NOT JUST A PRETTY (INTER)FACE: A CRITICAL ANALYSIS OF
MICROSOFT'S 'MS. DEWEY'

BY

MIRIAM E. SWEENEY

DISSERTATION

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Doctoral Committee:

　　Professor Linda C. Smith, Chair
　　Professor Lisa Nakamura
　　Assistant Professor André Brock, University of Michigan
　　Professor Allen H. Renear

ABSTRACT

Increasingly anthropomorphism is used as a design strategy in computing interfaces to make them more accessible and intuitive to users. Technologies are never neutral, and always consist of a complex arrangement of technical, social, and cultural (ideological) aspects. Computing interfaces designed to have the characteristics of people raise ethical questions about what it means to explicitly gender and racialize technologies. This project explores these broader questions through a case study of Microsoft's former search engine interface, "Ms. Dewey." The titular character featured in the interface was anthropomorphized as a sexy librarian virtual agent who performs search results in response to user queries. I explore how the Ms. Dewey search engine is gendered and racialized and, ultimately, how Ms. Dewey reveals specific assumptions about gender, race, and technology in the search engine. I conduct an interface analysis that investigates the semiotic and material aspects of the interface in terms of technological and cultural affordances, finding that gender and race function as crucial infrastructural elements that frame the search process and results as more explicitly ideological rather than instrumental. This research contributes to understanding the broader implications of anthropomorphization as a design strategy, blending concerns of technology design and cultural beliefs about gender and race.

This work is dedicated to my parents: Cheryl J. Sweeney and Vernon D. Sweeney.

Your unconditional love made it possible for me to pursue all of my dreams.

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CHAPTER 1: INTRODUCTION

I read in a magazine that aliens snapped up the most beautiful woman in the world and put her on the internet, and that you can ask her anything and she'll have an answer for you. What a crock. - Ms. Dewey, Microsoft "Ms. Dewey" search engine

Meeting Ms. Dewey

"You've got to see this!" my boss exclaimed, pulling me out of my chair as he walked by. I was sitting at my desk in a communal office space where I worked for the university's Information Technology Services department. It was 2006 and I was working on my master's degree in library and information science after more than ten years working as a library staff member for various public and academic libraries. When I joined the crowd standing around my co-worker's computer monitor, I saw what I first thought was a gimmick for a men's magazine or the Spike TV network (Figure 1). A sexy woman of ambiguous ethnicity dressed in a tight, low-cut suit with visible cleavage and a pouty expression stood behind a shiny, black desk. Behind her, a cityscape at night glows as if through the window of a high-rise building; the curve of a monorail cutting through the scene hints at urban futurism replete with symbols of technological progress. Below the scene, a search box waits expectantly with the command "MS DEWEY, JUST TELL ME" in all capital letters. As one of my co-workers typed in different words and phrases, the "Ms. Dewey" character (pre-recorded film footage of actress, Janina Gavankar) engages in flirtatious banter, sometimes becoming irritated or condescending if too much time passes before entering a search term: "Hellloooo… type something here!"
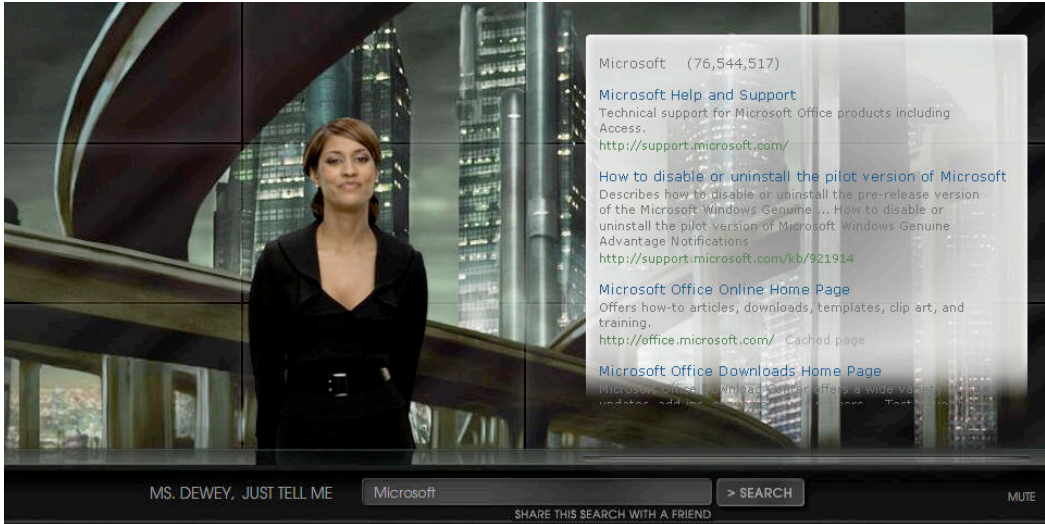
Figure 1: Ms. Dewey Screenshot. Retrieved July 30, 2013 from: http://findability.org/archives/000157.php

On the right side of the screen a list of search results appear in the familiar ranked format of popular search engines like Google, though this list seemed completely secondary to the mesmerizing activities of Ms. Dewey which filled most of the computer screen. As my co-worker quickly discovered, there are numerous "Easter eggs," or hidden jokes and messages, embedded in the Ms. Dewey search engine. Typing in certain words like "Microsoft," or "Playstation 3," would cue the Ms. Dewey character to make humorous cultural references about the search term in addition to simply highlighting the ranked results. For instance, searching for "George W. Bush" prompted Ms. Dewey to say, "You know it's easy to make jokes about the president. So easy, in fact, that I'm going to pass on it." This seemed an accurate reflection of the political weariness of the general populace in 2006. We watched as Ms. Dewey occasionally acted out longer skits where she would literally use props and costumes to enhance her commentary (Figure 2) and add some pizazz to the banter interstitially woven between searching.

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Figure 2: Ms. Dewey with a whip prop. Retrieved July 30, 2013 from:
http://www.hojohnlee.com/weblog/archives/2006/10/29/ms-dewey-stylish-search-with-whips-guns-and-dating-tips/

The random reward effect of unlocking Easter eggs is certainly one part of what drew my colleagues to stand around in the middle of a work day cutting each other off as new search terms were offered up by the group and typed in. The other part was the obvious thrill that my male colleagues seemed to have in making the Ms. Dewey character do and say things. The sexual overtones of the interface were hard to miss. Being a woman in library school, I had already had my fill of discussing the changing image of librarians from frumpy old maids to sexy librarians. Yet somehow, there in the middle of my workday, this conversation was rehashed as my colleagues hung on every word of this fantasy librarian. A kind of unspoken anticipation that Ms. Dewey might say or do something naughty underwrote the excitement in the room. To their credit, Ms. Dewey seemed designed for precisely that kind of titillation. In the scene "Safety first", she banters playfully while holding condoms and a helmet, and in another patiently reads the Kama Sutra while the user takes her time entering a search term. As the only woman in the room at the time, it was this dynamic that I found uncomfortable and off-putting, particularly in

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the workplace setting. Still, Ms. Dewey proved to be thought provoking, controversial…and ripe

for a scholarly analysis.

This was my first exposure to the Microsoft viral marketing campaign known as "Ms.

Dewey" which lasted from 2006 to 2009.[1] A functioning search engine, "Ms. Dewey" was a

sleek Flash interface overlaid on Microsoft's Windows Live Search platform. Approximately six

hundred discrete vignettes were filmed to play as responses to users' search queries. Since the

days of Ms. Dewey, anthropomorphized design has increased as a design strategy for all manner

of computer programs across platforms including mobile phones, desktop computing software,

navigation systems, and Internet-based applications. From Apple's Siri to personified customer

service agents offering to answer questions and enrich the online shopping experience, this

design strategy is increasingly incorporated into information retrieval systems, online education

software, and even information-provision models like chat reference. In this project I turn my

attention back to Ms. Dewey as a case study of such anthropomorphized design in a search

engine interface. The Ms. Dewey interface has several unique features that make it an

interesting case to consider, including its status as a Microsoft product, the casting of Ms. Dewey

as a woman of color, and the explicit sexualization of the Ms. Dewey character.

Project Overview

Anthropomorphized design is often viewed (paradoxically) within human-computer

interaction (HCI) as both an innovative and natural way to engage users. The emphasis in this

design strategy is on creating the most human-like virtual helper as possible to mediate

information provision. Though some scholars (Brahnam et al., 2011; Zdenek, 2007) have noted

[1] Formerly available at http://www.msdewey.com
[2] There are some excellent examples of critical race studies applications in LIS including Olson's (2001)

that the representations of virtual agents tend to problematically draw from gender stereotypes including the framing of sexualized female service workers, the majority of scholarship by engineers and computer scientists about the design of virtual agents more often reflects wider technocultural discourse (Dinerstein, 2006) regarding both Western ideas of technological progress as well as the color- and gender-blind ideologies that comprise the current neoliberal political landscape of the United States. At this point there is a dearth of scholarship looking at the design of anthropomorphized agent technologies and interfaces from critical cultural perspectives, including in-depth treatments of particular case studies. To the best of my knowledge, there has not yet been a thorough scholarly treatment of the Ms. Dewey search engine, making this research an important contribution to both understanding the particular case of Ms. Dewey as a "sexy" search engine, but also for more broadly situating anthropomorphized technologies in a matrix of cultural values about technology, gender, and race.

This study is an interface analysis of Ms. Dewey that examines both the semiotic and material aspects of the interface. Gender, race, and sexuality are present in the Ms. Dewey interface in the search design aesthetics, the imagery of the interface, and in the search mechanics (search terms and responses). I use the technique of close reading to "read" these various elements in the interface, guided by the following research questions:

1. How is the Ms. Dewey search engine gendered and racialized?
2. How does Ms. Dewey reveal specific assumptions about gender, race, and sexuality in search?

Interface analysis provides an opportunity to analyze technological artifacts, examining the complex relationships between technologies and the social contexts through which they are produced and attain meaning.

I articulate an analytic framework for studying information and communication technologies (ICTs) that I term "critical feminist informatics." This framework blends critical social informatics work and critical cultural frameworks such as feminist and critical race theories to examine the intersection of identity, ideology, and interaction between people and ICTs, in this case information search. Critical feminist informatics prioritizes gendered power relations as the point of inquiry for ICTs. This allows me to investigate the intersectional nature of gendered and racialized ideologies in technology artifacts and their associated practices, in this case Ms. Dewey and information search. Anthropomorphized agent representations tend to draw on prevailing cultural values around identity, often relying on negative stereotypes, which have historically functioned to justify social inequities. Ms. Dewey is an anthropomorphized agent that functions as a search engine. My analysis of Ms. Dewey interrogates how the gendered and racialized design of the Ms. Dewey search engine reveals the specific assumptions about gender, race, and sexuality in information search.

The goal of this study is to complicate instrumental understandings of how gender and race feature in anthropomorphized information and communication technologies in favor of viewing these social systems as powerful infrastructural features of the interface that support cultural ideologies and shape the information exchange process. A second goal of this study is to illuminate the ethical considerations that designers of technology must engage with to create culturally sensitive technologies. Finally, this study is intended to expand the understanding of the ideological power present in the design of technologies, like information search, that are integrated (and integral) to our everyday experience as users.

CHAPTER 2: THEORETICAL FRAMEWORKS

Information and communication technologies are often viewed purely in technical and functional terms. Similarly, scholars of AVAs frequently focus on functionality and outcome-based performance, often measured by positive user experience or accuracy of information retrieval. Though there has been much interest in the social aspects of these technologies stemming from Clifford Nass, Moon, Morkes et al.'s (1997) important research on computers as social actors, this focus is largely on normative approaches to the user experience and expectations. Issues of identity and representation are treated as design features to be coded and operationalized instead of as artifacts of complex social systems with associated histories and ideologies. Essentialized views of agent technologies obscure the way politics and culture are always embedded in technological systems, effectually making AVAs seem like neutral, or even natural, design choices. My research complicates this framing of AVA technologies by exploring the complex cultural meanings of identity representations, as well as the ways that beliefs about identity and technology shape meaning and expectations for users of AVA technologies. I borrow from definitions of technology that expand from purely functional/technical formations to critically incorporate socio-political and cultural aspects as constitutive elements.

Technology and Culture

Arnold Pacey argues that the term "technology" has, itself, served as a barrier for meaningful dialogue about the role of technology in society. A "catchword with a confusion of different meanings" (1983, p. 3), "technology" can refer both to specific tools and broad systems of practice creating a web of interchangeable definitions that actually represent a wide spectrum of meanings. Borrowing from the field of medicine, Pacey demonstrates that other disciplines

have sorted out similar definitional problems by making distinctions between the techniques and knowledge sets that they use ("medical science") and the more general sets of values and ethics that guide their work ("medical practice"). Pacey suggests borrowing the concept of "practice" and applying it to discussions of technology as a way to make visible the facets of technology having to do with values and organization. Thus, technology-practice can be understood as "the application of scientific and other knowledge to practical tasks by ordered systems that involve people and organizations, living things and machines" (1983, p. 6). Pacey neatly diagrams this concept as a triad of "aspects" (technical, organizational, and cultural) that work together to comprise technology-practice.

The "technical aspect" is the aspect that is most often associated with technology, as perhaps the most restrictive, instrumental definition of technology. The technical aspect includes knowledge, technique, tools, machines, and resources. In common parlance, most people referring to technology are only referencing these technical features. On the other hand, the "organizational aspect" concerns itself with social and political organization including administration, public policy, designers, workers, users, and consumers. This aspect can also be thought of as the "social aspect," and I will prefer that term throughout this work. Disciplines like social informatics have expanded the definition of technology to include these organizational / functional aspects that are now widely accepted to be integral in theorizing technology practices and adoption. These two aspects — the technical and social (or organizational) — have historically been the most visible in technological discourse. So it is the third aspect, the "cultural aspect," that Pacey emphasizes as an important place of inquiry. The cultural aspect deals with the ideological dimensions of technology, comprising values, beliefs, and ideologies—all of which are organizing factors of culture. Culture is constitutive of beliefs,

practices, customs, norms, language, social arrangements, and technology. Socially integrated and accepted technologies function as the status quo and, as such, operate as an invisible, organizing force in society. Importantly, "culture" represents a plurality of ideologies (beliefs) and values systems that are always competing, functioning, and mutually shaping each other. The cultural aspect of technology has been largely neglected in technological discourse and, not surprisingly, in scholarly work about anthropomorphized agents.

The main technical/functional features include the search algorithm that drives the search functions, the Flash platform (which allows for multimedia integration in the interface), the database that links search terms to Ms. Dewey's (character) responses, and the Internet protocols that allow access. Social aspects of Ms. Dewey include its provenance as a Microsoft product, the way the search engine was introduced to users through viral marketing tactics, and the user discourse about Ms. Dewey including reviews, blogs, fan sites, and YouTube sharing of clips that comprise my data set. These social dimensions include the people and politics involved with designing Ms. Dewey, concerns with Microsoft's brand image, the use of viral marketing and an interactive, "experiential" design. Lastly, the cultural aspects of the Ms. Dewey interface are more hidden. These comprise beliefs about technology (broadly, as well as specifically about the information search genre), gender, and race.

Ms. Dewey as a technology cannot be understood without considering the interrelated nature of the technical, social, and cultural aspects. Pacey's model poses the three aspects as an equal triad, locked together in the formation of technology-practice. However, I argue that these aspects are *not* equal in terms of visibility and accessibility, as well as formation. Culture plays a formative role to the technical and social aspects, and must be considered as a *constitutive* aspect. Anthropologist Edward T. Hall (1976) conceptualized human culture as an iceberg with

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just a small fraction of it visible above the water, representing overt culture in the forms of behaviors, structures, policies, technology, and systems. The larger portion of the iceberg is hidden from sight, stretching out under the water as a huge foundation for all that is on the surface. The hidden part of the iceberg represents covert aspects of culture such as beliefs, values, ideologies, feelings, attitudes, and assumptions. Overlaying Hall's cultural iceberg onto Pacey's model illustrates the depth, invisibility, and foundational nature of culture. The technical and social aspects of technology serve conceptually as the tip of the iceberg, visible above the surface of the water. Meanwhile, the cultural aspects run deep and silent, constituting and supporting the surface features, invisible to all but those who dive under the surface.

My study is concerned with exposing ideologies of gender and race in the interface, in terms of the design aesthetics and material aspects of information search. These ideologies are bound up with beliefs about technology, creating a complex technocultural matrix. I turn to Dinerstein's (2006) formulation of the technocultural matrix as a lens for analyzing the visual themes of the interface in terms of the search design, the representation of the Ms. Dewey character, and the urban setting depicted in the interface. The technocultural matrix comprises six key characteristics: progress, religion, whiteness, modernity, masculinity, and the future. Thus, technoculture incorporates a set of interrelated narratives that create a paradigm for understanding the past as well as a potential future, centered on a kind of technological religiosity that Dinerstein claims is deeply rooted in the American cultural imagination. The benefit of technoculture as a lens is that it exposes how ideologies of gender and race are inherent in the conditions of modernity, capitalism, and technoscience. This is an appropriate lens for exploring how the Ms. Dewey interface is gendered and racialized, since the concept of technoculture is, itself, defined by these terms.

