses as

relevant frameworks through which to understand web accessibility. In their discursive analysis

of web accessibility, Alison Adam and David Kreps identified the digital divide discourse, the

social construction of disability discourse, a legal discourse, and a web accessibility discourse as

all contributing to understandings of accessibility.[36] The latter discourse they described as being

invested in standardizing development of the web, and they suggest that its dauntingly technical

nature can make it difficult to extend membership.[37] Ultimately, Adam and Kreps suggest that

none of these four discourses hold exclusive sway over accessibility, and that each has

something important to contribute to improving the salience of accessibility and thus expanding

its reach. The expanded conception of accessibility in this disability blogosphere may be a fifth

potential contributor to this discursive alignment, as it does not align neatly with any of the

discourses proposed by Adam and Kreps or seen elsewhere in my analysis. In some ways, it is a

radical reimagining of what accessibility should be and how it ought to be promoted, as it

encompasses cultural relevance and relies upon the spreading of information in a community that

is so characteristic of this blogosphere.

These alternate conceptions of accessibility extend beyond the provision of discrete

features, such as wheelchair ramps or alternate text. In fact, many definitions of accessibility did

not even explicitly connect to disability status, but to the needs of individuals or groups. In

interviews, when asked to define accessibility, bloggers initially hesitated, perhaps reflecting the

sense that it was an exclusive professional concept. However, once they started, their statements

coalesced around the idea of providing access for individual needs across a broad spectrum:

"providing access so that people can participate"; "the extent to which someone can access or

use something"; "as many people as possible"; "the range of needs a population may have in

making use of a particular service, place or thing"; "not a one size fits all kind of thing"; "used by the widest possible audience/consumer." These definitions prioritized individual needs and experiences over the idea of disability as a discrete category to be ameliorated by accessible practices. Such a perspective has the potential to broaden the definition of accessibility by expanding the term to relate to issues of customization and personalization that could by enjoyed by a diverse population.[38] This inclusive definition of accessibility, however, clashes with technical and legal discourses that require greater specificity about the intended audiences of accessibility policies. Though the W3C has made significant efforts to publicize the benefits of accessibility for people other than those with disabilities, the core accessibility documentation prioritizes disability. For the U.S. legal system, accessibility measures are based upon the status of people with disabilities as a protected class under the Rehabilitation Act and Americans with Disabilities Act, limiting the ability of that official discourse to speak to the individualism that is core to many bloggers' understandings of accessibility.

Beyond this emphasis on the individual level of accessibility, many bloggers used language of "thinking" to describe how and why accessibility is important. Kacelnik suggested that:

> a lot of people who aren't disabled have the unarticulated idea that a given thing, place, or service is "naturally" or by default constituted in a particular way, and accessibility is about making adjustments so that it can be used by people with a narrowly imagined range of disabilities and needs… I think accessibility should be about radically re-imagining the kinds of people who are welcome to, or might want to, make particular uses of things or live particular kinds of lives, and making that normative.

This statement emphasizes the imaginative components of disability, technology, and accessibility. She indicated that unexamined attitudes and patterns of thinking are a barrier in accessibility implementation, and suggested that accessibility requires "re-imagining" or otherwise changing those ways of thinking from the ground up. Others called for people to "stop and think about it," or give web design "some extra thought" in order to make things more accessible. These statements imply that accessibility is a matter of challenging dominant assumptions, requiring extra intellectual effort initially. They equally imply that the solution is tractable, that extra thought would most likely precipitate change. "Thinking about it" is regularly contrasted with the types of resistance described above, suggesting it is a first step towards responsiveness. This language likely draws on the self-education of many bloggers with disabilities, who at some point began thinking about accessibility in terms beyond medicalized accommodation. Finally, those who used language of "thinking" also often made connections to universal design and the possibility of making technology more usable by a wide audience that, again, was not defined by disability.

The most significant expansion of accessibility in this disability blogosphere, however, was concerted advocacy for a kind of "cultural accessibility." That is, many bloggers expressed a need not simply for technical changes, but for welcoming attitudes, inclusive politics, and access to tools of production. Kacelnik, for instance, avoids several sites due to her disagreement with their policies (such as Google Plus' attempt to institute a "real name" policy), or her evaluation of their usefulness for her purposes. She avoids Tumblr because she "found it a toxic and counterproductive medium in which to have discussions about social justice." Considering that, as we discussed and she later posted to her blog, exploring intersectional identity from a social justice perspective is a major theme in Kacelik's writing, Tumblr's inappropriateness for hosting

that material makes it culturally inhospitable. Cultural accessibility requires the provision of culturally relevant content in culturally appropriate or desirable forms.

The idea of cultural accessibility can be further understood through s.e. smith's formulation of "emotional accessibility," through which ou argues that access is not simply entry to a space, but the ability to feel safe and comfortable within that space. It is a matter not of technical change or accommodation, but of an attitudinal shift, similar to the changes that might come about through "thinking about it." Ou continues, "Having emotional access to a space means you're welcomed in that space with an inclusive, rather than tolerant, attitude," using the example of how hostile attitudes about mental illness could make a space inaccessible, regardless of physical or technical elements.

Cultural accessibility, however, is not merely making spaces welcoming and inclusive to consumers, or information-seekers, but must encompass welcoming the voices and cultural productions of people with disabilities. Blogger Mark Willis has discussed this in terms of "reimagining accessibility," againing recalling the discourse of thought, arguing that, "it's not enough to just consume information or just consume media. Accessibility today, web accessibility today, must include accessible means and methods for producing media." He has expanded on this idea online and in academic contexts, including a presentation at Media in Transition in 2007, in which he discussed the cultural power of blind photographers looking back at the world. Rather than the subject of art, they could be its producers, and bring new perspectives. Willis considered this particularly crucial in the context of participatory culture, as boundaries between consumption and production blur for mainstream users, and should blur for web users with disabilities. Looking to the websites, Flickr, and Tumblr accounts maintained by visually impaired photographers, some of this blending is already occurring; the distinctions

between one's own photographs and those reblogged from others are less clear on Tumblr, for instance, and together they create a sense of artistic perspective that is grounded both in creation and distribution of content. Importantly, the loose community of blind photographers, dispersed over Twitter, Tumblr, Flickr, and various blogs, creates a culturally accessible space. Within this space, different conversations about art, vision, disability, and creative process can occur than may be had elsewhere, and certainly it is a welcoming participatory cultural space that aims explicitly to be inclusive. Though a much less explicitly political community than is seen elsewhere in this disability blogosphere, this network of blind photographers demonstrates cultural accessibility.

Through the lens of cultural accessibility, the need for responsiveness to accessibility concerns, and the problems with resistance, take on a new light. As s.e. smith wrote on her personal blog, "Resistance to disabled people makes the world inaccessible for us." The kinds of changes advocated by many bloggers go well beyond adherence to official policies, though they would undoubtedly appreciate that. In fact, the changes that would create cultural accessibility are the kinds of changes that are at the heart of a disability rights movement in which human physical and mental variation is divorced from value judgments and is an expected component of everyday life. In that way, the relationship between disability at the point of entry and the forms, content, and uses of online media may lead to changes in the broader sociocultural context in which individuals encounter and access online media.

Conclusion

In this chapter, I have considered the lived experiences of accessibility within this disability blogosphere for several reasons. First, it counter-balances the analyses of policy and broad

cultural contexts that include representations of disability by allowing the perspectives of web users with disabilities to be heard in relation to these questions. Rather than a mere analytic deconstruction of the uninhabitable preferred user position, relying upon the voices and actions of bloggers with disabilities demonstrates how other use positions are forged and how those in these non-normative positions negotiate elements of preferred use situations in order to make mainstream online media useful to them. Similarly, in presenting these voices and experiences, the goals and struggles of policy are put into a different context–they are considered for their effects and their alignment with user needs, rather than for their effectiveness or successful implementation. Secondly, this ethnographic chapter demonstrates how the study of access is not determined, but is significantly affected by the conditions at the individual point of entry. Taking disability as the relevant vector of analysis, I have demonstrated that it is made more and less relevant at various sites of access, and in various circumstances. Where disability was hugely relevant to experiences of form, it's relationship to content was more tenuous, as the content sought out and produced within the disability blogosphere bore many resemblances to mainstream online content. Finally, analysis of access in terms of the point of entry must go beyond simple demographic information in order to consider the ways in which social identity, resources, skills, and bodies are experienced and articulated in actual access experiences. Ethnographic research is particularly well-suited to discovering how these relationships are formed and understood, and may reveal unexpected results not otherwise available for study.