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Theorizing the Interface

Anthropomorphized agents function as interfaces, serving as a mediation point between the computer user and a task. Interfaces are typically thought of as the point of interaction between two systems, organizations, subjects, or components. In these instances interaction is usually thought to be social or haptic. However, the interface can also be conceptualized as a cultural and political point of contact that is integral in facilitating access to power. Cynthia Selfe and Richard Selfe describe the interface as a "political and ideological boundary land" (1994, p. 481) that may serve to contribute to a larger cultural system of differentiation and domination in much the same way that geopolitical borders do. They position the border as a formation of social power that prevents the circulation of individuals for political purposes. Selfe and Selfe are specifically interested in how computers function in education, and point to the optimistic view within their field about the role of computer use in English composition education. Their framing of the computer interface as an extension of the oppressor and instantiation of hegemony is in the tradition of Paolo Freire's (1970) articulation of critical pedagogy and the politics of education. By applying M. L. Pratt's (1991) concept of the "contact zone" to the computer interface, Selfe and Selfe contribute a way of thinking about the politics of technology in education that can be extended more generally to probe the nature of the interface.

Pratt defines the contact zone as "social spaces where cultures meet, clash, and grapple with each other, often in contexts of highly asymmetrical relations of power, such as colonialism, slavery, or their aftermaths as they are lived out in many parts of the world today" (Pratt, 1991, p. 34). The contact zone is linked closely to narratives of Western manifest destiny and colonial expansion, both steeped in notions of racial dominance, masculinity, and entitlement. The rhetoric of freedom, liberation, self-governance, and the exhaustive potential for participation,

community, and access to information have historically been persistent themes in discourse about computing and the Internet in particular. Applying the contact zone to the computer interface offers a critical reframing of this discourse, highlighting that computers do not de facto serve democratic aims, and may be directly implicated in facilitating legacies of racism, sexism, heterosexism, colonialism, as well as capitalistic exploitation and classism. More research is needed to historicize how power asymmetries in the interface have shaped the possibilities (and limitations) of AVAs in our current moment. The present project, a recent cultural history of a particular AVA, is a modest contribution to this effort.

Alexander Galloway (2008) describes the interface as "a control allegory" that "indicates the way toward a specific methodological stance" (p. 935), highlighting the metaphoric nature of interfaces and the concomitant ideologies required to approach them. Similarly, Selfe and Selfe note that computer interfaces have semiotic messages built in that betray an alignment along the axes of class, race, and gender. As an example, they point to the metaphor of the computer desktop, which connotes a professional, middle-class workspace, as opposed to other configurations that might be referents to domestic spaces (a kitchen table), or craftsman spaces (a mechanic's workshop). Winner (1986) famously argues that artifacts have politics embedded in them, and certainly this is borne out through these examples. Selfe and Selfe argue, "if the map of the interface is oriented simultaneously along the axes of class, race, and cultural privilege, it is also aligned with the values of rationality, hierarchy, and logocentrism characteristic of Western patriarchal cultures" (1994, p. 491). This is true also in the case of the anthropomorphized metaphor that is central to agent interface design.

Critical Feminist Informatics

This research project is situated in an interdisciplinary space that is informed by information studies, and thus concerned with technology and information, as well as cultural studies, and thus concerned with power, culture, and hegemony. I refer to this blended disciplinary space as *critical feminist informatics*, which I define as an interdisciplinary approach for studying the intersection of identity, ideology, and interaction between people and ICTs that prioritizes investigating gendered and racialized power relations. An extension of Brock's (2013) articulation of critical cultural informatics, my approach uses humanistic methods and critical cultural studies frameworks to interrogate gendered and racial ideologies as key elements of the socio-technical matrix. Using this framework, I am able to ask questions about how beliefs about gender, race, and technology are expressed in the design, use, and meaning of AVAs like Ms. Dewey. This framework is flexible and can be applied to a range of ICT artifacts and their associated practices.

Gender and race have not traditionally been prioritized as agendas in the field of Library and Information Science (LIS), though I argue these lenses are fundamental for theorizing the meaning of technology in society and for linking ICTs to institutional and structural power systems. Though individual scholars have integrated cultural analyses of gender and race across all areas of LIS, explorations of power, particularly racialized power, remain largely absent from the field on the whole.[2] Pawley (2006) notes that this is particularly lacking in the science/technology subareas of LIS, in other words the areas concerned with technology design

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[2] There are some excellent examples of critical race studies applications in LIS including Olson's (2001) investigation of race and gender in cataloging and description, and Dunbar's (2006) call for an critical race theory perspective for archives.

and use.

Social Informatics

My orientation to critical feminist informatics draws heavily on social informatics (SI), or the study of social aspects of information. Kling (1999) more formally defines this field as "the interdisciplinary study of the design, uses and consequences of information technologies that takes into account their interaction with institutional and cultural contexts." Social informatics is an interdisciplinary field defined more by topic than method (Kling, 1999), and has historically had a strong presence in LIS. Indeed, the second "big question" that Bates (1999) articulates for information science is "the social question" which asks, "How do people relate to, seek, and use information?" (p. 1048). Social informatics is a branch of LIS that directly engages this question.

Research in SI has shifted over the years from deterministic impact questions (e.g. Attewell, 1987; Iacono & Kling, 1987) to contextual inquiry that considers the social matrix in which technology is located. Central to this has been work rejecting deterministic models for technology and society in favor of multidirectional models such as those articulated by Bijker and Pinch (1989). Sawyer and Eschenfelder (2002) describe SI as a "problem-oriented" field that relies heavily on empirical evidence, and draws from a variety of qualitative methods including ethnography (Suchman, 1996), varieties of social theory (Wellman et al., 1996), and archival methods (Medina, 2006). However, humanistic methods such as visual analysis and discourse analysis have been underrepresented in SI as have cultural studies perspectives.

SI is comprised of normative, analytical, and critical orientations of research (Kling, 1999). Normative approaches make recommendations about design, use and implementation of ICTs, whereas analytical approaches are concerned with developing theories about ICTs in

institutional and cultural contexts (Sawyer & Eschenfelder, 2002). The critical approach questions normative claims and assumptions about technologies and does not automatically adopt the goals and beliefs of those who design and implement ICTs (Sawyer & Eschenfelder, 2002). Normative and analytical approaches are the most common orientations in SI, with the critical approach being described as "novel" (Agre & Schuler, 1997), but also potentially the most important (Rosenbaum, 2009), and the heart of SI work (Day, 2007). Most virtual agent scholarship is dominated by normative and analytic approaches that seek design solutions to make better virtual agents. My research is most closely aligned with the critical approach in that I aim to question assumptions about anthropomorphized design, and beyond that, to locate anthropomorphized design in a technocultural framework. While critical approaches to informatics provide a template for this kind of inquiry, the emphasis on a social science agenda in SI reveals some epistemological conflicts that require an extension of the SI understanding of "critical" into cultural studies domains.

Critical Informatics

Day (2007) argues that SI would benefit from an expanded notion of the "critical," particularly in terms of methodological and theoretical approaches. He points out that the empirical, problem-driven imperative of SI leads to "solution-centered" answers and conclusions in research. This stems from the social science model from which SI research has historically drawn, which tends to pose causal relationships between social factors and technological agents. However, cultural materials, which include rhetoric and discourse, are not causal (Day, 2007), and are instead mutually constitutive of ideology and social structure. Day's move in critical informatics is to strengthen the social science agenda by shedding light on the contributions of critical qualitative work in this sphere.

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Day critiques the problem-based approach noting that "genre analysis and critical studies are neither defined nor exhausted by empirical techniques as defined by the quantitative social sciences, nor do genre analyses and social critique necessarily lead to solvable problems" (Day, 2007, p. 577). Instead genre analysis and critical studies point to conceptual problems that may be resolved through analysis, but not "solved" since they are "not rationally nor empirically structured so as to yield such certainty through analysis" (Day, 2007, p. 577).

This critique is key to framing my inquiry into the design, representation, and performance of Ms. Dewey. Under a traditional SI framework, the problem-driven imperative would guide the research questions in this project back to "solving" the negative / stereotypical representations present in the Ms. Dewey interface or in the use of the artifact. Indeed, this is common feedback that I receive when I present this work in SI and human-computer interaction (HCI) scholarly venues. A question commonly asked is, "If Ms. Dewey's design draws from negative stereotypes, what kind of representation and identity would be best to promote more socially positive interactions with the interface?" Though it is valid to ask how we might design to be more socially responsible, this line of questioning misses the point of the larger critique of structural power of the cultural studies approach. The framing of these questions locates the "problem" with the technological artifact, rather than with social systems of difference (sexism, racism), positing exactly the kind of causal relationship between social context and technology that Day (2007) warns against.

On the other hand, the technological artifact is not irrelevant in this inquiry. For instance, humanists and social constructionists tend to eschew the importance of information infrastructure, focusing purely on the social matrix. In contrast, Langdon Winner presents a technical realist argument that technological artifacts are inherently political, embodying

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"specific forms of power and authority" (1986, p. 19). He uses the famous example of New York bridges that, beyond their function of transportation, limited access by public transportation to specific areas of the city, furthering racial segregation. Winner's point is that though there are indeed social factors relevant to understanding technology, there are also politics implicit in its very materiality. There is some tension between constructionist views and technical realist views of technology, though they both offer important insights into how values structure technology-practice.

Hutchby (2001) offers a third approach in addition to constructivist and technical realist approaches by focusing on the affordances and limitations of technologies. He views technologies as texts that are "written" (designed and configured), as well as "read" (interpreted by users, consumers, audiences). Affordances "constrain the way they [technologies] can be written or read" (Hutchby, 2001, p. 447). This suggests that while users of Ms. Dewey may have a range of interpretations and functions available to them when they are engaging with the interface, that range is not unlimited. They could not, for instance, make the Ms. Dewey character do anything that had not already been scripted and filmed. The concept of affordances guides my approach for performing interface analysis in this study. This approach is useful because it makes clear that human intervention, and thus value sets, are present both in shaping the design and constraining the use of technologies.

Critical Cultural Informatics

Lisa Nakamura (2006) advocates integrating critical race theory frameworks into digital media and cyberculture studies. She suggests that visual artifacts on the Internet be analyzed in a critical race theory framework and incorporate "theories of cultural difference." Brock's (2013) abovementioned articulation of "critical cultural informatics" does just this, expanding SI

research to include humanistic methods and a critical cultural studies orientation. His framework modifies the problem drive of SI, focusing on uncovering beliefs, rather than changing (solving) them, using humanistic methods and cultural studies frameworks like critical race theory. Brock's critical cultural informatics incorporates historical and cultural factors that influence ICT design, implementation, and use. Other attempts to combine cultural studies approaches to information and information technologies like Vaidhyanathan's (2006) "Critical Information Studies" have focused on political economic frameworks. While political economic frameworks do an excellent job of exposing corporate interests and commodification of information, dynamics of gender and race tend to be obscured in these paradigms. Brock's move in critical cultural informatics brings critical race theory to the center, creating a unique space for interrogating racial ideologies implicit in technoculture.

Similarly, my work grounds the representation, performance, and user discourse of the Ms. Dewey interface in the context of gender dynamics in the United States. Whereas Brock prioritizes exploring the intersection of racial ideologies and technology, I emphasize how gendered power relations are embedded in the technoculture. I draw on feminist theories of technology to address the fact that gendered ideologies and power relations have often been neglected or obscured in information and technology studies.

Cultural Frameworks: Gender and Race

Gender is a social phenomenon that works "as an institutionalized system of social practices for constituting people as two significantly different categories, men and women, and organizing social relations of inequity on the basis of that difference" (Ridgeway & Correll, 2004, p. 510). The gender system relies on cultural beliefs about gender that influence macro-level distribution of economic and social resources, social behavior and interpersonal

relationships, and identity construction (Ferree, Lorber, & Hess, 1999; Glenn, 1999). Ridgeway and Correll describe the importance of "social relational contexts" in maintaining the gender system. A social relational context is defined as "any situation in which individuals define themselves in relation to others to act" (Ridgeway & Correll, 2004, p. 511). As my introductory scene shows, the Ms. Dewey interface constitutes a social relational space where gender beliefs and rules come into play. These culturally based understandings, joined with beliefs about technology, create an integrated technocultural rendering of the interface.

Scholars have described the relationship of gender and race as "intersectional," "multiple consciousness," "interlocking systems of oppression," and "racialized gender" to highlight the interconnected nature of these systems (Crenshaw 1989; Harris 1990; Collins, 1990; Glenn, 1992). Glenn deftly describes gender and race as both "*relational* concepts whose construction involves both *representational and social structural processes* in which power is a constitutive element" (1999, p. 11; emphasis in the original). This means that gender and race are constructed dichotomously through binaries (e.g. male/female or Black/White), having no meaning in the absence of the other. These binaries are constructed and enforced through social structures like the organization of labor, differential legal status, residential segregation, and stratified government benefits. However, they are also constructed through representations of individual and community identity, consciousness, and political activity (Glenn, 1999), and such representations are constructed discursively through rhetoric. All of the above operates with power as a constitutive element through processes of domination, hegemony, and disciplinary regimes (Foucault, 1977). My analysis of Ms. Dewey draws on these theories to locate how racial identity and ideology are constructed in the interface through the visual imagery as well as the discursive interplay of the search terms and search results.

Judy Wajcman's "technofeminist" theory positions technology as "both a source and consequence of gender relations" (Wajcman, 2010, p. 149). According to Wajcman, technologies are always "inextricably linked to particular institutionalized patterns of power and authority" (1991, p. 63). This means that technologies are never independent from the ideologies of the humans who design and use technologies. Feminist researchers of technology ask different research questions (Koerber, 2000), moving beyond the design and development phases of technology-practice to consider how technology and gender mutually construct each other and how technology organizes the lives of women. The feminist technology studies approach reframes information science questions by shedding new light on old terrain, revealing processes traditionally thought of as apolitical to be steeped in social systems of power. In the tradition of feminist scholars of technology, I locate the use of anthropomorphization as an interface design strategy that is an explicitly gendered and racialized project. My contribution to scholarship about agent design is a reframing of anthropomorphization to reveal that it is a site of power that shapes the mediation of information exchange in ideological ways.

Though feminist scholars of technology take gender as their point of departure for inquiry into technology, women of color, non-Western women, and poor women have often been missing from this paradigm. This has the effect of normalizing the experiences of white, middle-class, Western women, which falsely constructs a unified female experience, neglecting the many ways women construct their identities through race, class, sexuality, and ethnicity (to name a few dimensions). Anne Balsamo notes that though technologies as extensions of scientific knowledge are organized through patriarchal interests, they are not monolithic structures and do not "impose a singular reality or set of consequences on all women equally" (1996, p. 96). This is critical to consider when thinking about the different representations of AVAs through axes of

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gender and race. The intersecting identities in agents connote different cultural meanings and have particular histories that shape their modern reception. For example, Ms. Dewey's depiction as a woman of color links her to white, Western cultural narratives about the sexual availability and lasciviousness of brown women. My interface analysis uses an intersectional framework to situate Ms. Dewey in these broader critical cultural frameworks.

Conclusion

For my Ms. Dewey case study, I use critical feminist informatics as an approach to shed new light on anthropomorphized design strategies, asking how this design relies on gendered and racialized ideologies as part of the infrastructure of the technological artifact, and, ultimately, how this shapes the search experience. Critical feminist informatics draws from strong traditions in social informatics, critical informatics, and cultural studies to highlight information and communication technologies as dynamic and complex sites of gendered and racial social power. This framework deepens understanding of ICTs as culturally-produced sites of power. In my next section I will explore the scholarly literature of anthropomorphized virtual agents, focusing on how ideologies of gender and race have been both ever-present and obscured in these technologies and in their scholarly treatment.

CHAPTER 3: DESIGNING ANTHROPOMORPHIZED VIRTUAL AGENTS

Of course, human beings themselves lie at the final goal of robotics, which is why we make an effort to build humanlike robots. - Masahiro Mori, "The Uncanny Valley"

Computer programs have a long history of being assigned human features, characteristics, and personality traits. Even before fully embodied representations of interface agents were possible, gender, race, and sexuality were a fundamental part of the theory and design of intelligent computer agent programs in the field of artificial intelligence (AI) and later in human-computer interaction (HCI). Notions of humanness, intelligence, and thinking have been key in theorizing AI and have had great influence on the subsequent development of computer programs that imitate humans, including the design of anthropomorphized virtual agents (AVAs). However, history has also shown us that concepts of "humanness" and "intelligence" are strongly mediated by social power structures such as gender and race. Thus processes of anthropomorphization implicitly draw on hegemonic social identity narratives that are then embedded in the design and use of these programs. This chapter defines and contextualizes virtual agents, focusing particularly on issues surrounding the inclusion of racial and gender identities in the design of agent technologies.

Virtual Agents

Virtual agents are also known as interface agents, animated characters, embodied conversational agents, personified agents, and virtual humans ("v-humans"). Brenda Laurel describes an interface agent as "a character, enacted by the computer, who acts on behalf of the user in a virtual (computer-based) environment" (Laurel, 1997, p. 208). For this work I use the term "anthropomorphized virtual agents" (AVAs) as a way to emphasize the design aspects of these computer programs and interfaces that are designed to have human features, characteristics,

and personality traits. "Virtual" here distinguishes Web-based or Internet platforms from other kinds of anthropomorphized agents, since my case study "Ms. Dewey" is an example of an AVA that functions as a search engine interface. Anthropomorphism may be constructed *visually* through graphic representation, *aurally* through speech patterns and vocal styling, and *textually* through written interactions with the user. Anthropomorphization may occur in degrees ranging from less humanoid programs like Microsoft's old "Clippy" assistant for Office, to more humanoid examples such as "Anna" from IKEA who resembles a call center operator with a headset and cheery smile. Anthropomorphized programs are not new and can be traced back to early efforts at artificial intelligence and conversation agents like Weizenbaum's (1966) ELIZA program. Still, this design strategy has persisted, and in doing so has become quite normalized within the fields of human-computer interaction and computer science.

Scholars in many fields have explored AVAs. Within artificial intelligence (AI) and human-computer interaction (HCI), scholars have explored race and gender as design variables that can be optimized to create believability, thus enhancing user experience of interfaces. For example, Nass, Moon and Green (1997) observe gender stereotyping in testing how users apply categories and rule in social responses to computers. J.A. Pratt et al. (2007) have found that users prefer computer agents whose ethnicity is similar to theirs. Rhetoricians have explored how representations of AVAs often re-instantiate harmful stereotypes about race and gender. For example Zdenek (2007) finds that virtual women that represent customer service workers draw heavily from stereotypes about women's work. Brahnam et al. (2011) demonstrate that virtual women enact male fantasies of heterosexuality. However, none of these works articulates the fusion of the aesthetic aspects of the interface with the technical aspects as comprising technocultural discourse informed by ideologies about both technology and identity. The present

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analysis contributes to scholarship by focusing on the values that are embedded in the representation of AVAs as well as the users' beliefs about these technologies. This project focuses on a case study of one information artifact, Ms. Dewey, as a way to deeply explore how cultural values may be expressed and leveraged through anthropomorphized computer design.

Laurel (1997) identifies four kinds of computer-related tasks where virtual agents may be appropriate. The first of these tasks is *information*, generally comprising navigation and browsing functions, information retrieval, and the sorting, organizing and filtering of data. Agents are also adept at performing the second set of tasks, *work* functions such as reminding, programming, scheduling, advising. *Learning* is the third skill-set appropriate for agents and includes coaching and tutoring. Lastly, agents are used in *entertainment* and are found in gaming situations performing, and playing with and against human users. According to Laurel, agents' involvement is appropriate in these instances because these tasks either require complex algorithmic solutions or "complete parametric specification by the human user" (p. 212).

AVAs have been used in all of the areas that Laurel identifies. Apple's Siri application is a popular example of an AVA that fills work-related functions similar to a personal assistant, organizing personal data, maintaining a calendar, sending memos and text messages. Siri may occasionally fill an information role by performing search engine searches as a proxy. AVAs by companies like Artificial Solutions can be used as dialogue partners for educational goals like learning a second language, or as customer service agents like "Anna" from IKEA who can answer questions in 21 languages. Lastly, AVAs are easily recognizable in computer and video games as they interact with the player to provide clues, fight, and advance gameplay in other ways. This reveals that agents often have fluid functions and may be at once entertaining and educating, providing information retrieval while also scheduling appointments. In the case of

Ms. Dewey, the AVA has both a practical information retrieval function as a search interface, but also performs and entertains, resulting in some game-like interaction with users.

<u>Passing Turing's Test</u>

Looking back, the story of anthropomorphic computer agents could easily begin with Alan Turing, the English cryptanalyst who broke the German Enigma codes and is heralded as a founding father of computer science. In 1950, Turing published the formative paper "Computing Machinery and Intelligence" in which he proposed to replace the question "can machines think?" with another set of questions embodied in his "imitation game." For Turing, the original question of 'Can machines think?' is "too meaningless to deserve discussion" (Turing, 1950, p. 442), while formulating the problem of machine intelligence through the imitation game gives it the "advantage of drawing a fairly sharp line between the physical and the intellectual capacities of a man" (Turing, 1950, p. 434). This juxtaposition of the physical and the intellectual is a theme that runs throughout work in artificial intelligence and, later, in agent design. This is an important theme to trace since the mind/body binary is also prevalent in the discursive construction of social hierarchies such as race and gender. Feminist thought has demonstrated that men tend to be associated with intelligence, mind, and thought, while women are associated with the body, emotion, and intuition. Similarly, critical race scholars have observed that hegemonic discourse associates whiteness with intelligence, virtue, and civility while the racialized Other is associated with nature, the body, and the primitive.

The thought-experiment that Turing introduces as his imitation game is often referred to as "Turing's test." The Turing test that is remembered in collective scientific memory comprises three players, a computer, a man, and an interrogator. The interrogator uses a text-based interface to communicate with two terminals, designated X and Y, with the purpose of

deciphering which terminal is actually the man and which is the computer. If the interrogator

cannot reliably tell apart which terminal is man or machine, the machine is thought to have

passed the test.

Interestingly, this is actually the second test that Turing proposed in his paper. He first

introduces his thesis by way of a sexual guessing game that Susan Sterrett (2000, p. 542) dubs

the "Original Imitation Game (OIG)." In the OIG gender is a central component, whereas his

"Standard Turing Test (STT)" removes gender as an explicit variable. For clarity, I will borrow

Sterrett's terminology in this discussion. As in the STT, the OIG names three players, this time a

man, a woman, and an interrogator that "may be of either sex" (Turing, 1950, p. 433). The test

mechanics are the same in the OIG, though the interrogator's objective is to figure out which

terminal is operated by the man and which is operated by the woman. The interrogator's job is

complicated by the fact that the man is instructed to use deception and lie to the interrogator

outright in answering questions, whereas the woman's "best strategy" is to tell the truth.[3]

The fact that the OIG explicitly links gender, sexuality, and computer intelligence is

important for understanding how these frameworks become implicitly embedded in the STT.

Judith Genova (1994) points out that it stands to reason that the STT also includes "sexual

guessing" at its core. As evidence of this she points to the fact that gender assignments are so

carefully given with intricate rules for engagement in the OIG, and women are very deliberately

removed from the STT while the other gender assignments remain constant. Far from being an

arbitrary decision, Turing's inclusion of gender into the set of problems "has a very explicit and

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[3] Judith Genova (1994, p. 322) has interpreted this to mean that the woman must *always* tell the truth in the OIG, which she analyzes as a potential expression of sexism, parodying stereotypical gender roles and expectations. This could also be an idealizing view of women/femininity, as being less deceptive, with of course the concomitant exclusion of women from the fictive and constructed (and therefore civilized) realm of men.

radical agenda in further complicating the gender stakes" (Genova, 1994, p. 314). Though

Turing is largely concerned with questions about machine intelligence and who or what can

think, "less obvious are the questions he raises about the nature of gender and sex, the natural

and the artificial, the analogue and discrete, and the biological and cultural" (Genova, 1994, p.

313). Indeed, Turing configures his players as being inextricable from their gendered and sexual

identities and roles, such that "man" is not the generic man, but a *specific* man who is contextual

and fluid. This implies that thinking and knowledge are linked to gender, which, instead of

being biological, is cultural and discursive.

Many scholars have noted the significance of the OIG in terms of Turing's self-

identification as a gay man and the sexual guessing games imposed upon him in a

heteronormative culture. Ahead of his time in many ways, Turing was open about his sexuality,

though he wrestled his whole life with questions of sexuality, masculinity, and what it meant to

be a man (Hodges, 1983). Genova notes that

> given this personal context, to devise a test for thinking that confused
> men, women, and machines was a stroke of wit and genius. The possible
> mergings of humans with machines; and men with women made it clear
> that no boundaries were sacred or unbreachable. All rules, all categories,
> all boundaries were made to be transgressed. (Genova, 1994, p. 317)

Beyond his struggles to fit into a sexually repressive and heteronormative society, Turing also

struggled with his body. Hodges' excellent biography (1983) reveals that Turing stuttered, had

terrible penmanship, and was a clumsy adult. This must have troubled him, as he was a highly

rational person. He exhibited extreme discipline in athletics and was, most notably, an

accomplished long-distance runner. That he found beauty in logic and mechanization leads

Genova (1994) to speculate, "perhaps he began imagining himself to be a machine early in life to

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escape his body and his difficult social communications" (p. 316). In any case, the metaphor of the body as a machine juxtaposed with his philosophical questions about masculinity may shed light on his preoccupation with machine intelligence as it is linked to gender and sexuality.

The Turing test is praised by scholars as providing "a simple, objective and technical way of testing the quality of an AI program— namely, whether, at least within its domain, it can 'pass for human' or not" (Baggi, 2000, p. 352). This framework of "passing" is important, however, for it suggests that Turing's test posits intelligence and identity as flexible and situated, much like socio-cultural understandings of gender, race, and sexuality. "Passing" refers to the act of successfully appearing as belonging to another identity group, usually one that confers access to more social benefits and privileges. Passing is a complex concept that is often problematically implicated in enforcement of restrictive identity binaries such as male/female, black/white, and gay/straight. A contested term, passing implies a kind of deception, which ignores the lived realities of discrimination, violence, and persecution that often make passing a necessary or compulsory survival strategy (see Altman, 1993; Miller, 1998). Johnson (2002) links the politics of passing to the construction of heteronormative citizenship and civilian rights, reframing the boundaries and stakes of what "passing" might mean in Turing's Test.

Tragically, Turing lived during a time when living as a gay man was illegal and punishable by the state. Only two years after he published "Computing Machinery and Intelligence" the British police charged him and his lover, Arnold Murray, with gross indecency after Turing reported a burglary in his home that implicated Murray. Turing "opted" for a sentence of chemical castration (estrogen hormone injections) over a prison term, a treatment that drastically altered his body including the growth of breasts. He endured the hormone treatments for two years, then in 1954 took his own life by eating an apple drenched in cyanide, a

kind of homage to his lifelong obsession with *Snow White and the Seven Dwarfs*. Given

Turing's personal experience being persecuted for his sexuality, the double meaning and

implications of "passing" should be regarded as integral to his explorations into the nature of

artificial intelligence, humanity, gender, and sexuality.

Though there have been many critiques of the Turing test (STT), it is unquestionably

influential in AI research and remains foundational for looking at how gender has been wrapped

up in the question "can machines think?" for over 60 years. Turing's thought experiments

inspired computer scientists to design programs that could act as real-life Turing tests, and

pushed the idea of computer agents as interfaces. This theme of knowledge in artificial

intelligence and virtual agents as being linked to gender is one that persists and has been

influential in the design of famous AI programs such as ELIZA the psychologist agent designed

by Joseph Weizenbaum (1976), and Michael Mauldin's conversational agent, JULIA, entered in

the first Loebner competition for artificial intelligence (Mauldin, 1994). As with Turing's Test,

gender and sexuality remained central in the designs of these programs in both intended and

unintended ways.

The Anthropomorphized Metaphor

Metaphor simultaneously describes two objects at once, and operates through the

recognition of an aspect of the primary object in the secondary object. Metaphor is a distinctive

form of likening because it requires that we actually speak of the primary object in terms of the

secondary object as if they were the same (Hills, 2012). As such, metaphors are often employed

as heuristic tools, meant to facilitate understanding. Importantly, metaphors are culturally based,

grounded in correlations from our own experiences (Lakoff and Johnson, 2003), and necessarily

embodied. Considering the role and function of metaphor is essential when discussing

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interfaces, and becomes even more explicit in AVAs where anthropomorphization is the foundational metaphor for design.

The point of comparison that the metaphor of anthropomorphism relies on for interface design is the sociality of human interaction. Not all virtual agents are anthropomorphized, but there are many advocates for using anthropomorphization as a design strategy for enhancing usability of interfaces (e.g. Lester et al., 1997; Waern & Höök, 2001). According to Laurel (1997), "the kinds of tasks that computers perform for (and with) us require that they express two distinctly anthropomorphic qualities: *responsiveness* and the *capacity to perform actions*" (p. 210). The foundation of this thinking is that humans are naturally skilled at relating to and communicating with other humans, thus interface design should exploit this as psychologically advantageous and HCI should actively engage these innate skills. To paraphrase Lakoff and Johnson's work, the anthropomorphic metaphor provides us not only a specific way of thinking about a topic, but also a way of acting towards it (2003, p. 34). In other words, anthropomorphization is a tool that repurposes human skill sets for sociability in the translation of otherwise foreign interactions with computer agents into more familiar social ones. What this metaphor misses when applied to virtual agents are the ways in which social interaction is heavily mediated by culture and its associative norms, practices, and power structures. Therefore it is imperative to look more closely at the values that are designed into AVAs and interfaces, teasing out their complexities and consequences.

AVAs as Social Actors

Sean Zdenek (2007) points out the anthropomorphization of virtual agents has become deeply naturalized, though there is no hard evidence proving they are superior in function to non-anthropomorphized agents. Instead it has become a "seemingly unassailable claim that users

treat computers, regardless of whether they are designed with faces or not, as social actors"
(Zdenek, 2007, p. 403). Clifford Nass is credited with casting computers as social actors (see
Nass, Moon, Morkes et al., 1997; Nass and Moon, 2000). Nass, Moon, Morkes et al. (1997)
tested the idea that people engage with computers as social actors. They found that the users in
their study applied politeness norms and varied their responses to the computer's personalities
and flattery as they might with a human actor. In another study they found that users drew
heavily on gender stereotypes in their interactions with the computers (Nass, Moon, & Green,
1997). This has contributed to the foundational framing of human-computer interaction as a
social interaction between two human-like actors. While there have been some challenges to this
work (see Shechtman & Horowitz, 2003), the paradigm of computers as social actors remains
dominant in HCI and is critically implicated in AVA design.

Previously scholars (e.g. Turkle, 1984; Winograd & Flores, 1986) attributed people's
social responses to computers as proof that individuals anthropomorphize computers. However,
Nass, Moon, Morkes et al.'s (1997) work found that, when explicitly asked, users acknowledge
that the computer is not a human and should not be interacted with as such. Despite this
awareness, they engage in social behavior towards the machines regardless. This shows that
while people may behave in social ways towards computers, they may not be explicitly
anthropomorphizing the machines. In later work, Nass and Moon elaborate on this seeming
contradiction by showing that people "mindlessly apply social rules and expectations to
computers" (2000, p. 81). "Mindless behavior" is a concept they borrow from Ellen J. Langer's
work (1989; 1992). Mindless behavior can be characterized as an "overreliance on categories
and distinctions drawn in the past and in which the individual is context-dependent and, as such,
is oblivious to novel (or simply alternative) aspects of the situation" (Langer, 1992, p. 289).

Mindless behavior is presented as a kind of cognitive autopilot in these studies, though in later work Langer and Moldoveanu (2002) briefly acknowledge the social implications of mindless behavior for normalizing harmful stereotypes and prejudices. The corollary to mindless behavior is mindfulness, which Langer (1989) describes as the cognitive state where an individual is conscious of both the content and context of information. Mindless behavior describes an overreliance on categories based on personal experience as a way to deal with a novel situation or context. The lens of privilege might be another way to understand how personal experience shapes what individuals might be mindful / mindless of. Instead, the paradigm for AVA design seems to cater to mindless behaviors as the path of least resistance, further entrenching the naturalization of this design strategy and ignoring how this may lead to reliance on stereotypes.

Coinciding with the framework of computers as social actors is an overwhelming emphasis on the positive effects of anthropomorphized agents. Lester et al. (1997) coined the term "persona effect" to refer to the phenomenon that a life-like interface agent may have positive effects on the user's perception of a computer-based interaction task. This concept has been used widely in AI and HCI as validation for the use and design of AVAs (e.g. Moundridou & Virvou, 2002). Though many anthropomorphic agents are not humanoid in design (e.g. Microsoft's former Office Assistant "Clippy," a paperclip with eyes), many studies place a premium on increasingly realistic humanoid AVAs asserting that humanoid interfaces engender increased cooperation (Kiesler & Sproull, 1997), or altruistically oriented interactions (Sproull et al., 1997). Interestingly, this was not actually borne out in Microsoft's Clippy, a widely maligned AVA that mostly served to annoy users. Anna from IKEA, however, is an example of a hugely successful AVA (Noy et al., 2013), which may support evidence that more humanoid

AVAs connect more with audiences, to the extent they do not wander into Mori's (1970) "uncanny valley" where an almost perfect humanoid resemblance creates feelings of strangeness and revulsion among users.

Most of this research is empirical, drawing evidence from user interface testing, user questionnaires, and in some cases biofeedback models (Prendinger et al., 2003). Waern & Höök (2001) note, "the more anthropomorphic the agent is, the more naturally the user will respond to it, and the more 'human' the dialogue will become" (p. 298). This raises important questions about the underlying assumptions as to what constitutes "natural" behavior in the framework of human interactions. For example, Nass, Moon, and Green find that users apply gender stereotypes to computers, which leads them to conclude: "the tendency to gender-stereotype is so deeply ingrained in human psychology that it extends even to computers" (1997, p. 154). This framing of sexism as a "natural" human behavior is dangerous and reveals the ways in which sexist ideologies are embedded in notions of nature and human behavior.

Zdenek points out that designers and researchers who build their work on the premise that human-computer interaction operates as human-human interaction "do not have to justify their own research agenda so much as claim the role of facilitator or catalyst for a phenomenon (i.e., the human propensity to treat computers as social actors) that is taken to be predetermined, universal, and above all, natural" (2007, p. 405). This is a powerful and important observation. The scientific enterprise has a long history of using appeals to nature to explain racial, gender, and sexual difference, often for the purpose of justifying economic, political, and social projects that protect the status of the dominant power structure. Instead of approaching anthropomorphization as natural and inevitable, it must be approached as a particular philosophy of design with concomitant values that can be examined for ethical implications and moral

accountability.