Perhaps the most surprising element in my field work and interviews was the way in which disability at the point of entry resulted in the formation of loose communities in which accessibility was redefined in ways that were far more subjective and culturally focused. The development of ideas about cultural, emotional, or reimagined accessibility demonstrates the

wealth of theoretical knowledge being built out of experiences and self-taught skills within this blogosphere. The discourse of accessibility that circulates in these spaces emphasizes individual needs, variable solutions, and the processes by which people with disabilities self-advocate and attempt to foster accessibility online. Additionally, it demonstrates the ways in which the beneficiaries of accessibility policies may not feel entirely comfortable with those policies. Participants' sense of official accessibility discourses as alienating reflects a reluctance to claim experience as the basis for accessibility knowledge. Nonetheless, participants have developed their own strategies for dealing with, or avoiding, inaccessible forms of online content.

Given the importance of spreading information and sharing skills, knowledge about accessibility within this blogosphere might best be described as webbed. Skills and interpretations of accessibility are passed along through interlocking websites, conversations, and relationships. Much practical knowledge was learned initially through word of mouth, and learned in order to sustain welcoming sites for particular communities. Similarly, there is ongoing discussion about what accessibility, online and off, might look like; across sites and over time, it appears that there is consensus forming around accessibility as a mixture of individual, technical, and cultural factors.

The emphasis on cultural accessibility demonstrates that accessibility is far more complex than a matter of technical specifications. It is deeply connected to larger social issues, including attitudes about disability and inclusion. When disability is not valued in a culture, physical and technological structures are not accessible by default, the cultural contributions of people with disabilities are largely invisible, and attitudes of resentment characterize requests for accommodation. When disability is valued, there is a much greater potential for spaces to by

physically, technologically, and culturally inclusive; inclusivity, rather than accommodation or even accessibility, is positioned as the ultimate goal.

Cultural accessibility is relevant at all sites of a circuit model of media access, and for that reason I discussed it above as a possible influence on the context in which access occurs. It offers a way of describing the larger sociohistorical context, and it shapes the forms, content, and uses of media. In this way, it recalls Ellis and Kent's elaboration of "cultware" as a component of digital media use. In theorizing the point of access, they draw attention to hardware, software, wetware (the human body) and cultware as mutually influential elements in an individual's access to computer and internet media. They suggest that while the other three elements define a particular point of access, cultware "describes the digital and analog environment in which the user is embedded and the value and characteristics of that environment."[39] Cultware, then, is essentially a way of linking the cultural context of computer and internet use to the specific articulations of bodies and technologies. Beyond these links, cultural accessibility offers an expanded notion of accessibility that has broad political implications regarding preferred configurations of access, civil rights, and social inclusion. The perspectives and experiences within this blogosphere thus offer a rich theorization of access, in addition to demonstrating that characteristics of the point of entry are variably articulated to the sites of content, form, use, and sociohistorical context, producing endless variations of access that affect many different elements of an individual's experience with online and participatory media.

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[34] Axel Bruns, *Blogs, Wikipedia, Second Life, and Beyond: From Production to Produsage*, Digital Formations v. 45 (New York: Peter Lang, 2008); Jean Burgess and Joshua Green, *YouTube* (New York, NY: Polity Press, 2009); Henry Jenkins et al., *Confronting the Challenges of Participatory Culture: Media Education for the 21st Century*, Building the Field of Digital Media and Learning (The John D. and Catherine T. MacArthur Foundation, 2005), http://www.newmedialiteracies.org/files/working/NMLWhitePaper.pdf; Colin Lankshear and Michele Knobel, eds., *A New Literacies Sampler* (New York, NY: Peter Lang Publishing, 2007).

[35] Goggin and Newell, *Digital Disability*, 54.

[36] Alison Adam and David Kreps, "Disability and Discourses of Web Accessibility.," *Information, Communication & Society* 12, no. 7 (October 2009): 1041–1058.

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Conclusion

Circulating Media through Circuits of Access

Today, almost a decade after the launch of Web 2.0, social networking sites have become increasingly pervasive as a hub through which individuals conduct social relationships, share information, and encounter entertainment media. As social media has become integrated with mobile devices enabled with 3G and 4G data networks, as well as with consumer devices such as "smart TVs," individuals have been given the option of accessing social networking sites such as Facebook, Twitter, and Google+ nearly at will. The rise of social media has enabled the sharing of online media texts, through the production of memes,[1] the sharing of viral video,[2] and other forms of "spreadable media,"[3] which can be selected and shared by individuals to large numbers of followers via social media. Although viral video has been taken up as a possible tool for marketing, stimulating word of mouth around often low-budget ad campaigns, it also signals an important shift in agency to individual web users, who, in small ways, take up positions as not just consumers, but distributors of media. The memes, videos, commercials, and news pieces that spread through these channels can act as "mediators of ideas that are taken up in practice within social networks."[4] The practices of sharing through social networks are socially binding channels through which culture is brought to attention and potentially changed.

For all of its advantages, social media (like other forms of participatory media) is generally inaccessible to people who have disabilities that affect their use of the web. The advantages of online socialization, quickly spreading news and information, and culturally current entertainment media are thus not easily available to those who cannot participate. And yet, given that these circuits have the potential to mobilize political attention and action around

the issues of the day, including disability and accessibility, their inaccessibility is particularly

unfortunate. Twitter, in particular, has been the site of disability activism, but the service itself is

inaccessible, has no accessibility policy, and has not improved in the years since its launch.[5]

However, as seen in Chapter 6, many people with disabilities value participation in social media

and find alternative means of access, or endure discomfort, in order to access these advantages.

British college students living with cerebral palsy, for instance, struggle with abrupt and frequent

changes to the interfaces of social networking sites, but nonetheless consider these sites useful

and return to them willingly.[6] Additionally, the inaccessibility of the major social media sites has

led to innovations that aim to produce sites that are accessible in form and use, and that are

culturally accessible through their explicit inclusion of people with disabilities.

Easy Chirp, formerly known as Accessible Twitter, is a third-party service that uses

Twitter's API to produce a fully accessible alternative, web-based interface for using Twitter.

Developed by Dennis Lembrée, a web developer specializing in accessibility, in 2009, Easy

Chirp incorporates a range of accessibility features for people with a range of disabilities and

also functions as a more usable Twitter client in older web browsers or on low-bandwidth

internet connections. Lembrée has received enthusiastic support for Easy Chirp from visually

impaired Twitter users, users with other impairments, and the accessibility community at large.

Although he has met with Twitter executives to discuss accessibility, Twitter.com has not

changed its implementations to incorporate accessibility features, and other Twitter clients

remain generally inaccessible.[7] The stagnancy of inaccessibility in social or participatory media

may have its roots in the same struggles over design and audience described in the early 2000s,

as accessibility and "good" design, people with disabilities and a "mainstream" audience are

regularly placed in opposition to one another. In an interview with accessibility website

Accessify, Lembrée spoke to the inaccessibility of Twitter by saying that he thought "there's a misconception that a 'Web 2.0' site or app can't be cool or fun and be accessible at the same time. On the contrary, I find that it's quite possible."[8] In this simple statement, Lembrée demonstrates the central tension in accessibility implementation; it may be easy if considered from the outset, but seems arduous when it must be coded retroactively.