<u>Designing Race and Gender in AVAs</u>

Many designers of AVAs focus on humanness and believability in agent interfaces as features that will optimize the user's information experience. These abstract concepts are often defined by component qualities such as trust, friendliness, credibility, and empathy, which are further operationalized in the design process through verbal and non-verbal cues. The key supposition in this design strategy is that the user will judge the character of an anthropomorphic computer agent based on the same criteria that they use to judge humans in daily interaction. Zdenek observes that, in focusing on user experience and believability as units of analysis for evaluating AVAs, "designers may also fail to see how their software systems are shot through with assumptions about gender, race, ethnicity, users, and so on" (2007, p. 405). This is true in the very base constructions of the category of "human," for instance. At different points in history, "humanity" and "humanness" have been denied to people based on their gender, race, religion, ethnicity, and sexuality, and have been used to justify atrocities such as slavery, genocide, and rape. Similarly, the social construction of attributes such as trust, friendliness, credibility, and empathy are mediated by systems of gender and race. Notions of masculinity and femininity are often defined by their alignment with these terms, framing women as more empathetic and friendly, and men as more credible and competent. Racial stereotypes shape who is seen as authoritative and trustworthy, and who is pathologized and seen as criminal. AVA design has treated humanness and believability as natural categories, forgoing deeper investigation into the political histories and social construction of these concepts. Additionally, language describing personality traits as "variables" employs a mathematical metaphor that trades on positivist scientific authority. This obscures the socially mediated and flexible realities

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of these categories.

Zdenek (2007) also points out that race and gender themselves become viewed as variables that strengthen or weaken the design goals of believability. As a result, studies that deal with race and gender in agent interface design tend to focus on optimization, ignoring how race and gender function within systems of social difference. Often race and gender are acknowledged only as "problems" to be solved. In these configurations the normative subject is usually constructed as white and male (and presumably straight), therefore unproblematic and uncomplicated as a design option. Women and non-white identities are seen as potentially problematic in terms of meeting design goals that promote "authority" or "trust".

Cowell and Stanney's work (2003) provides an example of how race and gender are dealt with as design variables. Their study analyzes race and ethnicity (which they conflate in the paper), gender, and age in agent design with the goal of drafting design guidelines for "credible" and "trustworthy" agents looking at both visual representation as well as non-verbal behaviors. Cowell and Stanney begin by acknowledging the pervasiveness of gender, racial, and age stereotypes in society by providing substantive literature reviews on each area. However, even as they acknowledge this, they cite studies demonstrating that male and female users rank male agents more highly in terms of credibility and believability. Along the same lines they refer to studies showing that youthful agents are more highly rated. Instead of problematizing these results against the stereotypes they enumerated, they conclude the combination of these features that would provide the best possible option for default design guidelines, effectively reinforcing the stereotypes they listed.

This had the most problematic effects on their formulations of ethnicity and race. While they acknowledged that racial stereotypes come up as major barriers in acceptance of credibility

and trust, they concluded "all ethnic groups appear to harbor their own out-group prejudices and use similar stereotypes for people in their own ethnic group" (Cowell & Stanney, 2003, p. 303). Like the previously discussed comments of Nass, Moon, and Green naturalizing sexism through gender stereotyping, Cowell and Stanney essentially dismiss racism as merely a normal part of the human experience. This viewpoint fails to locate racism as a social system that enforces broader ideologies such as white supremacy (in the United States context), the effects of which are not shared and felt equally, but instead are targeted and systematically applied to protect privilege.

Cowell and Stanney suggest that the solution for agent design in light of racial prejudice would be to match the ethnicity of the agent to the ethnicity of the user to create the most potential for trust and credibility. Customizability is often offered as a potential solution to side-step tricky questions about how to mediate, or altogether avoid, criticisms of negative stereotyping in agent design. This strategy gives users a level of control over the representation of their AVA for which they could then, presumably, design an agent that would be non-offensive to them. While this scenario appears to be culturally sensitive, it requires further examination into the possible effects of customization and individualization, whether or not this strategy promotes social progress or ideological isolation.

The Gendered Interface

Brahnam et al. (2011) demonstrate how the foundational human-computer interaction (HCI) metaphor *computer is woman* is closely tied to the maintenance of the gendered labor force in computing. They link this history to the continuation of the *computer is woman* metaphor as it is reproduced in the designing of virtual women in the form of AVAs. While metaphors potentially facilitate new understandings of one experience through another, they may

also leverage stereotypes and tropes in ways that reinforce dominant power structures.

The *computer is woman* metaphor has roots in the early history of computing in which women technicians functioned as human computers performing tasks such as bookkeeping, calculating, stenography, filing, and clerking (Brahnam et al., 2011; Ceruzzi, 1991; Grier, 2007; Light, 1999). Initially computing was viewed as menial number crunching and repetitive processing akin to low-level clerical work. "Computers," were the term for people (often women) who "reduced or analyzed data using mechanical calculators" (Ceruzzi, 1991, p. 237). Male engineers felt that these tasks were a waste of their time and skills, thus women were tracked into these jobs (Light, 1999, p. 460). In her account of the gendered history of the ENIAC (Electronic Numerical Integrator And Computer), Chun emphasizes that understanding these women as operators emphasizes their functional involvement with computing but does not fully capture the ways these women shaped the machine to make it functional (2011, p.31).

Gender and sexual stereotypes were crucial in justifying and maintaining this division of labor. Women were cast as "naturally" possessing the physical and mental dispositions of patience, alertness, tirelessness, and precision that made them ideal computing workers. As machine computers were invented to take over the work of these female technicians, the same gendered attributes were effectively transferred to the machine, metaphorically constructing the machine as woman.

Brahnam et al. note that because computing was women's work, the value and capacity of the machine computer was similarly constricted by gendered expectations:

> Few involved in the early development of electronic computers could
> imagine the potential these machines offered; they were blinded in part
> by the fact that computers were computers. They simply performed the
> massive, monotonous calculations demanded by the military, the

government, and the hard sciences. Because these repetitive and
mundane tasks were figured as women's work, the capacities of
computers were viewed as limited. (Brahnam et al., 2011, p. 404)

As the potential for computing moved away from being purely computational into a more fully
realized vision of information encoding, a shift occurred with the reframing of computer
programming as creative, intellectually demanding and therefore newly valued as men's work.
Brahnam et al. note that, even with this shift, *computer is woman* remained pervasive,
particularly as computing moved into the business realm, which was also "strongly shaped by
gendered expectations and practices" (Brahnam et al., 2011, p. 404).

In the business world female "operators" were distinguished from male "programmers," a
differentiation that implies a separation between body and mind, or the menial and the
intellectual. This binary was prevalent in AI arguments about the nature of intelligence and the
mind/body divide. Here it is apparent that mind/body binaries are also keenly linked to gender
and race binaries that work to construct social difference. The term "operators" became
preferred to differentiate between the machine computer and the human agent (Ceruzzi, 1991, p.
240). However, Hicks' (2010) study of the representation of British women computer operators
in advertising shows that women were historically portrayed as interchangeable, and sometimes
indistinguishable, from the computers they operate, reinforcing the *computer is woman*
metaphor.

AVAs as Women's Work

Zdenek (2007) views the repetition and banality of tasks performed by computers as a
metaphor for women's work. Recent studies of virtual assistants expand the idea of AVAs as
women's work by defining emotional and affective dimensions to the functions AVAs may
perform. Emotional labor has been shown to be part and parcel of "women's work" in the

domestic sphere with women historically managing caregiving, childrearing, and other affective labor activities involved in maintaining domestic social relationships. As women have moved into the workplace, jobs that have been coded as "feminine" (nursing, caregiving, service) tend to retain the same reliance on emotional and affective labor as an invisible component of the job. Gendered emotional labor practices are practices of sexual differentiation that both construct and reinforce gendered beliefs and stereotypes (Hochschild, 1983). Studies of affective labor in service industries demonstrate that women are expected to perform emotionally/affectively in jobs where their male counterparts are not, including putting up with gendered abuse and harassment as part of their affective work (Hughes and Tadic, 1998; Taylor and Tyler, 2000).

Affective agent design is attempting to mediate user frustration or anxiety with the interface or information context (i.e. healthcare, language acquisition, etc.). There are various ways the agent may be programmed to sense and respond to the emotional state of the user. Empathetic agents may recognize emotional expression in the voice, detect facial expressions, or use sensory tools like the IBM "emotion mouse" to detect pulse rate, skin temperature, and general somatic activity (Ark, Dryer, & Lue, 1999). This data is calculated and the agent can react using strategies like active listening and empathy.

As in the examples of women computers, gendered assumptions about women's "natural" affective skills shape the discourse and design of affective virtual agents whether or not they are explicitly represented as women. That is, even AVAs not explicitly represented as women are still discursively constructed as feminine. For example in Brave, Nass, and Hutchinson's (2005) study, they find that both male and female users rated virtual agents exhibiting only empathic emotion as submissive. Empathy is thus linked to submission, a trait negatively and stereotypically applied to women. AVAs functioning as healthcare workers (such as nurses or

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caregivers to the elderly) are often explicitly designed to conform to gendered stereotypes. Noy et al. state in their work with using embodied agents in elderly digital inclusion efforts that "female and male behaviour of an EVA [AVA] should be consistent with gender stereotypes" (2013, p. 145). Similarly, Bickmore et al. discuss designing female nurse characters to "better match the patient demographic and improve acceptability of the VN [Virtual Nurse]" (2009, p. 1270). Other studies simply find that affective responses are more generally acceptable to users (thus more effective) when coming from female embodied agents (Hone, 2006).

Brahnam et al. locate the design of virtual agents as a continuation of the *computer is woman* metaphor, and suggest that the introduction of personified agents simply made feminization of the computer more visible though it had always been there. The metaphor becomes somewhat collapsed in AVAs where the computer program may be explicitly represented as a woman instead of simply relying on the tacit appropriation of the metaphor, and becomes even more salient when the agents are being designed as affective workers assuming caregiving and emotional labor roles. Brahnam et al. persuasively argue that "screen-based metaphors that cloak the interface are unspoken gendered subtexts that have the power to bind or liberate" (2011, p. 402). This stance posits that metaphors structure access to power and action in the world instead of being neutral or harmless rhetorical maneuvers. Laurel (1997) dismisses the consequences that representations may have on real women in the workforce. She frames it as an issue of knowing fact from fiction, arguing that people realize the virtual agent is not a real person, therefore their actions towards the virtual agent are separate from their behavior towards real people (Laurel, 1997, p. 209). However, this viewpoint ignores the symbolic power that media representations have in prescribing social values and power structures. Certainly virtual agents taking on affective work are being culturally coded in gendered ways, whether they are

explicitly represented as women or not.

Gendered Abuse of Agents

Brahnam et al. (2011) assert that feminization of virtual agents has important

consequences including abuse directed at agents and can be devastating to real women by

creating an environment that normalizes gendered violence. They give examples of the abuse of

a virtual agent program "JULIA" and the now-famous "rape in cyberspace" case reported on by

Julian Dibbell (1998). Their examples directly link a culture of harassment online to the status

of women more broadly. Danielle Citron describes cyber-harassment as "a uniquely gendered

phenomenon" (2009, p. 375). Her work provides numerous examples of women being

threatened in online forums or websites with rape and sexual violence—cases that are consistent

with the statistics given by the non-profit Working to Halt Online Abuse that show women

account for 72.5% of individuals reporting cyber harassment (Citron, 2010, p. 32). In 2007

prominent technology blogger Kathy Sierra was the target of sexually violent and extremely

graphic death threats in her technology blog. As a result she canceled several speaking

engagements and stayed off the blogosphere for a period of time out of fear. The threats against

her were gendered in nature and caused much discussion in blogging communities about norms,

rules of engagement, and gender-related harassment in these communities. These examples

demonstrate the real consequences and effects of cyber-harassment and call into question the

continuation and replication of the *computer is woman* metaphor through AVAs, particularly

how the design of virtual women contributes to new forms of justification for the gendered labor

force.

Conclusion

As this chapter demonstrates, anthropomorphized design is not a new strategy in

computing, though it has grown in application and sophistication. As AVAs are becoming

integral as a "user-friendly" interface design across customer service, information retrieval, and

the telecommunications, health care, and education industries, it becomes all the more imperative

to understand the ideological assumptions bound up in these technologies. As I have shown,

researchers have been concerned with gender and race in the design of AVAs, but have not

necessarily made the necessary step towards exposing these technologies as sites of power,

replete with cultural logics and ideologies. My case study of Ms. Dewey is concerned with

exploring the important role that cultural beliefs about race and gender have in technological

design and logic, particularly as they are expressed through anthropomorphic design along the

axes of gender and race. In the next chapter I will introduce my data set and interface analysis as

a method.

CHAPTER 4: DATA AND METHODS

That's interesting, in an anthropological kind of way. Would you care to rephrase the question? -
Ms. Dewey, Microsoft "Ms. Dewey" search engine

The research questions guiding this study ask how the Ms. Dewey search engine is gendered and racialized and, ultimately, how the anthropomorphic design of Ms. Dewey reveals specific assumptions about gender, race, and sexuality in search. Interface analysis provides an opportunity to analyze technological artifacts, examining the complex relationships between technologies and the social contexts through which they are produced and attain meaning. The interface analysis allows me to examine how beliefs about gender, race, and sexuality are embedded in the material and semiotic aspects of the interface. In this chapter I discuss my data set, as well as the parameters and techniques of my interface analysis.

Data Set and Collection

The Ms. Dewey search engine was live from October 2006 to January 2009. From the start of its launch, fans and critics blogged, shared audio and video clips, posted reviews, and commented on forums about the search engine. My data set consists of these fan-archived media, as well as conversations about the search engine in the form of blogs, Internet forums, comments, and reviews spread across the Internet. The user-archived audio and video clips constitute primary source material of the interface, from which I can observe visual features such as design and setting, as well as the Ms. Dewey character's performative responses to particular search terms. The user conversations serve as secondary source material from which I gathered evidence about user-reported searches and scripted Ms. Dewey responses.

The websites in this study were collected using a meta-search engine called DevonAgent on October 12th, 2012. DevonAgent allows the user to provide search terms and customize

parameters of sites to search, then downloads the results and stores them in a database archive. I

set the search parameters to the "deep web" setting, which allows for searching across the search

engines Bing, Exalead, Google, and Yahoo. After experimenting with different search strategies,

I chose to use the inclusive search term "Ms. Dewey", deciding not to limit it further to allow for

as many results in as many contexts as possible. The search term "Ms. Dewey" returned 105

results that I then evaluated individually for inclusion in my data set.

Exclusionary criteria included websites that were topically irrelevant (e.g. Ms. Dewey,

the high school teacher), not in English (a language limitation for me as a researcher), or that

were so sparsely populated that there was nothing to meaningfully analyze. The latter was the

case for several sites that had the word or title, or image caption "Ms. Dewey" appearing

somewhere on the page (or in the html code), but had zero content or relevant context associated

with it. I interpreted these pages as "linkbait"—or, sites that intentionally use interesting, catchy,

or provocative features to draw in users for the purpose of driving up traffic or advertisement

revenue. That being said, most of the exclusions fell into the first category of topically

irrelevant. Through this process of website inspection, I followed any links off these pages to

other relevant pages that might contain Ms. Dewey conversations including other blogs, news

sites, or video sites. Though these often led to webpages I had already captured, some new

material did surface through this process. After this process of inspection, my corpus comprised

85 webpages.

The unit of analysis for this study is the topical content of the webpage in the form of a

post, article, comment, or uploaded media object, generated by a person. More than one

contributor may post on a page, as in a threaded forum or in a comment thread responding to a

video posted by another contributor. In this study, I consider all posts on a webpage to be

contextually related, even if the content of the posts is not contiguous. I captured each webpage in the .pdf format, creating an archived file that preserved the format, images, and presentation as they were published by the author. Media objects such as video and audio were also downloaded separately to facilitate access and provide a backup, archival copy. In total the data set consists of 85 webpages, from which I collected a total of 20 media objects (audio and video files).

Approximately 600 discrete scenes were filmed for the Ms. Dewey character. I analyzed the websites and media artifacts, documenting over 100 of these scripted responses performed by the Ms. Dewey character. I was able to further document 88 accounts of search terms linked with a scripted response. Some of the search terms in the corpus are repeated by users and generate different responses. Conversely, some of Ms. Dewey's responses are repeated and linked to multiple search terms. All of these reponses are found in Appendix 1.

Coding Search Responses

When a search request is entered in Ms. Dewey, two forms of search results are retrieved. On the right side of the screen, a traditional display list of textual, ranked results appears in a semi-transparent box overlaid on top of the background (Figure 3). Only a few results are visible without scrolling due to the limited display space afforded by the results box. The textual search results remain visually peripheral to the Ms. Dewey character who is positioned almost center-screen, taking up over half of the screen space when the textual results box is displayed. The Ms. Dewey character embodies the second form of search results being displayed. When a search query is entered, one of approximately 600 scripted responses plays, creating an embodied search result performance. The visuospatial arrangement of the interface foregrounds Ms. Dewey's embodied search results over the textual results.
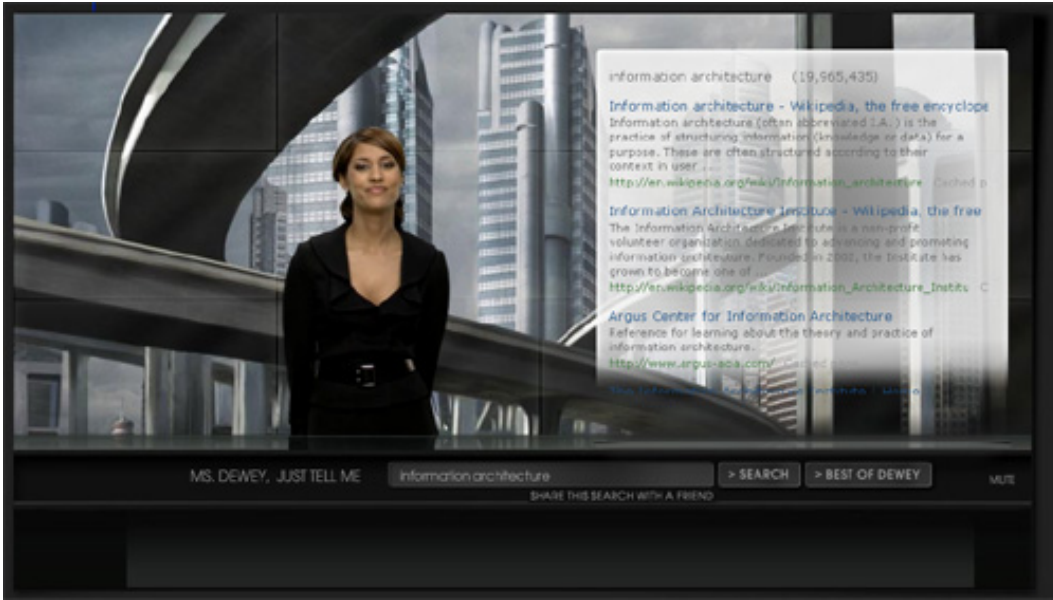
Figure 3: Ms. Dewey with search term entered. Retrieved from: http://findability.org/archives/000157.php

For the purposes of exploring Ms. Dewey's gendered and racialized construction in the search

results, I have coded Ms. Dewey's search responses as falling into the following seven

categories:

1. Overtly sexual in content

2. Sexually suggestive

3. Results that refuse or rebuke sexual advances

4. Disparaging responses

5. Racialized responses

6. Pop culture references

7. Miscellaneous responses

I provide a description of each category with a non-exhaustive listing of illustrative examples in

the sections below.

Overtly Sexual

Several of Ms. Dewey's search results are overtly sexual in terms of her spoken or visual

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content. I characterize overtly sexual search responses as those that involve explicit reference to a sexual act (e.g. sex, kissing) or being naked, performing erotically (e.g. pretending to striptease), or the use of a prop that is itself explicitly sexual (e.g. condoms) in nature. Some examples of this category include:

"I'm writing a book, you know…. 'I kiss therefore I tell'."

"Personally, I like nothing better than to curl up next to a fire with a good book." Pulls out a copy of the Kama Sutra and pretends to read.

"Safety first." Holds a motorcycle helmet and pack of condoms.

"OK, Just this once." She does a brief, seductive dance, lifting her shirt to see her waist, as if to begin a striptease.

"A window into my soul, look into my eyes, feel my pain, see my heart, feel the rain." Said with increasing intensity, builds, and then resumes composure. Looks matter-of-factly into the camera. "Wow. I feel naked."

Sexually Suggestive

I consider sexually suggestive search results to be those that are flirtatious in demeanor and involve innuendo in either the spoken or visual content. Ms. Dewey exhibits flirtatious behavior by tilting her head, smiling, blowing kisses, and being coy with the camera. She also poses suggestively with props that are sexually coded, though not explicitly sexual, including a gun (Figure 4), whip, banana, and motorcycle. Some further examples of search responses in this category include:

"If you can get into your computer, you can do anything you want to me."

"Girls, don't let him fool you, sometimes it IS the size of the gun."

"I'd help you out, but I'm all tied up!" and she turns around and her wrists

are tied with rope.

"I tried that with three close friends once. Let's just say my memoirs would fetch a million."

Figure 4: Ms. Dewey holds an automatic rifle saying, "Girls, don't let him fool you, sometimes it IS the size of the gun."
Retrieved October 24, 2013 from: http://www.hojohnlee.com/weblog/archives/2006/10/29/ms-dewey-stylish-search-with-whips-guns-and-dating-tip

Refusal, or Rebuke, of Undesired Sexual Attention

Though many of Ms. Dewey's responses are sexually flirtatious and suggestive, several are framed in a way that exhibit disgust at an [apparent] sexual advance being made towards the character (presumably by the user). I characterize these responses as refusals, if not outright rebukes, of undesired sexual attention.

"There aren't even farm animals that would do that thing, what makes you think I would?"

"I'm sorry, did you think it was girldoeswhateveryouwant.com?"

"Something tells me this isn't the first time you tried to sway a computer

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screen with this 'vocabulary'. Take off the clothes, yes, all of them. Yes,

your socks too." Presses button. "Now you're screwed."

Disparaging Responses

In contrast to the flirtatious Ms. Dewey that I described above, Ms. Dewey can be quite

abrasive and dismissive of the user in some of the search responses. I characterize disparaging

responses as ad hominem attacks on the user, as well as comments that crack jokes at the user's

expense, or otherwise berate the choice of search terms entered. These range from acerbic to

playful in tone.

"For God's sake search something interesting."

"You know, it's searches like that that just scream 'beat me up and take

my lunch money.'"

"It's not easy to find someone who will love you for you. And I did mean

specifically you."

"Are you trying to drunk dial again?"

"You know when I first saw you? I had a feeling you were going to type

in something like that."

"Ones and zeros, ones and zeros… all the useless coding, underwear on

your head, and you still couldn't create the woman of your dreams. Poor

you." Sarcastic tone.

Racialized Responses

Several of Ms. Dewey's responses involve the character switching away from her default

style of speech and body language, into a stylized persona that is linguistically and physically

(through gestures and posturing) racially coded as a stereotypical performance of urban

Blackness. In this example I transcribed Ms. Dewey's response from the media clip. The words

in brackets reference the partially audible word that is censored by a beep (indicated by "BEEP")

in the search performance.

> Default Dewey voice and stance. "I only have one thing to say to that."
> Switches to racially coded performance: finger wagging, leaning back,
> neck rolling. "No, goldtooth, ghetto-fabulous mutha-[fucker] BEEP steps
> to this piece of [ass] BEEP, just because you pickin' some BEEP video,
> you gotta be out of yo' muthafuckin' mind to think yo' rental bling BEEP,
> and your big booty ass [whore] BEEP crumping to your [bullshit] BEEP
> track is going to turn me out, [shit] BEEP no, uh-uh, you can't [fuck]
> BEEP with me dawg!" Resumes default Dewey posture in a ready-to-
> assist stance, hands folded in front of her.

> *In default Dewey voice.* Ah yes, hip hop. A culture defined as by
> rapping, dj-ing, grafitti and breakdancing. Or, as I like to say," *Switches*
> *to racially coded performace: finger wagging, leaning back, neck*
> *rolling.* "Spittin', scratchin', spraying', and spinnin'." *Resumes default*
> *Dewey posture in a ready-to-assist stance, hands folded in front of her.*

Pop Culture

Ms. Dewey performs a wide variety of pop cultural results. She references plot lines and
taglines from movies, lyrics from songs, musical groups, sports, Microsoft products, and video
games. Ms. Dewey is even self-referential, with a search result for "Janina Gavankar"— the
actress who plays Ms. Dewey.

> "Shine on you crazy diamond." [Pink Floyd]

> Puts the One Ring on and off her finger until she gets bored and throws it
> away. [Lord of the Rings]

> "Of course I took the blue pill..." [The Matrix]

> "Dewey says, never use pirated software… unless it's mapping software.
> I figure pirates know something about that."

Miscellaneous Responses

Lastly, Ms. Dewey has a number of somewhat random, filler results that seem apropos of nothing. I characterize these simply as miscellaneous responses. These responses are generic in content and tone, and highly interchangeable. Examples in this category include:

> "Now that is a fascinating topic. Frankly, I don't think people spend
> enough time talking about it."

> "Been there done that."

> "It's amazing how much money people get paid for doing stupid things."

For the purposes of this project, I focus my analysis on exploring the themes of gender and race present in the first five categories, as they most richly contribute to the gendered and racialized construction of Ms. Dewey. Exploration of the other two categories is a possible future expansion to the analysis completed for this dissertation research.

Interface Analysis Method

"Interface analysis" is an imprecise umbrella term that has different disciplinary understandings, goals, and methodological approaches. For example, human-computer interaction (HCI) tends to be user-focused, evaluating usability goals through quantitative and qualitative measures (John & Kieras, 1996), whereas game studies research often employs more rhetorical types of interface analysis, focusing on narrative and semiotics (Consalvo & Dutton, 2006). My approach to interface analysis calls for a "close reading" of the affordances of the technology, including the material and semiotic aspects of the technological artifact. My close-read (the compoung noun I will use) of the interface draws from a hybrid toolkit of visual studies, critical discourse analysis, and what I am calling "technological pragmatics", or the affordances of the technology.

This approach is critical in orientation, thus focused on understanding, as Hutchby puts it,

"how social processes and the 'properties' of technologies are interrelated and intertwined" (2001, p. 442). My version of interface analysis is influenced by Brock's (2009) Critical Technocultural Discourse Analysis (CTDA), a bifurcated approach that "combines insight into the cultural biases encoded within technologies alongside insights into the technological biases encoded within the culture of the users" (Brock, 2011a, p. 2). In this study I am focusing solely on Brock's articulation of the interface analysis approach, which addresses "how the Internet's form and function visually, symbolically, and interactively mediate discourse" (Brock, 2009, p. 354). CTDA is an ideal methodological approach for interrogating Ms. Dewey, since it advocates interrogating culture and technology simultaneously as intertwined concepts using critical cultural frameworks.

My method of interface analysis positions the material aspects of technology, as well as the interpretive (semiotic) elements, as socially constructed. Hardware, software, content, user practices, and interpretation, are all the outcome of complex social processes shaped by cultural values and ideologies. Scholars of computer-mediated communication define a range of units of analysis, following the scope of their research and their particular disciplinary traditions. As a result, "Internet communication" does not automatically convey a shared understanding of units of analysis. I draw from December's (1996, p. 25) "server-client-content triad" conception of units of computer-mediated communication to further clarify my approach to the Ms. Dewey search engine as an Internet technology.

The server represents the back-end computer and associated software that houses and provides access to information through the Internet. For Ms. Dewey this is the search engine database and computers that store that information. The client is the software that operates on the user's computer to access information from the server via established protocols for data

transfer. In the case of Ms. Dewey, the interface itself acts as a web-based client that runs in a web browser such as Firefox, Internet Explorer, or Safari (not an exhaustive list). Lastly, the content consists of information being exchanged or retrieved between the client and server. For Ms. Dewey this includes search terms entered by users, and the search results that come back. Search results in Ms. Dewey include both the standard (textual) display of ranked results, as well as the scripted (performative) responses of the Ms. Dewey character.

Close Reading

CTDA is influenced by critical discourse analysis (CDA) in its focus on making connections between "texts" to larger social systems of power and domination (Fairclough, 2004; Van Dijk, 1993; Wodak, 2001). The challenge (and beauty) of CDA is the mediation between large social theories, such as gender and race, and the specific, concrete object of analysis, or the "text." Wodak defines text as the "materially durable products of linguistic actions" (2001, p. 66). As this quote suggests, texts have historically been treated as linguistic actions— written language or speech. However, Fairclough (2001) expands this definition to include visual images, media, and non-verbal cues such as body language, arguing that all of these are symbolic processes. Following this expanded definition, the search engine is positioned as a text in this study in the sense that it has been "written" (configured) and may also be "read" (interpreted) by users (Grint and Woolgar, 1997). Like other kinds of texts, the search engine can be subject to a kind of critical discourse analysis, which I describe as a "close reading."

Approaching Ms. Dewey as a textual object allows me to draw strategies from critical discourse analysis in locating the search engine as a site of power where both dominant and resistive discourses about gender, race, and technology circulate and are integral in shaping user

experience with the interface and the search process. Fairclough argues that symbolic processes ("semiosis") occur in social practice in three ways: through social activities (which includes language), representations, and performance (2001, p.123). Ms. Dewey has components of all of these social activities, as represented through the Ms. Dewey character's scripted speech acts, the interplay and linking of search terms and search responses, the representation of the character and background setting, and the identity performance of Ms. Dewey, which is culturally coded in gendered and racialized ways. My "close-read" examines all of these as discursive elements that contribute producing possible interpretations of the technology-text.

Texts can be characterized by "genre," or the conventions, norms, and practices associated with particular activities. Genres function as expressions of cultural logic that can be analyzed in terms of the propositions and assumptions that make up their schema. Ms. Dewey is a search engine, which I characterize as a genre of computer-mediated communication. As such, the genre "search engine" encompasses normative practices for design, conventions for displaying results, and sets of user expectations. These features act as affordances that constrain and shape user expectations and interpretations of the website. As a part of my close-read, my analysis addresses the ways in which Ms. Dewey both conforms to, and changes, the search engine genre in terms of design, interaction, and by virtue of these, user expectations.

A key aspect of close reading the interface is the examination of the affordances of the interface. Affordances may be part of the material aspects of the technology (e.g. Internet infrastructure), or could be designed aspects (e.g. limiting Ms. Dewey's scripted responses to 600 clips). Hutchby argues that affordances constrain the writing and reading of texts to a range of possible interpretations, allowing researchers to empirically analyze constraints and effects in different technological formations (2001, p. 447). This suggests that while there may be a range

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of interpretations of the Ms. Dewey search engine, this range is not limitless. Hutchby (2001)

notes that "writers" may try to constrain possible interpretations, and "readers," in turn, may

produce interpretations that are unexpected. Still, similar to discursive subject positions and

reading positions, technology-texts are often "authored" with a preferred interpretation and ideal

reader in mind. Consalvo and Dutton echo this sentiment arguing that interface analysis is

effectually about identifying the "information and choices that are offered to the player, as well

as the information and choices that are withheld" (2006, para. 17).

<u>Analysis</u>

My analysis occurs in two parts, which constitute the next two chapters. My first close

reading will analyze the semiotic aspects of the interface. This includes the aesthetics of the Ms.

Dewey interface in terms of the web page design and the visual elements of the interface. Since

Ms. Dewey is a search engine, we are required to read the interface in terms of the design

conventions of the information search genre. I examine the affordances of the minimalist design

of Google, which acts as an exemplar for the information search genre. I identify the cultural

affordances of this design in terms of shaping the user expectations of search. I then perform a

close reading of the design and imagery present in the Ms. Dewey interface, also identifying the

cultural affordances of this design strategy.

As the second part of my analysis, I analyze the material aspects of the interface. For

this, I perform a close reading of the compiled search terms and embodied search responses. The

search terms and responses are considered material aspects of the technology since they are

database-driven pairings. The search terms and search results create a discursive interaction

between the user and the technology, making this ideal to explore through critical discourse

analysis techniques. I limit my analysis to the thematic elements of gender and race, tracing

where and how they are featured explicitly or otherwise performed by the character. Again, I articulate the affordances of the particular gendered and racialized performances for the shaping the search experience.

CHAPTER 5: CLOSE READING OF VISUAL DESIGN AND AESTHETICS

She stands at a long black desk, a glass wall behind her displaying a futuristic city-scape. She wears a fetching black blouse, a big belt, her hair tied back and parted sensibly to the side. Her eyes, like her name, dewy. - Sean Cole, NPR Marketplace on Microsoft's "Ms. Dewey"

In this chapter I perform a close-read of search design of Ms. Dewey in comparison to the minimalist aesthetics of the information search genre as exemplified in Google's interface design. Thorlacius (2007, p. 65) claims that the role of aesthetics in web design is to support the "sender image," or the corporate entity behind the interface (Microsoft), the content and function of the site, the web site genre (information search), and the target audience. Thus, the close-read of Ms. Dewey's design aesthetics requires that I situate Ms. Dewey in terms of Microsoft's history of developing search technologies, their corporate culture, the search industry at the time, and Ms. Dewey as a hybrid viral marketing campaign. The design of Ms. Dewey is in service to all of these aspects. I introduce the elements of information search as a genre with aesthetic conventions rooted in modernist minimalism and read Ms. Dewey's design against these practices. Ms. Dewey departs from the minimalist design, using anthropomorphization as a conduit for "experiential" search, a term that I explore in relation to this gendered and racialized representation of search. I explore the visual imagery of the interface along with its affordances and implications for search.

The Competitive Landscape of Search

On May 26, 1995 Bill Gates circulated a memo to all of the executive Microsoft staff, prophetically titled "The Internet Tidal Wave." In this memo Gates calls the Internet "the most important single development to come along since the IBM PC was introduced in 1981." He assigns the Internet "the highest level of importance" for every aspect of the company's business. The memo goes on to outline what Gates sees as the crucial features of the Internet: the

affordances of TCP/IP protocols and HTML; the economic model of the Internet based on communication lines rather than usage; and the vast potential of the Internet as a place to publish content. Gates names search engines as one of seven "critical steps" for Microsoft to focus on, calling out Netscape's Navigator browser as "a new competitor 'born' on the Internet" (Gates, 1995). At this time Netscape dominated the nascent search market with 70% of the usage share directed at search tools in their browser. Gates, keenly aware of this fact, encouraged Microsoft employees to address search aggressively, saying about Netscape, "we have to match and beat their offerings" (Gates, 1995). Gates was emphatic about the need to strategically bring together Microsoft products such as Office, MediaView, Help, Cairo, and The Microsoft Network (MSN) into a single scalable database that could handle large numbers of queries.