Furthermore, Easy Chirp improves the cultural accessibility of Twitter by enabling users with disabilities to participate in this site of social and spreadable media in the same way as other users, and without necessarily revealing their use of assistive technology. While Easy Chirp incorporates a number of accessibility features on the user's end, making Twitter more compatible with screenreaders and incorporating audio signals as warnings when users approach the 140-character limit of each tweet, the resulting tweets enter the general stream indistinguishable from those tweets coming through Twitter.com or any other Twitter client. This fosters full inclusion at a technical level, fosters use positions other than the preferred user positions upheld through Twitter's software, and potentially breaks down communication barriers for people with disabilities. In Lembrée's words, "it allows people to communicate who otherwise may not be able to well due to a physical or mental disability. It also helps break the social barrier with those who may at first be uncomfortable socializing with people with disabilities."[9] Thus, Easy Chirp may foster cultural accessibility by allowing for conversation on equal terms and providing tools with which people with disabilities may participate in Twitter, find communities of their choosing, and potentially mobilize around important issues.

An even clearer case of the intentional formation of a fully, and culturally, accessible form of social media is seen in the recent development of Dreamwidth, an online journaling platform that is similar to LiveJournal in its use for personal journaling, community building, and

media fandoms. Additionally, Dreamwidth has a reputation for being unusually accessible and inclusive, as seen in its Diversity Statement, which includes the statement "We think accessibility for people with disabilities is a priority, not an afterthought."[10] Two Dreamwidth communities that reflect the site's commitment to accessibility, albeit in very different ways, are Access Fandom and You Fail at Accessibility. The former attempts to shape fan communities in order to make them more accessible. This includes discussion of a range of accessibility practices, from text alternatives for images and comics, to the posting of fanfic with disability themes, to attempts to increase the accessibility of fan conventions, as well as discussion of trigger warnings. Trigger warnings, or notifications that a given piece of content might produce psychological triggers in readers with particular experiences of violence or trauma, or in people with particular mental conditions, are increasingly common in fan, feminist, and progressive online communities. They are considered a courtesy, if not a necessity, in making online spaces safe for a variety of people. It is therefore unsurprising that although trigger warnings are not a feature of accessibility policies such as Section 508 or WCAG, this community considers them crucial to creating fully accessible online communities. The values, interests, and culture of the community shape the meaning of accessibility, combining official definitions with their own needs. You Fail at Accessibility draws on a different subset of online culture, using the "you fail at" rhetoric that is broadly popular in gaming, social bookmarking, and other communities. It describes its mission as "Chronicling accessibility failures, one asshat at a time," again drawing on a kind of vulgar, yet playful, form of online language of critique. This community includes all kinds of accessibility fail, including online and offline examples. One online example came from a poster who highlighted that YouTube's automatic captions were not "good enough," finding 15 errors in a 25-second clip of *The Cosby Show*. This is a fairly straightforward complaint about

online accessibility, but it is one aimed at quality, not simply compliance; the video has captions, they are simply too terrible to be real text alternatives. You Fail at Accessibility offers a space in which to critique not just the absence of accessibility, but its poor implementations, amid a supportive community posting their own critiques.

The examples of Easy Chirp and Dreamwidth demonstrate that accessibility and online inclusion of people with disabilities are not impossible, although they remain unusual. Additionally, however, they indicate ways in which the production of accessible online media and services allows for inclusion of many user positions, including non-normative users who may not be disabled, but may have other physical, mental, emotional, and practical needs that can be met by accessible services. Lembrée considers Easy Chirp useful for novice Twitter users, as well as users on tablet computers, users who don't have JavaScript enabled, Internet Explorer 6 users, and users with low bandwidth internet connections.[11] Dreamwidth, while popular among users with disabilities, has also emerged as a preferred site for fan fiction authors seeking a measure of privacy as well as for social justice activists and others interested in discussing sensitive topics within a supportive space. Accessibility in these spaces is a foundational component to building services that are not simply "cool," but that are available for use by many different people in many different circumstances, recalling the ideal outcomes of accessibility policies and disability politics. That these sites are so few is indicative of the difficulty in changing cultural treatment of disability without legal enforcement; that they exist at all suggests that such changes are slowly taking root.

Accessibility as Media Access

In beginning this project, I sought to understand how accessibility policy was made, why it was so rarely implemented, and what effects it had upon the online experiences of users with disabilities. In concluding it, I have found that accessibility has struggled to be integrated into a culture in which disability remains conceived of largely as deficiency and in which companies build preferred user positions into the code and the cultural representations of their sites and services. As much as this project offers a history of web accessibility, set in contrast to contemporary experiences of the web, it also offers a critique of the limited ways in which media access is discussed and the need for attention to variations of access in the study of media beyond accessibility. By centering disability and proceeding from that standpoint, the form, content, uses, and cultural context of online media is visible from a new angle, which demonstrates some of the assumptions built in to computer and internet technologies, online media content, and cultural narratives about the use of such things.

The first part of this project - Chapters 1, 2, and 3 - worked to deconstruct common understandings of access by using the case of web accessibility. In Chapter 1, I argued that the value of media (particularly digital media) to the public was such that access to it ought to be a matter of equality, and not merely charity. I then considered what access might mean, interrogating several bodies of literature. Looking to the history of media in the United States in order to see various conceptions of access, I considered the limitations of availability and affordability as compared to a perspective that values the ability to use as foundational to access. Looking to analyses of the Digital Divide, in which ability to use is more often considered, I argued that the linear progressions to an ideal state of "full access" often seen in these works compromised their otherwise complex notions of access to information and communication

technologies. I then proposed a model for the study of media access in which access is not a goal,

but a variable arrangement of relevant factors. Building upon previous circuit models for the

study of culture, I suggested a circuit model of access in which an intersectional point of entry

and sites of form, content, and use are understood to be placed within a particular sociohistorical

content. Such a model could be used to answer questions about media access, or as a means of

studying media that would necessarily incorporate close attention to the conditions of access.

Chapters 2 and 3 began the process of examining the history of web accessibility as it

relates to each of the sites of this model. Chapter 2 considered the initial sociohistorical context

in which the first web accessibility policies were formed. It considered the history of the

disability rights movement in the United States as well as the development of accessibility

features for telephones, television, and within the government sector. Additionally, this chapter

considered the cultural context of the 1990s, highlighting the ways in which networked digital

technologies were represented as transformative, and the ways in which images of disability

were used to indicate that transformation, even as people with disabilities were rarely presented

as users of this technology. From these cultural legacies, this chapter explicated the notion of a

preferred user position, and the naturalization of this capable, privileged position in the

development and representation of the web. Following this setting of the stage, Chapter 3 looked

to the processes of accessibility policymaking as these first policies attempted to alter the forms

of online content. The need to create filter standards that could be broadly applied limited the

kinds of recommendations possible in these standards, as did the attempts to write for

contemporary technology by prioritizing HTML. In concluding this chapter, I argued that while

policy could affect the form of online content, this was insufficient to addressing the accessibility

needs of many users with disabilities because their needs incorporated specific conditions at the

sites of content, use, and point of entry. Such needs were beyond the reach of policy documents, and made it difficult to define accessibility. Given the diversity of those involved in policymaking, their varied interests, and the uncertainties about the audience for initial accessibility policies, there was an inevitable degree of contestation in the process that is reflected in some of the subsequent understandings and implementations of web accessibility.

In the second half, I continued to move through the sites of the model by considering what happened after the initial formation of web accessibility policies, in the form of WCAG 1.0 and the Section 508 guidelines. Chapter 4 focused on the implementation of these policies as it related to the site of content. Here, I explored the ways in which accessibility was understood as antithetical to "good" web content. The discourse of accessibility, so tenuously established in the policy processes, failed to connect to mainstream understandings of web development. Many developers and critics perceived a conflict between mainstream web media, with its emphasis on aesthetics and "cool," and accessibility, with its technological focus and supposed lack of concern for audiences. In fact, even attempts to argue for accessibility by refuting negative "myths" about it largely succeeded only in cementing the reputation accessibility had for being set apart from regular development practices. While standardistas and others argued that accessibility was intrinsic to good web design, hosts of corporate developers, IT professionals, and amateurs did not get that message. Chapter 5 continued the historical progression, considering the context of Web 2.0 and participatory media that emerged in roughly 2004 and amid which a second round of policy processes occurred. This chapter was centered on the site of use, allowing for investigation of the ways in which consumption and production of online media blurred for mainstream users and web users with disabilities. I then turned to how these shifts posed challenges for policymakers, particularly around the notion of "authorship," as

accessibility policies could no longer simply assume a deeply technologically literate audience but had to address amateur producers and people with disabilities' need for accessible tools of production as well as consumption.