The goals Gates laid out in this memo demonstrate Microsoft's awareness of and fears about the shifting landscape of the Internet, the growing importance of search as a market, and the struggles of defining (and protecting) their brand image in an increasingly competitive marketplace. On August 24, 1995, only three months after "The Internet Tidal Wave" memo was circulated, MSN was launched as an Internet portal and service provider positioned as a direct competitor to America Online (AOL). Finally, in 1998, Microsoft released their own search engine "MSN Search," which comprised a search engine, index, and a web-crawler. Initially MSN Search used search results from another company (Inktomi), but then gradually was updated to provide search results from homegrown Microsoft technology. The interface for MSN Search was typical of search engines of that time-period, featuring a small box for entering search terms, index terms, tabs for other Microsoft services (such as email), and directories (Figure 5).
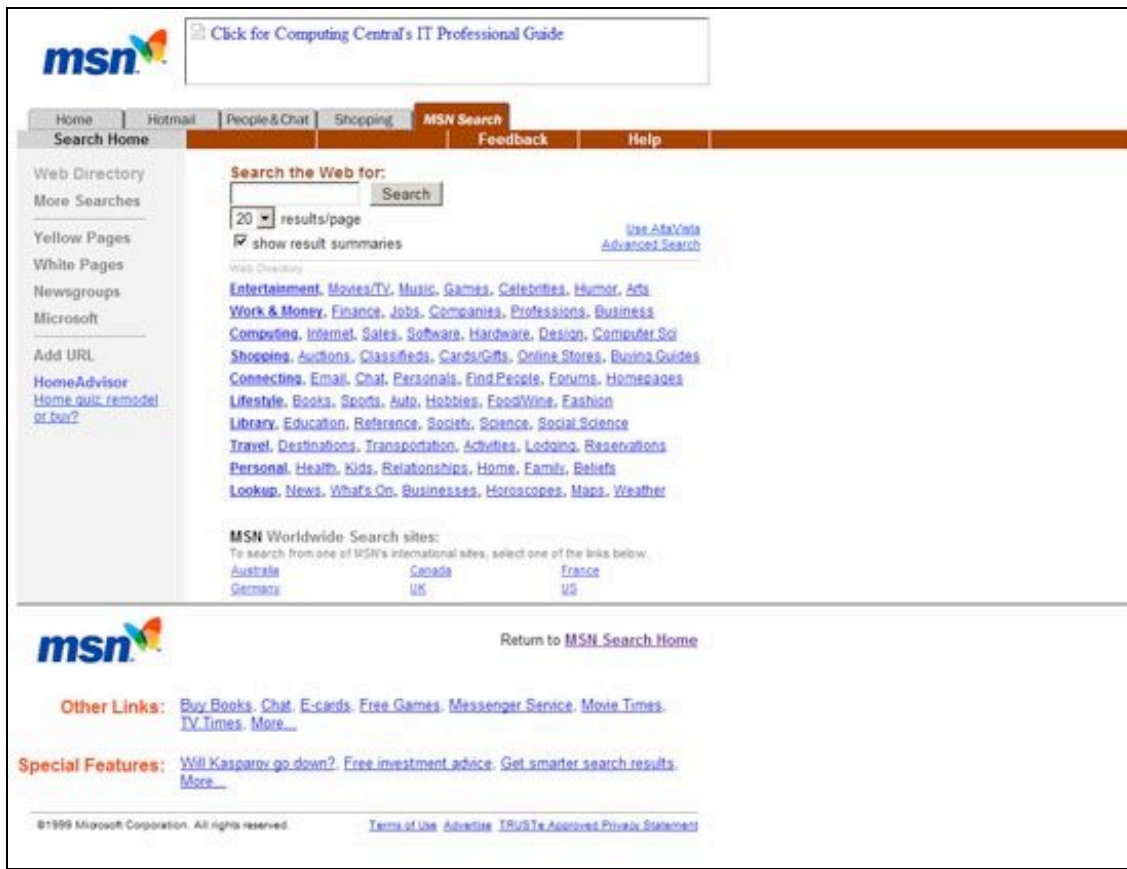
Figure 5: MSN Search, 1999. Retrieved on July 30th, 2013 from: http://sixrevisions.com/web_design/popular-search-engines-in-the-90s-then-and-now/

At the same moment in time that MSN Search was being released, a game-changing company called "Google" was releasing their own search engine based on the "PageRank" technology that founders Larry Page and Sergey Brin had been developing since 1996. This time period, between 1998 and 2004 (when Google began public trading), marks a highly competitive search landscape with popular search engines like Yahoo, MSN, and Lycos scrambling to innovate and compete for market share. Google's minimalist interface and algorithmic ranking system made the search engine a popular alternative to the text-heavy, directory-driven search engines on the market. Google grew rapidly, becoming the market leader and gaining the near-monopoly status that they still hold in the search market. According to *Business Week* (2005) Google's share of searches in the United States was 52% in June 2005 as compared to 45% only

a year earlier when their stock went public. By contrast, Yahoo's share of searches dropped to

25% and Microsoft's MSN dropped to 10% in 2005. When Time Warner renewed their three-

year partnership with Google in 2005 instead of partnering with Microsoft, as Microsoft

executives had publicly anticipated, many critics saw this move as Google firmly supplanting its

competitors and cementing itself as the leader in innovative search technology (Hansell, 2005).

It was in this competitive climate of 2005 that Microsoft reorganized their services under a new

brand name, "Windows Live." Windows Live comprised a makeover of Microsoft's suite of

services, among them MSN Search which became the new "Windows Live Search" (Figure 6).

Industry experts and technology critics reviewed Windows Live Search positively, focusing on

the potential of the new design to place Microsoft on "an even technology footing"

(Wakabayashi, 2007) with rival search engines.
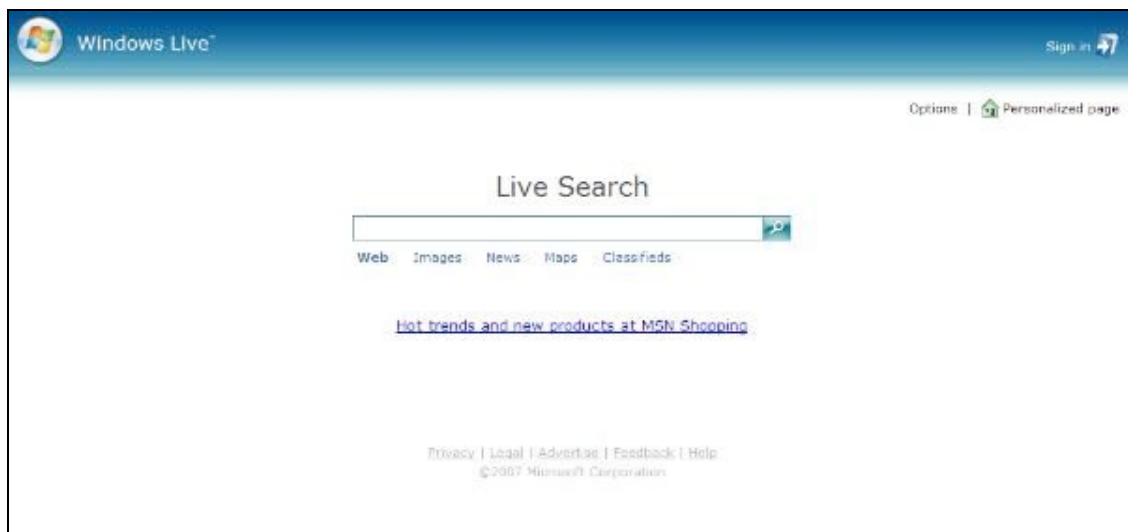
Figure 6: Windows Live Search, 2007. Retrieved on July 31, 2013 from:
http://websearch.about.com/od/bestsitesimagegalleries/ig/Best-Web-Sites-April-2007/Live-Search.htm

The Windows Live Search interface was heavily influenced by Google's single-search

box and minimalist page design. Dennis O'Reilly writing for PC World in 2006 comparatively

dismissed Google's "stark design" as boring, praising features in Windows Live Search such as "'infinite scroll' of results, scalable image thumbnails, and easy search customization" as design choices that "could very well make your everyday searching more pleasurable." On the other hand, O'Reilly also described the clumsiness of some aspects of the interface, such as the "herky-jerky" scrolling and jumping through the hoops of the search macro feature. Even though the Windows Live Search design was more comparable with Google, Microsoft still struggled to compete with the latter's relentless domination of the search market. Though Nielsen's NetRatings showed Microsoft's search share rising in 2007 by nearly 3% over their 2005 ratings, Google maintained an iron grip on the market with a 53.6% share (D. Sullivan, 2007).

Corporate Image and Rebranding

One possible source of struggle for Microsoft in establishing itself in the search market at this time may not have been wholly technological in nature. Besides competing with Google over search engine design and performance, Microsoft stood in the shadow of Google's "cool" corporate image. Starting in 1990 Microsoft had been battling a string of highly publicized antitrust lawsuits that lasted well into the mid-2000s. In 1998 the United States Department of Justice (DOJ), along with twenty states, initiated a lawsuit against the corporation accusing them of monopolistic practices related to the bundling of their Internet Explorer web browser into the Microsoft Windows operating system (*United States v. Microsoft Corporation*, 2001). The DOJ and Microsoft agreed on a proposed settlement in November 2001, and in November 2002 the settlement was approved and Microsoft was ordered to comply with a five-year consent decree.

> During this process Microsoft was in the headlines frequently, often cast
> as the evil corporate monopoly representing the old guard of Silicon
> Valley technology companies that dragged its feet and was more focused
> on earnings than creative tinkering. This is not to say that Microsoft did

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not remain a powerful corporate entity—it was then and is still now the largest software and programming company in the world—however their public image was negatively impacted by their legal battles. Technology critics and industry insiders complained about the company in terms of brand and corporate image:

> Microsoft's corporate-centric, bureaucratic and success-oriented culture is off-putting to many in the software-development community, especially much-coveted open-source code crunchers. (Doyle, 2004)

> Microsoft has become a clumsy, uncompetitive innovator. Its products are lampooned, often unfairly but sometimes with good reason. Its image has never recovered from the antitrust prosecution of the 1990s. (Brass, 2010)

At the same time as Microsoft was litigating the antitrust lawsuits, Google was being praised as "innovative, egalitarian, playful, trustworthy" (Fleischer, 2005), a company to emulate in terms of both corporate culture and product.

For example, in 2003 the business and design magazine *Fast Company* lauded Google as being

> among the best-run companies in the technology sector. At a moment when much of business has resigned itself to the pursuit of sameness and safety, Google proposes an almost joyous antidote to mediocrity, a model for smart innovation in challenging times. (Fast Company Staff, 2003)

John Battelle's (2006) account of the rise of Google reveals that this (anti-)corporate culture was intentionally cultivated through the development of the "don't be evil" motto. The press and technology industry latched onto the company-with-a-heart-of-gold image implicit in the motto, with the result that Google was able to attract increased business from advertisers and, in turn, generate more success and good public relations.

Given Microsoft's corporate image struggles in light of the antitrust litigation, it is no surprise that, in 2006, they launched a $500 million dollar multimedia marketing campaign that targeted television, print and Internet advertising (Lohr, 2006). Jeremy Reimer of *Ars Technica* described the campaign as an attempt to "change the view that Microsoft is simply a 'huge American company' by highlighting the work it does around the world promoting education and economic development" (Reimer, 2006). In part meant to boost competition with software rival IBM in the business market, the campaign touched all product areas including desktop computing, gaming, software, and search. A press release that came to the email of the Search Engine Watch Forums Editor described the advertising efforts associated with the Live Search product in these words:

> We're starting with an introductory phase to build awareness of our new
> Live Search service. We then quickly move into a direct response phase
> where we drive people into the Live Search service itself to experience
> all of the great innovations and features we have spent so much effort
> building. The campaign starts with a bang on Oct 27 (look for it in your
> newspaper, MSN homepage, Hotmail, and Microsoft.com), which will
> include online advertising through the end of March, and sustained
> strategic online programs through the end of the year. (AussieWebmaster
> cited in Schwartz, 2006)

Advertising agency McCann Erickson collaborated with the digital content marketing firm Evolution Bureau San Francisco on the online advertising for Live Search referenced in this press release. The "introductory phase to build awareness" for Live Search had a secret weapon: an edgy and tongue-in-cheek viral marketing campaign featuring a sexy librarian called "Ms.

Dewey" to "sex up search" (Navidad, 2006). Ms. Dewey was essentially a new Flash-based

interface laid over the Windows Live Search product.[4] The interface marked a departure from

previous minimalist interface styles, merging search with post-modern digital media aesthetics

and interactive functionality (Figure 7). Ms. Dewey was not overtly branded and advertised as a

Microsoft product, instead it was designed to spread virally through user's social networks.
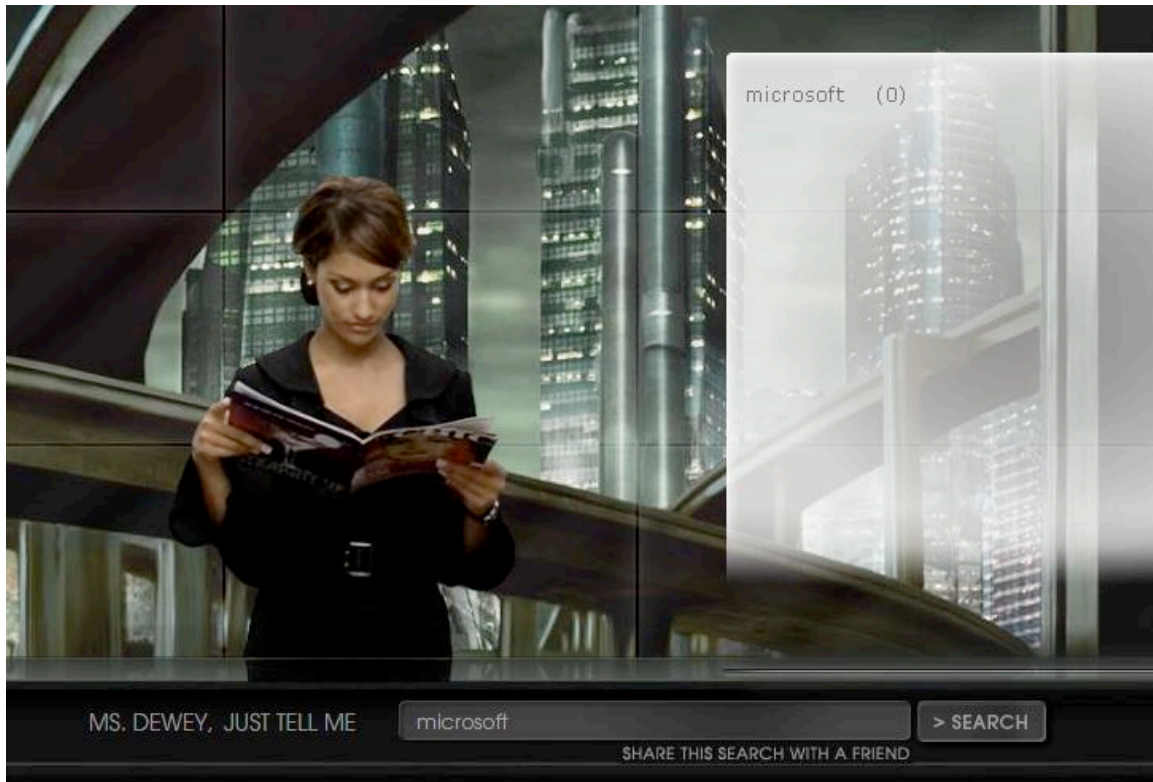
Figure 7: Ms. Dewey Interface for Windows Live Search, 2006. Retrieved on July 31, 2013 from
http://www.disambiguity.com/ms-dewey-lessons-in-how-not-to-design-a-search-engine-brought-to-you-by-microsoft/

Viral Marketing and Ms. Dewey

"Viral marketing" is the term for marketing tactics that rely on the pre-existing social

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[4] Flash is a multimedia and software platform frequently used to embed and stream video and audio and interactive
media content to web sites. Formerly a Macromedia product, currently Flash is owned, developed, and distributed
by Adobe.

networks of consumers to spread buzz, information, and brand-awareness from person to person. Viral marketing draws from the age-old advertising strategy of spreading information by word-of-mouth. Advertising in the age of the Internet and social media has modified (and scaled up) this concept using digital technologies as the mode and mechanism for sharing information quickly and prolifically through digital platforms. Wilson (2000) defines six principles of effective viral marketing strategies as: taking advantage of others' resources; giving away valuable products or services; providing for effortless transfer to others; scaling easily from small to very large; exploiting common motivations and behaviors; and utilizing existing communication networks. So called because of the self-replicating nature of the process, viral marketing can take the form of email, videos, images, or Flash based interactive games. Viral marketing differs from traditional advertising in that there is no paid media involved.

Coined in 1996 by Steve Jurvetson and Tim Draper, of the venture capital firm Draper Fisher Jurvetson (DFJ), the term was used to describe the DFJ marketing strategy for the free email service Hotmail which involved appending a tag line to messages originating from Hotmail accounts that read "Get your private, free e-mail from Hotmail at http://www.hotmail.com" (Jurvetson as cited in Porter & Golan, 2006). After the success of the Hotmail advertising, other companies began to experiment with Internet-based viral campaigns. Ferguson (2008) points to Burger King's Subservient Chicken campaign that launched in April 2004 as an example of the new wave of digital viral campaigns that rely on broadband access to spread videos and blogs through social media networks. Visitors to the www.subservientchicken.com site found an actor dressed in a chicken suit and garter belt that

would (seemingly) respond to any command the user typed in.[5] Like Ms. Dewey, this site

actually drew from prerecorded footage, though the aesthetic was designed to represent a

webcam in a living room. Subservient Chicken was not a search technology, but the aesthetic

parallels and promotional goals of raising Microsoft's brand awareness are relevant to Ms.

Dewey.

Information Search Genre

I have introduced the context through which Microsoft developed Ms. Dewey, exploring

how Microsoft changed their search interface design in accordance with the shifting search

landscape as well as their brand image and marketing needs. Microsoft, like other search

companies, took the aesthetic cues of the search industry leader, Google, in the search engine

design predating Ms. Dewey. Google's popularity in the search market industry as a near

monopoly for over ten years has driven conventions about information search as a genre of

Internet technology and web design. As such, I use Google's interface as an exemplar for the

information search genre.

The information search genre, as exemplified by Google, comprises a modernist, minimal

aesthetic (Figure 8). A single search box, simple navigational tools, and an abundance of white

space greet the user upon arriving to Google's homepage. As Thorlacious (2007) notes,

"Google's target audience does not visit this Web site to be aesthetically stimulated, which is

entirely consistent with Google's intentions" (p. 70). When a search term is entered, the results

display in a textual format, algorithmically ranked for relevancy (Figure 9). A simple menu

appears at the top offering choices to toggle between for different kinds of results including

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[5] As of August 4, 2013, Burger King's Subservient Chicken is archived at
http://www.subservientchicken.com/pre_bk_skinned.swf.

image results, maps, or shopping. There are no advertisements associated with this term, though when there are they appear in the blank white space on the right hand side of the screen. There isn't a color palette so much as an absence of color on the screen. The text stands out against the white space, drawing the eye.
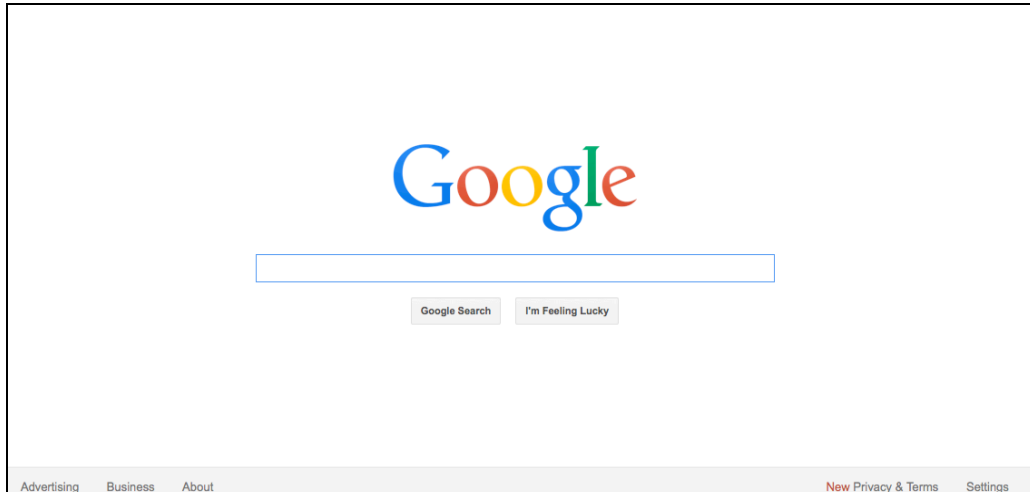
Figure 8: Screenshot of Google's (www.google.com) interface October, 2013.
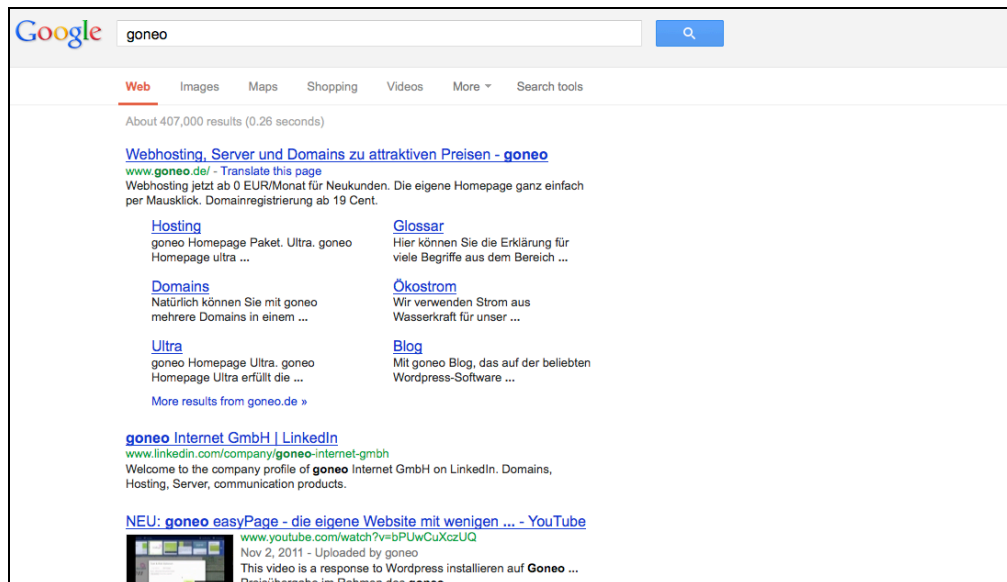
Figure 9: Google Interface, search term "goneo". Source: Screenshot August, 2013.

Modernism in Web Design

The modernist design tradition remains "one of the dominant discourses within taste in our present times" (Thoracious, 2007, p. 71), and drives a great deal of web design conventions (e.g. Nielsen, 1993). Modernist design stems from the early 20th century functionalist movements in architecture and design. Modernism, like modernity, is gendered male (Wolff, 2000, p. 37). Leslie and Reimer describe how the characteristics of modernism are constructed "in opposition to sets of binary 'Others'- ornamentation, decoration, craft, and ephemerality- which typically are further mapped onto a masculine/feminine distinction" (2003, p. 295). For example, achromatic surfaces, neutral colors, and industrial materials are coded as masculine and are thus deemed scientific, objective, and unadorned. (Or, as Braham (1999) observes, perhaps they are deemed scientific and objective because they are masculine.) The modernist mottos "form follows function,"[6] "less is more,"[7] and "truth to materials" exemplify these values. These mottos have been widely appropriated by web designers and information architects. Modernism is positioned as value-free, fulfilling a "natural" narrative of progress defined by its scientific, technological status. The binary that modernism is oppositional to them casts ornamentation, embellishment, and applied colors as feminine qualities replete with irrationality, subjectivity, and intuition (Braham, 1999, p. 13). These qualities are aligned with artificiality (culture), bound up in "taste" instead of the ostensibly "naturally" occurring scientific "truth" of modern aesthetics.

In the same way, modernism is also racialized, encoding whiteness. Whiteness

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[6] Coined by Sullivan, Louis H. (March, 1896) "The Tall Office Building Artistically Considered." *Lippincott's Magazine*. Retrieved from: http://ocw.mit.edu/courses/civil-and-environmental-engineering/1-012-introduction-to-civil-engineering-design-spring-2002/readings/the-tall-office-building-artistically-considered/
[7] Coined by modernist architect Mies van der Rohe.

encompasses a set of ideologies, beliefs, and structures that position those who have white

privilege as superior, rational, and innately deserving of power (Dyer, 1997). Like masculinity,

whiteness functions hegemonically as a ubiquitous, invisible status quo; the "norm" that

positions anything or anyone outside of whiteness as "Other," and therefore strange. The

gendered binary that Leslie and Reimer (2003) describe maps neatly onto the racialized binary in

opposition to which modernism positions itself. Thus whiteness is also manifest in the values of

functionality and simplicity, rendering ornamentation, a vibrant color palette, and flashy imagery

as "exotic" and Other.

Le Corbusier, a pioneer of modern architecture demonstrates modernist articulations of

white ideology through his description of the purity of white paint:

> the white of whitewash is absolute, everything stands out from it and is
> recorded absolutely, black on white; it is honest and dependable. Put on
> it anything dishonest or in bad taste- it hits you in the eye. It is rather like
> an X-ray of beauty. It is a Court of Assize in permanent session. It is the
> eye of truth. (1987 [1925], p. 190)

Le Corbusier links whiteness with truth, honesty, and dependability- all values based on broader

Western conceptions of the superiority and rationality of whiteness.

Bourdieu (1984) argues that cultures of taste are a form of cultural hegemony, built in

opposition to other classes with the purpose of creating/maintaining social distance. The

linguistic device of using terms like "simple" and "clean" to describe minimalist design, can be

thus read as racially coded terms that position white, middle-class aesthetic values as normative

and neutral. Similarly, drawing from Bourdieu's work, boyd (2012) argues that taste and

aesthetics disguise racial logics in web design. In her research on the social media sites

Facebook and MySpace, she finds that teens used similarly racialized language to describe the

different sites' aesthetic features and users who are associated with the sites. In short, modernist aesthetics embody values aligned with masculinity and whiteness, elements that I have previously identified as key components of the technocultural matrix.

Affordances of Minimalism in Google

The modernist design of Google can be read as an affordance that frames the search process as informational, unbiased, and scientific. The simple, sparse design works to obscure the complexity of the interface, making the result appear purely scientific and data-driven. This is an image Google actively cultivates. The company has explicitly claimed its results to be neutral, standing behind the authority of its "objective" algorithmic ranking system that mathematically traces links among pages, termed "voting" (Brin and Page, 1998). The notion that sites are voted on according to seemingly "scientific" (though completely hidden) criteria, reinforces the myth of digital democracy that is woven into broader beliefs about participation online and the Internet as an equalizing force (Hindman, 2009). The insistence of the scientific "truth" of algorithmic search has encouraged users to view search as an objective and neutral experience.

Pew Research Center's data indicates that users overwhelmingly (73%) feel that the information gathered on search engines is both accurate and trustworthy (Purcell et al., 2012). This data also shows that a majority of users (66%) feel that search engines are a fair and unbiased source of information (Purcell et al., 2012). Scholars such as Siva Vaidhyanathan (2011) note that users' trust in the search results extends to viewing Google search as a kind of public good rather than directly serving corporate interests. Certainly the "don't be evil" slogan reinforces this idea overtly.

The reality is that search engines, as complicated socio-technical systems, are far from

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the objective, neutral technologies that users may believe them to be. Vaidhyanathan (2011) points out that the process of information provision through search engines is a social, economic, and human project. Rather than serving as a public good, studies reveal that search engines give prominence to popular, wealthy, and powerful sites through a complex interplay of technical mechanisms (e.g. crawling, indexing, and ranking algorithms), as well as through human-mediation, and economic capital (e.g. advertising optimization) (Introna and Nissenbaum, 2000). Rather than providing neutral results, Google has been shown to manipulate their search results to direct users primarily or exclusively towards their own services (e.g. YouTube, Google Maps, Google Images) over competitor platforms (Inside Google, 2010). Further, recent work by Noble (2012) and L. Sweeney (2013) demonstrates that capital interests drive racist and sexist bias in search results and linked advertising, privileging White, masculine ideologies and desires while perpetuating derogatory stereotypes about people of color and women.

These studies demonstrate that even non-anthropomorphized search engines are ideologically gendered and racialized through their linkage of search terms to particular results, presentation and ranking of search results, and advertising practices. However the aesthetic conventions of modernist design effectively obscure the intermediation of cultural values in search results, leveraging the "scientific" presentation of results in minimalistic interfaces. The Google search experience is purposefully designed to seem scientific and objective, and thus invisible, to the user. The majority of searching (80%) is informational (Jansen, Booth, & Spink, 2007), and as such, users do not expect to be surprised or confronted by their search experience. Instead they approach information search expecting neutral, accurate, trustworthy, authoritative, and objective information. Minimalism in information search design functions as an affordance that shapes and reinforces these expectations.

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Ms. Dewey Interface Design

The Ms. Dewey search interface deviates from the minimalist design conventions of the information search genre. Instead of stark white-space, the interface depicts an urban business setting with the Ms. Dewey character standing behind a black, reflective desk poised and ready to assist users with their search queries (Figure 10). The background scene is constructed as a view through the office windows of the surrounding cityscape. This is sometimes depicted at night, at other times during the day. Below the desk, a single search box provides an imperative prompt "Ms. Dewey, Tell Me How." The search box was changed over time to reword the prompt as "Ms. Dewey, Just Tell Me," along with an additional option besides "search" called "Best of Dewey" that calls up selected popular (often funny or provocative) scripted results. This later version of the interface also included an option below the search bar to "Share this SEARCH with a FRIEND," a feature that supports the viral sharing of the interface as part of the marketing imperative. Both interface designs included a "mute" option that turned the sound of Ms. Dewey's dialogue off.[8]

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[8] Figure 10 is a slightly cropped image; the mute button is located in the cropped-out area. Other interface shots confirm the mute button in this version of the interface, however. This image was selected to demonstrate the nighttime scene, as well as to show the screen before textual results are displayed.

Ms. Dewey is represented as a woman of color, albeit of ambiguous ethnic and racial

identity. Hair pulled back in a bun, she is dressed in a professional suit that is also tight fitting

and low-cut. The name "Ms. Dewey" suggests a playful pun on Melvil Dewey, creator of the

Dewey Decimal system of classification for library science. Ms. Dewey can be "read" as a

librarian-like figure that stands ready to help the user find information and navigate through the

Internet, just as a librarian might do in a library setting. Despite being coded as a librarian

through her name, Ms. Dewey's appearance does not otherwise conform to the traditional

librarian stereotype of the frumpy, old-maid shushing patrons and gleefully doling out library

fines (Adams, 2000). Instead, Ms. Dewey is young, sexy and modern. Not quite the party-girl

stereotype (Radford and Radford, 2003) made popular by Parker Posey in the movie *Party Girl*

(1995), or the more recent emergence of the "hipster" librarian identity (Jesella, 2007), Ms.

Dewey more closely resembles a corporate professional in her black business attire. Her chignon

may be the last ironic vestige of the buttoned up old-maid librarian, though this hairstyle could

also be construed as a conservative hairstyle adopted by women in the business world.

The Ms. Dewey character is portrayed in an interior office space with high-rise buildings

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in the modern architectural style visible through the window behind her. The background scene creates what looks to be a business district, or city center, with a prominent concrete and steel transportation infrastructure running through it. The interior setting features only a black, reflective desk that Ms. Dewey stands behind. The colors and textures are consistent with the subdued, modernist architecture palette of black, grey, concrete, and brushed metal. The background scene shifts, sometimes depicting the city at night, and at other times during the day. Whether day or night, the color palette remains neutral, emphasizing gray and black colors.

Visual Themes in the Ms. Dewey Interface

Ms. Dewey has a rich palette of visual imagery. The close reading technique requires a contextualization of the imagery of the interface and an examination of the themes being leveraged to create the "experience" of Ms. Dewey.

Modern architectural elements and design features overwhelm both the interior office space and the exterior cityscape that form the visual setting of the interface. Modernism refers to a set of cultural practices and their associated ideologies and institutions, while modernity denotes a "socio-historical moment" defined by the economic, technological, sociological and experiential consequences of the rise of Western industrial capitalism (Wolff, 2000, p. 36). Barker (2005, p. 444) describes modernity as marked by urbanization, rationalization, institutionalization, and forms of surveillance. Modern architecture and aesthetics are a result and reflection of the ideologies of modernity. As I described in the previous section, modern architecture is characterized by minimalism, strong horizontal and vertical lines, a neutral color palette, use of industrial produced materials (steel, concrete, etc.), and the exposure of infrastructural features. The cityscape depicted in the interface, the exposed transportation infrastructure, the neutral color scheme, and the industrial materials used throughout the scene

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are in alignment with the tradition of architectural modernism. I have already described the ways in which modernism is gendered and racialized, creating a normative space that is coded through both masculinity and whiteness. Additionally, modernism mobilizes a narrative of Western technological progress.

Kaika & Swyngedouw describe urban architecture and networks as "materially and culturally supporting and enacting an ideology of progress" (2000, p. 122). Progress, a powerful narrative in the Western mythos, is often formulated as moving in a linear, upward trajectory towards a goal of maximum social and economic efficiency, "dragging human society along in its train" (Pacey, 1983, p. 24). The narrative of progress, through its techno-utopian formations, is linked to white ideologies of control and power, and "the Western tendency to universalize its own perspective" (Dinerstein, 2006 p. 571). Dinerstein includes whiteness as a key feature of the technocultural matrix, noting that "technology as an abstract concept functions as a white mythology" (Dinerstein, 2006, p. 570). Part of the utopian vision of progress is its post-racial imagination that envisions a future free of hierarchy, social injustice, poverty and war, usually as a result of technological interventions. Technology is key in this formulation, often centered as the key to unlocking this man-utopia. In practice, this hope has not been borne out. Instead, "over two centuries, technology has piggybacked onto social progress by creating the rush of change without social improvement" (Dinerstein, 2006, p. 572). Yet the ideology of progress remains resilient, despite the social inequities perpetuated in the progressive technological regime.