Finally, Chapter 6 featured discussion of the ethnographic component of this project, considering how disability at the point of entry affects the sites of form, content, and use. Drawing on study of a disability blogosphere and interviews with several participants, this chapter highlighted the ways in which web users with disabilities negotiate their access to online media, avoiding some forms of media while seeking out particularly relevant information and communities. Additionally, from this study, it appears that users with disabilities have discursively constructed accessibility to be something somewhat different that what is seen in policy discourses. While some bloggers were involved in the production of accessible online material, and some even work (or aspire to work) in this field, others had very little formal knowledge of web accessibility and many were reluctant to claim expertise in this area. "Cultural accessibility," however, emerged as an important consideration in this space, as individuals sought out not merely technically accessible material but sites and services that were welcoming and inclusive of the differences of disability. This is far beyond the scope of official policies, which remain largely at the level of changes of the form of online content, and represents a way in which experiences of disability at the point of entry may be shifting the context of access to the web for people with disabilities. When considered alongside Easy Chirp and Dreamwidth, cultural accessibility can be seen to be influencing the ways in which the newest accessible sites and services conceive of their mission and implement accessibility features.

In proposing a circuit model for the study of media access and using it to present research into the historical development of web accessibility, I hope to have made it clear that access

ought not be taken for granted in any media study. When access is assumed, it is too easy to

imaginatively construct an audience that is abled, and otherwise privileged, enough to partake in

media from a preferred use position. Differences in access, and in the accessibility of media

technology and content, may lead to particularly interesting innovations, negotiations, and

reconfigurations of the experiences of media production, consumption, and interaction. By

tracing the history of web accessibility by moving through the sites of sociohistorical context,

form, content, use, and point of entry, it has become clear that access to web media for people

with disabilities relies upon the actions of countless individuals at various locations in the

process. Policymakers, web developers, cultural producers, and web users with disabilities may

all have a role to play in creating the possibilities for accessible online media. Even when

accessible conditions exist, differences at the point of entry mean that it is impossible to discuss

accessibility without reference to individual needs and circumstances. Web accessibility has

provided a persuasive illustration of the impossibility of studying access as a matter of haves and

have-nots, as well as the problems with studying web media without attention to differences of

access.

Silences in Accessibility History

Despite the ambitions of this project to consider web accessibility from a variety of perspectives,

there have been important components of this history that were not considered. In each chapter,

choices were made about how best to give necessary historical information and provide relevant

examples. These choices, inevitably, resulted in the exclusion of other material. The wealth of

policy information, in particular, resulted in choices that have left important "silences"[12] within

this account. The most notable absences in this study are the relative absence of cognitive disability, the exclusion of mobile media, and the lack of attention to educational contexts.

Cognitive disabilities, including learning impairments, are a major category of disability within the United States, and many people with cognitive impairments face barriers in accessing web content. In fact, the policy archives and interviews with accessibility professionals revealed that cognitive disability was a major site of struggle in codifying accessibility. There are many different kinds of cognitive impairment, and they often require different accommodations, making the development of general recommendations quite difficult. Additionally, these impairments often require changes at the level of content, rather than form, as in the case of dyslexia; while larger text or simpler language may aid people with these impairments, this would require asking web authors to write differently, which policymakers tried to avoid requiring. In the words of one industry representative involved in the second round of policy processes, "there's so much more variety in terms of the end user needs. […] And a lot of it also winds up coming down to how information is authored, and not just how the code is written, but how the words are used. And, people definitely have a little bit more difficulty with that because it's encroaching on the author's way of delivering their own content." Many policymakers thought that accessibility needed to move beyond "cognitive" as a category altogether in order to address specific conditions separately, though that approach has not yet been tried. Therefore, I chose to exclude cognitive disability not because it was not relevant or important, but because incorporating it as fully and complexly as needed to do justice to these concerns would not have been possible within the constraints of this project. Cognitive impairments challenged the very nature of best practices for accessibility, the relationship between content and form, and would

have required far more detailed information about various impairments, needs, and experiences in order to be fully explored.

Furthermore, as briefly discussed in Chapter 6 and expanded in Appendix 2, IRB standards regarding cognitive disability were so stringent as to make ethnographic research on cognitively disabled bloggers significantly more difficult and potentially less productive, given restrictions on direct quotation and the need to ascertain clear diagnostic information. Certainly, some bloggers within the disability blogosphere experienced what might be considered cognitive or emotional impairments, including learning disabilities and anxiety disorders. Severe cognitive disabilities, however, were not visibly on display within this space, making the decision to refrain from study of cognitive disability in the ethnographic research as much a matter of practicality as principle. As race, class, and educational privileges were high within this community, so were the levels of cognitive ability, further skewing the sample. Given the wealth of information related to cognitive disability that I have accumulated through this research and not incorporated, and the depth of analysis needed to explore web accessibility for people with cognitive impairments, I expect to explore the unique situations of access as they relate to cognitive impairments in future research.

The rise of mobile media during the 1990s and 2000s is a second silence in this work, and is regrettable as guidelines for mobile media are heavily indebted to WCAG 1.0 and the lessons of variation learned from accessibility policies. As mobile media often involve the use of small screens, non-standard typing devices including number pads, small keyboards, and touchscreens, and may not support all formats (as Apple devices do not support Flash), they pose many of the same challenges to developers of web sites and services that accessibility measures do. The proximity of needs in these cases may mean that the rise of coding for computers and mobile

devices may act as a means of fostering greater accessibility implementation.[13] Already, accessibility policies have shaped recommendations for creating web content for mobile devices. The W3C's Mobile Web Best Practices Guidelines 1.0, released in 2008, drew heavily on WCAG 1.0. While "the principal objective [was] to improve the user experience of the Web when accessed from such devices," the section detailing the relationship of these guidelines to other documents stated that "these recommendations [were] in part derived from the Web Content Accessibility Guidelines."[14] The overlap in these coding practices is not coincidental, but is a result of the similarity in coding web pages for non-standard devices.

Yet, despite the close relationship between web accessibility and mobile media web formats, I chose to bracket this area of study, primarily focusing on the web as accessed via a personal computer. Again, this choice was largely due to the need to constrain the scope of this project. Given the use of multiple methodologies, the duration of the historical period under study, and the need to relate significant quantities of historical and ethnographic data in a way that was understandable and theoretically useful, expanding this project to incorporate the quick and significant changes in mobile media development would have been untenable. As in the case of cognitive impairment, mobile media was regularly considered in debates about accessibility policy, and the W3C has produced guidelines for the development of mobile media which may be studied on their own merits. I look forward to exploring the sites of access in relation to mobile media, disability, and accessibility in future research.

Finally, I have largely sidestepped questions about educational contexts as they relate to web accessibility and experiences of disability. First, the teaching of web accessibility can be found in post-secondary settings such as undergraduate computer science departments, online programs, or in fields such as assistive technology, educational technology, and special

education. The availability of developers knowledgeable in web accessibility is of major concern to many computer- and web-based companies, as these industries often find that new hires must be taught accessibility measures and implementation techniques on the job. There have recently been calls for increased attention to how accessibility credentials might be established in a reliable fashion. Accessibility organization Web Accessibility in Mind recently published an article that began by stating the double-bind of accessibility education, where "on the one hand we have employers saying that there are insufficient numbers of professionals in accessibility available for them to hire. […] On the other hand, there have been attempts to provide the field with training programs that produce accessibility professionals even when it is not apparent that there is a market for them."[15] While online credentialing programs might bridge this gap, it was cautioned that there were concerns about assessment and oversight, among others, that would have to be addressed in order to make such credentialing meaningful and successful.

Although this project incorporated analysis of some instructional texts aimed at practicing web developers and a handful of textbooks designed for classroom use, a more in-depth study of the educational experiences of web developers would provide greater insight into choices about accessibility implementation as they relate to developer expertise. Additionally, as mentioned in Chapter 6, my ethnographic research offers few clear conclusions about the role of educational access and achievement in shaping the conditions of access for bloggers with disabilities. Relatively few bloggers disclosed their educational background on their sites, and I did not explicitly ask about the educational level of my interview subjects, although some volunteered this information. It is possible that a post-secondary educational level is positively correlated to participation in the disability blogosphere, based on my limited information, and this suggests that once again particularly severe impairments and cases of lower skills and

resources are not being adequately addressed through the research completed as part of this study.

These three omissions were necessary in order to constrain this already broad, multi-method study of web accessibility, but the consequences of these decisions are felt throughout my results. Those people with disabilities most disadvantaged by cognitive impairment, low educational levels, and other constraints that may have discouraged significant online participation are effectively erased from my analyses, replaced by analyses of relatively privileged experiences and outcomes. The study of web accessibility from the point of view of disability studies ought to incorporate these voices, as they are the most excluded from the benefits of accessibility policies. That this study does not do so is a limitation, and future work on disability, web media, and accessibility ought to incorporate these elements more fully. While the omission of mobile media is less politically problematic, it does represent a significant component of technological innovation, web development, and accessibility for people with disabilities, which has not been given its due within these pages. Similarly, the interest of the accessibility community in addressing cognitive impairments through policy is deserving of further attention in order to illuminate the particular challenges of cognitive impairment and the persistent limitations of what policy can do to shape technological form and media content. The educational context of accessible web development is deserving of attention for its influence on generations of developers and their later choices, as well as for investigating the particular cultural norms about users that are established in these contexts. Each of the omissions described here is deserving of further study, through which variations of access conditions may be better understood.

Accessing Ability

Although there is significant work yet to be done on the development and experiences of web accessibility, my hope is that the theoretical contributions of this dissertation may also lead to studies of other media technologies, texts, and audiences through a lens of access. We can learn from the study of accessibility how to better study media in a way that incorporates access as not merely a practical necessity, but as an integral component to understanding how and why media is produced, consumed, and circulated. Taking access as a foundational element of understanding media production, consumption, and circulation ought to result in the exploration of important research questions within media studies: For whom is technology developed? What constitutes culturally accessible programming? How does media representation relate to experiences of access? How can access to media production be broadened?

Furthermore, by centering disability in a study of online and participatory media, this project has demonstrated the variability and contingency of access as well as the ways in which access may become relevant to individual experiences of media at multiple levels. Interrogation of media content, use, and technologies from the standpoint of disability opens the door to many new conversations about the assumptions built in to studies of production cultures, texts, and audiences. Disability remains understudied in terms of media representations, producers, and audiences, and it seems likely that just as experiences of disability shape online media practices, they might shape other relationships to media technologies and texts. Media access is not simple, not uniform, and not easily ensured. Rather, it is endlessly variable, messy, and unpredictable. That uncertainty is precisely why studying access is so difficult, and so essential.

Notes

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Appendix 1: Timeline of U.S. Web Accessibility History

1968   Architectural Barriers Act (ABA). New federal buildings are required to become

     physically accessible.

1973   Rehabilitation Act of 1973. Section 502 establishes the Architectural and

     Transportation Barriers Compliance Board (Access Board) to ensure compliance

     with the ABA. Section 504 prohibits federal discrimination on the basis of

     disability.

1982   Telecommunications for the Disabled Act. Designed to expand the number of

     hearing aid compatible telephones inside and outside the federal government.

1985   Clearinghouse on Computer Accommodation established in the General Services

     Administration (GSA). Later known as the Center for Information Technology

     Accommodation.

1986   Rehabilitation Act Amendments of 1986. Section 508 requires the National

     Institute on Disability and Rehabilitation Research (of the Department of

     Education) and the GSA to create guidelines for making electronic equipment

     accessible for users with disabilities.

1990   Americans with Disabilities Act (ADA). Recognizes the minority status of people

with disabilities, and adopts a rights-based framework and extends

nondiscrimination beyond the public sector.

1990   Tim Berners-Lee and CERN develop the World Wide Web, released in 1991,

laying hypertext markup language (HTML), the hypertext transfer protocol

(HTTP) and unique resource locators (URL) on top of the TCP/IP exchange.

Allows for multimedia presentation, as well as text.

1991   GSA publishes its Section 508 guidelines in Bulletin C-8 in the Federal

Information Resources Management System.

1993   National Center for Supercomputing Applications at the University of Illinois

develops Mosaic, the first graphical Web browser.

1994   In May, the WWW2 Conference Birds of a Feather meeting initiates discussion of

how to improve the Web, including accessibility concerns.

In October, the World Wide Web Consortium (W3C) is founded by Berners-Lee

at the MIT Laboratory for Computer Science, in collaboration with CERN, and

with the support of DARPA and the European Commission. It is an international

consortium.

1995   The Trace Research and Development Center releases "DESIGN OF HTML

(MOSAIC) PAGES TO INCREASE THEIR ACCESSIBILITY TO USERS

WITH DISABILITIES STRATEGIES FOR TODAY AND TOMORROW"

version 1.0, possibly the first set of Web accessibility standards addressing a

broad set of disabilities.

1996   The Telecommunications Act of 1996 is passed. Section 255 requires

manufactures of telecommunications products and services to make these

accessible to people with disabilities where it is "readily achievable."

The applicability of the ADA to the internet is clarified in a letter from Deval

Patrick at the Department of Justice to Senator Tom Harkin (D-IA). Under the

"effective communication" clause, covered entities must provide accessible

means of presenting any information they produce for the public. Existing

guidelines, including an early Trace draft, are suggested as resources.

1997   On April 7, The Web Accessibility Initiative (WAI) of the W3C is founded in

connection with a White House initiative. Work on WCAG 1.0 begins.

Trace releases "Unified Web Site Accessibility Guidelines" version 7.1 Version

8.0 will become a basis for the WCAG 1.0.

Federal Electronic and Information Technology Accessibility Compliance Act is introduced in both houses of Congress. Language from this will be included in the Workforce Investment Act of 1998.

1998   The Workforce Investment Act of 1998 is passed. This rewrites the Section 508 Amendment to the Rehabilitation Act of 1973, requiring federal employees with disabilities and members of the public with disabilities who are seeking government services to be given equal access to information and technology. Congress asks the Access Board to create a set of standards to implement Section 508.

1999   In May, Electronic and Information Technology Access Advisory Committee (EITAC) releases "Recommendations for Accessibility Standards: Electronic and Information Technology."

On May 5, the "Web Content Accessibility Guidelines 1.0" (WCAG 1.0) is released by the W3C.

The National Federation of the Blind files a class action discrimination claim against America Online, under Title III of the ADA (*National Federation of the Blind vs. America Online (AOL)*).

2000   On December 21, the Access Board publishes the Electronic and Information

Technology Accessibility Standards (EITAS) in the Federal Register.

National Federation of the Blind vs. America Online (AOL) (1999) is settled out

of court. AOL agrees to make its services accessible.

2001   On June 21, Section 508 goes into effect for covered entities. Enforcement begins.

2002   Flash MX and Flash Player 6 are released by Macromedia, introducing

accessibility authoring tools to Flash animations and websites.

2006   On April 18, the Architectural and Transportation Barriers Compliance Board

(Access Board) announces its intent to establish an advisory committee for the

Telecommunications Act Accessibility Guidelines and the Electronic and

Information Technology Accessibility Standards. This consolidates the processes

held related to 255 and 508 measures, previously.

On July 6, the Telecommunications and Electronic and Information Technology

Advisory Committee (TEITAC) is formed to refresh Section 508 standards.

The National Federation of the Blind files a class action discrimination claim

against Target, under Title III of the ADA (*National Federation of the Blind v.*

Target Corporation (2006)).

2008   On April 3, TEITAC releases its recommendations to the U.S. Access Board.

In September, *National Federation of the Blind v. Target Corporation* (2006) is settled out of court. Target agrees to make its website accessible in 2009.

On December 11, the Web Content Accessibility Guidelines 2.0 (WCAG 2.0) are released as a W3C Recommendation.

2010   On March 22, the Access Board issues and An Advance Notice of Proposed Ruel-Making regarding Section 508 and releases the Draft Information and Communication Technology (ICT) Standards and Guidelines for public comment.

On July 26–the twentieth anniversary of the ADA–the Department of Justice issues an Advance Notice of Proposed Rulemaking regarding the application of the ADA to the internet.

On October 8, President Barack Obama signs the 21st Century Communications and Video Accessibility Act, a major piece of legislation promoting captioning on mobile technology, on television content distributed online, and making a number of other accessibility proposals aimed at mobile and web technologies.

Appendix 2: Ethnographic Methods

This appendix offers a detailed description of my decisions regarding ethnographic research in a disability blogosphere, interviews with bloggers, and interviews with accessibility professionals. Appendix 3 offers the basic interview questions used with accessibility professionals, as well as those used with bloggers. All interviews were open-ended, and all interview participants were given the chance to review and approve their quotations and writing derived from their interviews prior to completing this project. Members of the disability blogosphere who were not interviewed and thus not approached for direct consent were protected through the privacy measures described in Chapter 6. In this appendix, I describe the formation of the disability blogosphere as my field, discuss my negotiations with the Institutional Review Board regarding observation and interviews around disability, provide demographic information about the interviews that I completed alongside reflections on the limits of these interviews, and offer my decisions regarding online publicity, protecting participants' privacy, and holding this analysis accountable to participants in my ethnographic research.

Constructing and Reporting from the Blogosphere as Field

The ethnographic work in this project is based upon a nine-month participant observation of a disability blogosphere; in this formulation, disability refers to either a claimed identity, a topic of discussion, a framing theme, or a combination thereof, and blogosphere is intended to describe a linked network of blogs that exist in conversation with one another and may share audiences. Thus, although most bloggers involved identify as people with disabilities, not all do.

In constructing this field of research, a disability blogosphere was established using a modified form of web sphere analysis. As in all ethnographic work, the process of constructing the field involved a number of decisions regarding inclusion and appropriate contexts.[1] Steven Schneider and Kristen Foot define a Web sphere as "a set of dynamically defined digital resources spanning multiple websites deemed relevant or related to a central event, concept or theme, and often connected by hyperlinks."[2] Schneider and Foot initially determined boundaries to their web spheres based on their ability to anticipate important topics/events, important actors, and the likely stability of web materials. Following a set period of data collection, Schneider and Foot conducted textual analysis of their Web sphere and conducted retrospective interviews.

For an ethnographic study conducted over time, their method required modification. Rather than take a temporally bounded event as central, I centered the theme of disability and sought out a core group of sites from which to expand the sample through blogrolls (lists of links to related blogs). The core consisted of three seed sites; *Blind Photographers*; *Feminists with Disabilities*; and *Disability Studies, Temple University*. Each site offered a distinct profile for research. *Blind Photographers* is a collaborative site written by photographers with a range of visual impairments. It is closely tied to a Flickr group and individual Flickr accounts, and it has a fairly technological focus. *Feminists with Disabilities* was a group blog with a decidedly activist perspective, numerous ties to social networking sites, a predominantly female group of authors and commenters, and a range of topics of interest. Regular posting ceased in early 2011, but as the archives, contact information, and blogroll of the site remained intact, it was retained as a seed for the blogosphere. Finally, *Disability Studies, Temple University* is a group blog that is less frequently updated and tends to be more academic in content, serving primarily as a resource.

This snowball method of constructing an online field drew upon many of the key characteristics of blogs. Often reverse-chronological, comprised of many posts over time, allowing reader comments, and linking to other websites, blogs are often highly personal spaces[3] that connect out to the larger internet. The links, particularly blogrolls that link to many other sites, can be understood as constitutive of social networks, as well as information networks, as they indicate a desired affiliation.[4] Such link are often mutual, and the term "blogosphere" refers to the social sphere formed when "bloggers tend to frequent the same blogs and build relationships with bloggers that share similar interests" forming intertwined online spaces.[5] These social connections, in conjunction with the mixed written-oral culture of online writing and the ways in which blogs support ongoing conversation through comments, links, and responses[6] make an ethnographic approach particularly useful in understanding not just what blogs *say* but what they, and their authors, *do*. In addition to linking to other blogs, many blogs link to other components of their authors' online presences, including Twitter, Flickr, and Tumblr accounts.

The field thus expanded through exploration of the sites linked from *Blind Photographers, Disability Studies - Temple University,* and *Feminists with Disabilities*. This starting point offered a number of advantages, including access to a large number of bloggers and connections to other forms of participatory media (Facebook pages, Flickr accounts, Twitter streams, YouTube videos, etc.). The initial cull of over 350 websites was expanded to include additional blogs, Twitters, Tumblrs, and Flickr accounts written by authors of the blogs found. Next, this corpus was reduced through five layers of sifting. First, duplicates were removed. Secondly, any sites that appeared to be private, requiring any kind of login or addressing a clearly personal audience were excluded, in keeping with the authors' apparent expectations of

privacy. Next, blogs and other sites were excluded for being either inactive (no posting for over

nine months) or defunct (no posting for two or more years). Then, blogs that were written by

parents of children with disabilities and blogs that offered resources regarding disability health or

public programs were excluded because they provided very little information related to people

with disabilities' use of the Web. Finally, in keeping with the U.S.-centric nature of the rest of

this project, blogs based in other countries were excluded, with a few prominent exceptions. *BBC*

Ouch!, a disability blog run by the BBC, has a very high profile within the blogosphere as

previously defined, and is a unique case as a prominent, semi-official blog by people with

disabilities in the UK. *Zero at the Bone*, the personal blog of Chally Kacelnik, is an Australian

blog; however, as Kacelnik also co-founded and wrote for *Feminists with Disabilities*, and writes

for two other U.S.-based sites within the sample, her personal blog was included. Finally, *Do It*

Myself Blog and *Blog Accessibility*, both by Glenda Watson Hyatt, are based in Canada; Hyatt,

however, is a prominent voice in blog accessibility, known to many blogs within the U.S.

sample, and was included on those grounds.

Having established the field, I entered and began participant observation. My identity was

declared; as a gesture of good faith, blog authors were contacted and informed of the research.

Though all sites selected were publicly accessible, and sites that demonstrated an expectation of

privacy had been excluded already, this step offered blog authors the chance to refuse

participation, ask questions, and potentially form an initial relationship. All bloggers were

contacted and informed of this non-invasive research; 22 bloggers offered their explicit support,

and no bloggers refused inclusion in the sample. Ultimately, participant observation began on 53

blogs, 36 Twitter accounts, 26 Flickr accounts, and 9 Tumblr accounts.

Over the course of this study, the state of the field altered in several ways, and I made choices in order to preserve the intentions of the initial bounding. This strategy was in keeping with Schneider and Foot's recommendation of dynamically bounding the field, enabling researchers to respond to emergent themes and events. First, several sites were removed. Some were eliminated for proving to be non-US after the initial cull, and one blog was removed following a post that explicitly rejected the use of the blog in any further academic study. All material related to these blogs and their authors was removed. Secondly, several participants launched new sites, such as Tumblrs, which were added to the sample, while others began writing for additional sites. While bloggers' written work occasionally appeared in mainstream media sites, as many are freelance writers, those sites were not added to the sample. However, a participant's writing on another blog was sufficient to add those to the sample, resulting in the inclusion of *xoJane*, among other sites. Finally, some sites were discovered in the course of research through Twitter, podcasts, or other online promotion and added to the sample, including *Journey from Disabled to Abled*. At the conclusion of fieldwork, the disability blogosphere included 52 blogs, 30 Twitters, 26 Flickrs, and 11 Tumblrs.

Disability, Consent, and the Internet as Public Sphere

In taking this research to my Institutional Review Board, three concerns were raised: the possible need to seek consent for research on blogs; the possible risk involved in directly quoting blogs that could be found using any modern search engine; and the possible need to protect people with disabilities as a vulnerable population. The first two risks were addressed via the means of contact, conversation, and consent discussed above. First, consent was not sought from all authors of all blogs, as blogs were treated as public forms of online content production and

participation. The value of the web as a public venue may be particularly important for groups

that are otherwise marginalized in society,[7] and thus I wanted to treat the publicity of these blogs

seriously as a means by which bloggers engaged with societal conversations, and strongly argued

this point to the IRB. As established in the Association of Internet Researchers Ethics Document,

"the greater the acknowledged publicity of the venue, the less obligation there may be to protect

individual privacy, confidentiality, right to informed consent, etc."[8] Furthermore, blog posts are

directly quoted and blogs are occasionally named in this research, but the inclusion of specific

blog content has been continually weighed against possible risks to authors. Specifically, I have

declined to provide exact URLs for sites or individual posts, and have attempted to include this

information for only those sites that seek acknowledge a general, public audience.

In doing online ethnographic work, there is a potential blurring of whether blog authors

are authors in a traditional sense or active human subjects. Therefore, the consent process was

similarly blended. Blog participants were informed of research, but their consent was not

considered necessary for participant observation to commence; interview subjects were asked to

give informed consent and indicate their preferences regarding the presentation of their identity

in written work. These measures satisfied the IRB, while attempting to balance the importance of

preserving participants' publicity and stated identities with their right not to be subjected to

unwarranted scrutiny or coerced into participation.

The IRB's final concern, regarding the vulnerability of participants, was addressed

through the inclusion of a hypothetical statement. IRB guidelines consider individuals with

cognitive or emotional impairments to be vulnerable populations subject to additional

protections; similar precautions are required for individuals who are institutionalized or

incapable of legal consent. Physical disabilities, however, are not explicitly subject to such

consideration, and relatively common emotional disabilities such as depression and anxiety would not normally rise to the level of impaired decision-making. In this research, which treats disability broadly, I trusted bloggers' self-representations and self-disclosures; given the recruitment of participants via their publicly available online written or artistic material, much of which is aimed at a mass audience and indicates a fairly high level of literacy, complexity, and independent agency, it was not expected that participants would lack legal decision-making capacity. However, as I did not seek out diagnostic information, there remained a possibility that impairments rose to a level deserving extra ethical scrutiny. Thus, the IRB was assured that, should it come to light after initial contact that any participants have previously unknown cognitive disabilities, or are under the care of a legal guardian, they would be excluded from the interview portion of the study. This information was added to the consent form. Though this scenario did not in fact arise, these precautions were taken in order both to meet IRB guidelines and to preserve the autonomy of participants with various disabilities.

Choices and Outcomes Related to Interviews

As discussed in the introduction, interviews were conducted for two strands of this project, with accessibility professionals interviewed about policies and their implementations, and bloggers interviewed about their experiences as web users. These two sets of interviews were carried out in slightly different ways, with the former using in-depth interviews that often rose to the level of oral history, and the latter using in-depth interviews that remained fairly focused on the topics of accessibility and disability blogging. The differences in interview technique were due to the different intended uses of interview data. Interviews with accessibility professionals were used alongside archival sources to reconstruct the history of accessibility policy, particularly during

the first decade of the World Wide Web. Interviews with bloggers were used to augment my observations within the disability blogosphere. In the following paragraphs, I discuss each in turn.

Interviews with accessibility professionals were done in order to provide additional context and details pertaining to the history of web accessibility in the United States. Given the large quantity of information available regarding the development of Section 508 and WCAG 1.0 and 2.0, these interviews were not needed to provide dates, facts, and figures. Instead, they were done in order to gain access to memories, contexts, conversations, and connections that would otherwise have been inaccessible. Thus, these interviews were in-depth, open ended interviews that aimed to elicit life histories as they related to web accessibility. Though I designed questions for each participant, beginning with basic questions and incorporating some more relevant to their personal experiences, all interviews with professionals included broad questions about their personal and professional histories. Perhaps as a result, the outcome of these interviews was a particularly valuable insight into the diverse backgrounds and sometimes conflicting interests at stake in the policymaking processes.

Ultimately, I conducted interviews with ten accessibility professionals, eight of whom were men, and two of whom were women. All but one of these interviews were conducted over the telephone; the final interview was conducted via email. I spoke with three people involved in the production of WCAG 1.0, five involved in the writing of WCAG 2.0, one involved in the original 508 standards, and four involved with TEITAC and the Refresh of Section 508. Obviously, several interview participants were active in more than one process. Although, again, there is overlap among these roles, my sample included four representatives of industry, one representative of a disability advocacy non-profit organization, two employees of the U.S.

government, and three academics. The entire group was relatively privileged in terms of high educational achievements and deep knowledge of web accessibility, web and computer technology, human-computer interaction, and other related fields. This is expected of interviews with experts, and led to many interesting discussions of the tensions involved in writing accessibility policy. As they were professionals being interviewed about their line of work, this group was of minimal concern to the IRB in terms of potential risk; the distinction between professionals and bloggers, however, was not always clear-cut. Several professionals were, themselves, people with disabilities and all of them were web users, many of whom maintained blogs or personal web pages. For the purpose of this research, anyone who was involved in accessibility at a professional level was interviewed using these questions and approach (see Appendix 3 for the basic questions used with professionals), although they often initiated discussion of their own ability status and online activities.

I conducted the second set of interviews in order to enrich the results of participant observation by including the voices and interpretations of bloggers with disabilities from the field. These interviews began during the final three months of participant observation and continued for several months following my exit from the field. Interviews were intentionally open, though they focused on accessibility and its relationship to bloggers' internet use as consumers and producers. Elements of participants' online experiences were doubtless excluded from these interviews, due to the questions used and those left unasked (see Appendix 3 for a sample outline of questions for bloggers). These were intended as in-depth interviews, which aimed to understand the lived experiences of research participants at a level of specificity that may not be attainable through simple observation. They were open to changes in topic by

participants, and were intentionally informal, with prepared questions serving as starting points for a free-form conversation.

I interviewed ten bloggers. Although I did not request detailed demographic data, this sample included only three men, just one gender-queer participant, only one non-white participant, and only one person from outside the United States. These imbalances were not the result of intentional choices; several other men and people of color were approached for interviews. Most often, those requests went unanswered, leaving me no indication of reasons for refusal. Additionally, two interviews with male participants were pursued for some time, over the course of a long email correspondence, but was ultimately never completed. These known demographics represent a limitation of the interview research, as they are certainly not indicative of a representative sample of the disability blogosphere. Additional limitations stem from the generally high level of education, which characterized the blogosphere at large (see Chapter 6). Seven interviewed bloggers explicitly mentioned their college education, and it is possible that more had this background and did not discuss it. The sample additionally included three bloggers who had their own sites, but had been founders of *Feminists with Disabilities*. I did not speak with the operators of *Blind Photographers* or *Disability Studies, Temple University*. The remaining seven bloggers operated independent sites and were found via the snowball sample. This may have biased results toward more politically engaged bloggers than would otherwise have been the case, as *Blind Photographers*, in particular, is a less political community. Finally, while I did not ask for diagnostic information, participants often volunteered information about their disability status. My interview participants included people with impairments ranging from blindness to mobility impairments, attention disorders, progressive muscular disorders, and heart conditions. Certainly, this is not an exhaustive list, and once again, is not fully representative of

the diversity of impairments within the larger blogosphere. However, this spectrum does indicate that my interview findings were applicable beyond single disability communities and spoke to a kind of cross-disability identification.

Of these ten interviews, I conducted five via email, two via telephone, and three using Skype voice-over IP service. The higher level of email interviews in this sample was due to geographic distance and scheduling difficulties, in some cases, and was the result of accessibility preferences in others. As briefly discussed in Chapter 6, the choice of interview medium likely exerted an effect on the responses received from these interviews. Most notably, email interviews proved resistant to the flexibility available in oral interviews, as many participants answered all asked questions but rarely volunteered information on related topics. Such changes in topic and voluntarism were much more common via telephone and Skype, and offered a better sense not just of participants' responses to my questions, but of what they considered important for me to know.

Publicity, Privacy, and Accountability

Having constructed a dynamic online field of study and completed research, and having conducted interviews with bloggers and accessibility professionals, the process of writing involved continued efforts to hold this work accountable to its participants. The selection of sites for inclusion, as well as the selection of interview participants, and the treatment of this data was undoubtedly shaped by my own background, goals, and implicit biases. As Geertz observed of traditional anthropology, "what we call our data are really our own constructions of other people's constructions of what they and their compatriots are up to."[9] Online research, however, offers an opportunity to supplement the researcher's construction with the original constructions

of participants, as well as to encourage recursive sharing of research. Thus, efforts were made to protect privacy, respect any desire for visibility, and provide means by which participants could reassert themselves in the writing process.

In writing material based on participant observation and interviews, I have attempted to balance many participants' interest in being credited for their work, online and off, with preserving the relative privacy of other participants. Direct quotations are used when feasible, to preserve the voices and interpretations of my participants; when direct quotation would infringe on the privacy of sites I observed or is prohibited by a consent form, I attempted to paraphrase in a way that preserved the content as well as the tone of the original. I use the real names of interview subjects where I have permission to do so, and I discuss them in conjunction with their blogs and other online material. Several interview participants find publicity advantageous as they pursue writing or other visible careers, and thus are willing, if not eager, to have their work taken to a larger audience. A smaller number of participants have been given pseudonyms of their choice. Finally, for the largest pool of participants, bloggers at public sites who were not interviewed, I have attempted to discuss practices and content in fairly general terms, referring to particular sites only where absolutely necessary to the discussion at hand. As these are public sites, the content and practices observed there are not protected by an expectation of privacy; however, neither are those whose labor produces this content obliged to face increased attention due to their inclusion in this work. I chose to use only names that I had permission to use from individuals whom I interviewed, not to tie findings based upon participant observation to specific URLs, though public blog posts are discussed and blogs may be named, and to rely on group characteristics to identify individuals from participant observation. Further discussion of privacy

concerns can be found in Chapter 6's discussion of the choices made in producing fictional composites throughout this project.

Finally, all interview participants were contacted after initial writing was complete and given the opportunity to approve direct quotations, question my interpretations, or remove themselves from the study. They were each emailed chapters incorporating material from our interviews, as well as a separate document listing any direct quotations I wanted to use. Several participants responded to these materials with small changes to wording; these changes were largely intended to clarify their meaning and, in some cases, temper particular criticisms. Others, particularly professionals, responded with factual corrections regarding my descriptions of policy processes themselves; these were cross-checked before being incorporated. This stage also resulted in the addition of some material; Gregg Vanderheiden, upon seeing reference to version 7.2 of the Trace accessibility standards sent me his recently-found copy of version 8.0, which was taken up in the work on WCAG 1.0. Many interview participants, however, did not respond to these attempts at contact. Information from those interviews has been incorporated based on the arrangements agreed to in their consent forms.

In these ways, I hope to hold my project accountable to the community of activists, writers, and participants who deal with the intersections of embodiment, technology, and discourse on a daily basis.

Notes

[1] Vered Amit, *Constructing the Field: Ethnographic Fieldwork in the Contemporary World* (Routledge, 2000), 6.

[2] Steven M. Schneider and Kirsten A. Foot, "Web Sphere Analysis: An Approach to Studying Online Action," in *Virtual Methods: Issues in Social Research on the Internet*, ed. Christine Hine (Oxford: Berg, 2005), 158.

[3] Adam Reed, "'My Blog Is Me': Texts and Persons in UK Online Journal Culture.'," *Ethnos* 70, no. 2 (2005): 220–242.

[4] Geert Lovink, *Zero Comments: Blogging and Critical Internet Culture* (Routledge, 2008), 2.

[5] Noor F. Ali-Hasan and Lada A. Adamic, "Expressing Social Relationships on the Blog Through Links and Comments," in *Proceedings of the ICWSM* (presented at the International AAAI Conference on Weblogs and Social Media, Boulder, CO, 2007), 1, http://www.icwsm.org/papers/2--Ali-Hasan--Adamic.pdf.

[6] Lovink, *Zero Comments*, 10.

[7] Zizi Papacharissi, "The Virtual Sphere: The Internet as a Public Sphere," *New Media & Society* 4, no. 1 (2002): 9–27.

[8] Charles Ess and AoIR ethics committee, "Ethical Decision-making and Internet Research: Recommendations from the Aoir Ethics Working Committee" (Association of Internet Researchers, November 27, 2002), 5, http://www.aoir.org/reports/ethics.pdf.

[9] Clifford Geertz, *The Interpretation of Cultures: Selected Essays* (Basic Books, 1973), 9.

Appendix 3: Interview Questions

The interview outlines that follow were used as the basis of open-ended interviews. The first set

of questions was the framework for interviews with accessibility professionals (including

policymakers). These were designed to elicit experiences and memories about particular policies

and challenges in accessibility. They were augmented with more specific questions related to

each individual's role, experience, or published opinions, as discovered through archival research

and previous interviews. The second set of questions provided the baseline for interviews with

bloggers who wrote within my disability blogosphere. These had two goals: eliciting experiences

of in/accessibility in regular web use; and discerning individuals' understandings of their

blogging practice. They were often supplemented with questions that referenced individuals'

blog posts or that built on ongoing discussions within the blogosphere.

Interview Protocols - Professionals

Work-related questions:

    When did you begin working in the field of web accessibility?

    Do you remember how, or why, you became interested in this field?

    Can you tell me about your career path since then?

    What organizations, individuals, or positions have been most important to your career?

    Have you participated in the formation or evolution of web accessibility guidelines or

        standards (through the World Wide Web Consortium, US Section 508, or the

        standards or your own state, country, or local area)?

    If so, what was your role?

What factors, in your experience, were most influential in shaping those

guidelines/standards?

Do you remember any particular instances in which there were conflicts over the

direction of these policies?

What is your opinion of the degree of implementation of guidelines/standards?

How do you think implementation could be increased?

Idea-related questions:

How would you define accessibility?

Is that how you think others would define it?

How would you define disability?

Could you describe how others might define it similarly or differently?

Do you see these concepts as related to usability?

Do you see these concepts as related to universal design?

Can you tell me about a time when some of these concepts led to conflict or confusion?

Who do you see as the target audience for web accessibility guidelines/standards? In

terms of use? In terms of implementation?

Closing questions:

Is there anything you would like to add?

Are there others that you would suggest I speak to?

Interview Protocols - Bloggers

Questions related to public web use:

Could you describe the forms of online media that you consume? Blogs you read,

podcasts you listen to, video you watch, etc.

Could you describe any forms of media that you produce or participate in? This would

include email, uploading photos, Twitter, Facebook, blogging, producing podcasts

or webcasts, personal web sites, or other forms of personal expression.

What online activities are your favorites? What are the most important to you?

Are there any online media that you avoid using? Why?

If you engage in online media production, could you tell me about how you got started

and why?

Do you remember a time in which you faced a particular challenge in creating your

online material or running your site?

Could you talk about any social or professional connections you've made through online

media use?

Questions related to accessibility and assistive technology:

How often do you encounter difficulties with web site accessibility? What seem to you to

be the most common problems?

Do you use any assistive technology to use your computer or the internet?

Are there any customizations that you regularly implement in order to use your computer

or the internet?

Do you consider yourself knowledgeable about web accessibility? Why or why not?

If you engage in producing online content, do you attempt to implement web

accessibility? What has been your experience with that process?

Idea-related questions:

How would you define accessibility?

Is that how you think others would define it?

How would you define disability?

Could you describe how others might define it similarly or differently?

Closing questions:

Is there anything you would like to add?

Are there others that you would suggest I speak to?

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