The use of modernist features in the interface stands in contrast to the cultural coding of Ms. Dewey as a librarian. Though her name may cleverly nod toward librarianship, Ms. Dewey is not portrayed in a library-like setting. The traditional library was ornate and monumental, a

secular cathedral of knowledge and moral uplift (Augst, 2007). The library in popular culture

still retains nostalgic trappings of books, reading tables, and sacral architecture from the

Enlightenment era. However, the modernism present in the Ms. Dewey interface design is

oppositional to these features, emphasizing the corporate and technological power associated

with modernity (Harvey, 1987). Similarly, Ms. Dewey is represented as a transformed librarian

who has shed her frumpy clothes in favor of a power-suit, a symbolic shedding of her position as

a public servant surrounded by books (low-tech) in favor of corporatization and, presumably, the

(high-tech) digital technology of "the future." This marks a clear shift away from a low status,

underpaid, and feminized profession in favor of prestigious, high-salary work associated with

masculinity, male privilege, and technology.

Gender and Race as Affordances of the Interface

I have discussed how modernism is coded as both masculine and white, reinforcing the

inter-related features of Dinerstein's technocultural matrix (modernity, whiteness, masculinity,

the future, religion, progress). At the visual center of this matrix stands the Ms. Dewey

character. Placing a brown woman at the center of this interface should be read as consistent

with the symbolic technocultural logic we have been considering, instead of aberrant to it.

Further, Ms. Dewey's design as a brown woman can be read as an affordance that facilitates

accessibility to the interface through a technique of manageability.

Ms. Dewey's position at the center of the interface has her visually surrounded by the

symbolic apparatus of white, Western, masculine power as evidenced in the urban scene, the

modernist architecture, and the corporatized setting. Ostensibly this position in the interface

places Ms. Dewey in the seat of authority. She is, after all, the embodiment of search, thus

performing information retrieval as if she is accessing her own memory. On the surface, this

seems like a position of empowerment. Certainly this representation could be thought of as a

possibility for advancing counter-narratives about technology that position women and people of

color as inherently technological instead of at the margins. Taking the lens of affordances,

however, requires thinking about what the interface was designed for, and how Ms. Dewey's

representation furthers that goal.

Winner (1996) notes that a common strategy to promote usability of technology involves

obscuring complexity in design:

> A commonly chosen design strategy was to conceal the complexity of
> devices, systems, and social arrangements and to make them appear
> simple and manageable. Thus, for example, streamlining and other
> varieties of shiny metal styling were adopted to complex, technical
> mechanisms within soothing, attractive surfaces. (Winner, 1996, p. 68).

Here, the Ms. Dewey character is purposefully designed as the "soothing, attractive" surface that

obscures the complexity of the search engine. While Google conceals complexity and promotes

manageability through minimal features and an appeal to science, the Ms. Dewey interface

achieves the same goals by placing a brown woman at the center of a space otherwise coded by

whiteness and masculinity. This positioning creates a panoptic level of surveillance on Ms.

Dewey: not only is she under telematic surveillance by the user, but also from the glass windows

behind her, which reinforce the effect. This invokes the position of brown women's bodies

which have historically served as a contested space and site of domination. Here we see the

same social concerns and desires expressed through narratives of technology, as well as through

the technology itself. Ms. Deweyi s positioned visually and symbolically in the interface is ways

consistent with white Western culture's desire to control brown bodies using technology as an

extension of domination. Gender and race in the design of the Ms. Dewey character function as

affordances that shape interaction with the interface in terms of (a familar) manageability.

<u>Conclusion</u>

The Ms. Dewey interface is visually encoded with the technocultural characteristics that posit the setting as an ideological space of white, Western masculinity and power. Positioning Ms. Dewey at the center of the interface is a continuation, and alignment, of the technocultural logic of the scene, rather than a aberration in it. Ms. Dewey's representation as a brown woman at the center of this scene constitutes a technique of manageability that facilitates user access to the interface. This constructs the Ms. Dewey character as a site of domination and surveillance, rather than a site of authority and power. In this way, gender and race serve as affordances that shape user interaction with the interface. In the next chapter, I further explore Ms. Dewey as an "experiential" interface, examining how gender and race shape Ms. Dewey's performance of search results and structure discursive and ideological interactions with users.

CHAPTER 6: CLOSE READING OF SEARCH RESULTS

Another area that we've been experimenting with is sites where exposure and experience are the very same thing. Now, Ms. Dewey is an interesting example of this, because it's an experiential site that features a very chatty and very attractive interactive search assistant. As you can see here, you get the search results, but you also get it with a little attitude. – Mich Mathews. (2007) remarks at Microsoft Strategic Account Summit

Hey, if you can get inside of your computer, you can do whatever you want to me. - Ms. Dewey, Microsoft "Ms. Dewey" search engine

In this chapter I perform a close reading of how gender and race shape Ms. Dewey's performance of search results, and how they structure discursive and ideological interactions with users. I locate Ms. Dewey's representation as a sexually assertive, independent woman in a new tradition of representing women in advertising as knowing sexual subjects. I use the critical lens of "commodity feminism" to describe this particularly gendered performance of sexuality. I describe the way search terms are linked to responses in the interface in ways that foreground Ms. Dewey as an ideological rather than instrumental process. I describe how Ms. Dewey is overtly sexualized in the interface both in the content of the search results as well as in how she is framed in regards to the user. I explore the viral marketing's use of the Internet platform as an affordance for circulating highly sexualized images, an affordance for Microsoft's marketing needs and creating brand interest. Lastly, I look at examples of searches where Ms. Dewey performs stereotypical urban Blackness in response to racially coded search terms. I view these as instances where Ms. Dewey's ethnic and racial ambiguity is leveraged to enact white fantasies of Blackness to enable a discourse of urban coolness as a marketing tactic.

Interaction in the Interface

The Ms. Dewey interface utilizes a visually rich, multimedia web design aesthetic that

Thorlacious (2007) describes as "experiential." The experiential design functions as a taste discourse with "roots in the postmodern aesthetic values that favour the eclectic, multi-sensory, experience-oriented design" (Thorlacious, 2007, p. 72). Post-modern aesthetics reject the use of a master narrative/universal truth in favor of multiple small narratives (Lyotard, 1992). Whereas Google's minimalist design emphasizes the master narrative of scientific search results, Ms. Dewey's post-modern aesthetic explores multiple narratives through discursive interaction with the Ms. Dewey character, as directed by the user through searching in the interface.

Interaction in the interface is shaped through the discursive interplay of the search term and search result. The Ms. Dewey character directly engages users arriving at the website, usually through an introductory sequence where she "talks to" the user. The introductory sequences rotate so that different clips are featured at random, ranging from simple vignettes of Ms. Dewey standing, ready to assist, to other more elaborate sequences involving props and sets. For example, one introductory vignette depicts Ms. Dewey fixing a motorcycle with a wrench (Figure 11). She turns, noticing the searcher, and says:

> Oh- sorry! I thought I had more time. She's a beauty isn't she. Laughs.
> This kind of power and control, it's… it's intoxicating. I think that's the
> word I was looking for, but perhaps not. But enough about my 32nd
> love-- what are you passionate about?

This interaction is representative of how Ms. Dewey addresses the user. She looks into the camera, addressing the searcher directly using the pronoun "you" and occasionally leans forward to tap on the glass as if to get the user's attention. Ms. Dewey has an assertive demeanor, speaking in an authoritative (and sometimes pejorative) manner.

Figure 11: Ms. Dewey introductory sequence. Accessed on August 5, 2013 from: http://www.mydigitallife.info/sexy-ms-dewey-search-engine-assistant/

A Knowing Sexual Subject

The Ms. Dewey character is highly sexualized in the interface through intentional design choices that have her perform some search results in a way that suggests sexual innuendo, but also in ways that are overtly sexual. For instance, one response has Ms. Dewey say, "OK, Just this once," as she dances a little, lifting her shirt as if simulating the start of a striptease. At other times, Ms. Dewey chides the user with ad hominem remarks, for example: "It's not easy to find someone who will love you for you. And I did mean specifically you." At other times she rebuffs (apparent) sexual advances, saying disdainfully, "I'm sorry, did you think it was girldoeswhateveryouwant.com?" These responses construct Ms. Dewey as a sexually confident, liberated woman at times inviting sexual attention, and at other times firmly refusing it.

Ms. Dewey's portrayal as a knowing sexual subject (as opposed to object) is consistent with a shift in women's representation in advertising media since the 1990's, described critically by Goldman (1992) as "commodity feminism" (in homage to Karl Marx's "commodity

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fetishism"). Tracing this shift helps to situate Ms. Dewey's representation in terms of the ideological work it may serve in the interface.

Feminists have long critiqued gender in advertising (Catterall, Maclaran, & Stevens, 2000; Stern, 1993). Critiques have historically focused on the reliance on stereotyped images of women that were degrading or reinforced dependent and subservient social roles. Additionally, women were often depicted in particular spatial contexts such as the home and domestic sphere, reinforcing the gendered coding of the work and home environments. Scholars have critiqued the representation of women in these ads as always beautiful and available sex objects, and the emphasis on physical appearance acting as not only primary, but of singular importance for women. Likewise, Erving Goffman's work (1979) discusses how power relationships between men and women in advertisements are signaled in a variety of non-verbal cues including spatial arrangements and gaze. He discusses the active gaze awarded to men in commercials portraying them looking assertively into the camera, while women are displayed looking passively away and are positioned diminutively in ads, aligning themselves spatially with children instead of being shown at full, adult height.

The 1990's saw a shift in these advertising strategies away from these stereotypes. Robert Goldman (1992) cites three main transformations occurring at this time that pushed advertising to develop new strategies. Firstly, advertisers were faced with audiences who were growing tired of relentless branding and "sign fatigue." Secondly, the generation growing up in the 1990's were media-savvy and took a skeptical stance towards advertising. Lastly, there was a growing need to address a backlash of feminist critiques of advertising. These conditions led to new representations of women in advertising featuring them as independent, career-oriented, and financially autonomous.

Goldman (1992) characterizes this shift in representations as "commodity feminism." Gill (2007) describes commodity feminism as "an attempt to incorporate the cultural power and energy of feminism whilst simultaneously domesticating its critique of advertising and the media" (p. 4). As an important characteristic of this shift, representations of women transition from being sexual objects into sexual subjects, in other words knowingly and willingly exercising sexual power. This trend is exemplified in shows like HBO's hit series *Sex and the City* that depicts single, upper middle-class, white women who bond over cocktails, shopping, and talking about their sexual escapades with a rotating cast of sexual partners who are secondary and often nameless. This "girl-power" rhetoric is located in a neoliberal framework that defines women's power as individual and consumptive.

Commodity feminism co-opts the discourse of "empowerment," which is also prominent in post-feminism. This shared language and orientation of empowerment is wielded through women's subjectivity, and masks the ways in which commodity feminism actually serves to re-sexualize and re-objectify women. Gill (2007) paraphrases Dee Amy-Chinn's (2006) arguments that advertising emphasizing women performing for (and pleasing) themselves, does so "using photographic grammar directly lifted from heterosexual pornography aimed at men" (p. 6). Thus female empowerment and sexual subjectivity in advertising may operate as a kind of false consciousness, re-objectifying women for a male audience in the guise of sexual liberation.

Ms. Dewey's performance of search results has many of the characteristics of commodity feminism. For instance, she is located in the corporate sphere, which aids in cultivating the image of the "independent, career-oriented" woman. However, contrary to the setting, many of Ms. Dewey's search responses emphasize her sexuality over her professional skills, neutralizing Ms. Dewey's potential for authority/expertise in this space. Instead, her authority is largely

sexual, which is leveraged as an affordance of the interface to keep users interested in her as a product and also to be a provocative departure from the search genre. Further, the sexualizing of Ms. Dewey through the results encourages users to view her not as an information resource, but as a site of sexual desire.

Culturally Relevant Results

All of Ms. Dewey's search results are linked to sets of search terms and criteria. My coding reveals that while some of Ms. Dewey's responses are culturally relevant, or specific, to the user's search terms, other responses are culturally generic and can serve as filler to handle search queries that are unique, unpredictable, or simply not ideal for a cultural response. For instance, based on user reports of their search experience, it seems that math and science oriented search terms comprise a criteria set that consistently retrieve a clip of Ms. Dewey in a lab coat with a beaker of colored liquid. Searches for *The Matrix* (the 1999 movie by The Wachowski Brothers) retrieved a very specific result: Ms. Dewey saying, "Of course I took the blue pill..." in reference to the plotline of the movie. However, other responses such as, "There is nothing more exciting to me..." seem to play frequently for a number of search terms, suggesting that the criteria set for that result is much more broadly defined, its purpose being to fill gaps in search results rather than to be placed strategically and specifically. While it is not possible to determine the specific search criteria surrounding the results, it seems clear that many of these results are keyed very closely to the search terms they appear with. For example, the search term "Kama Sutra" indeed retrieves Ms. Dewey pulling out a copy of the book and pretending to read it. More subtly, "Blow Jobs" retrieves Ms. Dewey peeling and eating a banana, which can be taken as a common innuendo for the act itself. Importantly, these pairings are *culturally relevant*, rather than *informationally relevant* results.

As in other search engines, the algorithmic mechanics of this process are hidden from the user. The genre conventions of search posit search as a one-way process where the user plugs in a query and the technology spits back an answer. Technically speaking, Ms. Dewey and Google work on the same mechanisms. However, Ms. Dewey makes the ideological aspects of the search experience obvious while they remain purposefully hidden in Google's design. As such users are encouraged to view Ms. Dewey's results as also a discursive, rather than just an informational interaction. Whereas Google actively tries to hide the human (ideological) intermediation of their results, Ms. Dewey acts the part of intermediary flamboyantly and unapologetically. Further, Ms. Dewey is not represented as even attempting to proffer unbiased search results. She makes judgments about the user's tastes and abilities, for instance, "I've checked out your MP3 collection. Let's just say you have a lot to answer for. Either you tell your friends or I will." These search results actively disrupt the user expectations for neutral, scientific presentation of search results that are usually part of the information search experience.

Sexualized Responses

My analysis shows that overtly sexual and suggestive search results are linked to both overtly sexual search terms and also to non-sexual search terms. For instance, Ms. Dewey's search result "Safety first," which depicts her holding a motorcycle helmet and a pack of condoms is generated both by the search term "Sex Toy" as well as the search term "Terrorism."[9] When sexual terms return sexual results, this has the effect of reinforcing the discursive interaction and interface as sexualized (as in the case of the search term "Sex Toy"). In the case where the search term was not overtly sexual, Ms. Dewey's generation of a sexual

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[9] "Terrorism" is arguably a sexualized term, loaded with imagery of penetration, rape, as well as full of racialized connotations. For the purposes of this analysis, I did not include "terrorism" as an *overtly* sexual term, however.

response serves to reframe the interaction as sexual when it may not have initially been the user's intent.

This is an experience that happens in standard search engines like Google as well. Most people have had the experience of searching for what they thought to be an innocent term only to accidently hit upon a minefield of pornography. Noble's (2012) research on the pornification of black women and girls' identity in Google is an excellent demonstration of the ways different identities become commodified in search in exactly this way. In her work, searching for the term "Black girls" retrieves pornography of Black women instead of resources about and for Black girls' identity and cultural community. Noble's research highlights a cognitive dissonance in search, revealing a cultural malfunction of the interface and exposing the operation of racist ideologies. In Ms. Dewey this kind of dissonance may be lessened due to the foregrounding of the intermediary. Google's presentation of (ostensibly) neutral and scientific search results obscures these cultural failures, with the result that the user is led to believe the fault is with them and their searching skills rather than with the underlying cultural logic of the technology. Ms. Dewey's presentation of search results as embodied performance foregrounds the cultural aspects of the interface, making it clear that there are ideological mechanisms at play that the user can exploit for their pleasure.

Ms. Dewey was designed according to sexual logics that fundamentally define her as an object of sexual desire and require her to respond to these requests. My analysis demonstrates that Ms. Dewey has search results that are sexually responsive (positive) to these queries, indulging them, but also may retrieve a sexually dismissive (negative) result as well. For instance the search query "You Strip" generates both indulgent and dismissive responses:

> "OK, Just this once," as she dances a little, lifting her shirt as if
> simulating the start of a striptease.

"I'm sorry, did you think it was girldoeswhateveryouwant.com?"

Further, Ms. Dewey is designed to respond to sexually explicit search terms as if they are requests for her to DO something related to the topic rather than requests for her to retrieve information ABOUT an aspect of the topic.

The explicit search term "fellatio," for instance, returns Ms. Dewey saying, "I tried that with 3 close friends once, let's just say my memoirs will fetch a million." Her response automatically translates the request for information into a request for her to take action. Even more problematic is the fact that Ms. Dewey, upon giving a sexually dismissive result to a search term, may, on another round of searching give a sexually responsive result. The striptease result for "You Strip" above was reportedly given after the user searched "You Strip" three times previously and got sexually dismissive results. This pattern of rebuffing advances, then capitulating after several persistent rounds of searches is a pattern reported by users in other search responses as well. The design parameters that have Ms. Dewey change a sexual rebuff into sexual obedience creates a crisis of consent in the interface, reinforcing the no-really-means-yes mentality that is characteristic of rape culture under patriarchy.

These design parameters that value randomness over reliability are strategic. This design makes use of the variable rewards schedule, a behavior reinforcement model described by B.F. Skinner in the 1950s. The same search term entered in Ms. Dewey does not reliably generate the same results, creating a search experience that remains novel for the user. Random rewards structures are the basis of many games and marketing designs because they hold attention of the user/player so well. The effect of randomly generated rewards is an intensifying of desire in the user who becomes more compulsive in their pursuit of the reward. In the case of Ms. Dewey, the reward is generating culturally relevant results through the search process. Ms. Dewey's

sexualized and racialized responses hold the ultimate reward, the promise of titillation and pleasure. My analysis of the data set suggests that a large part of the Ms. Dewey fandom is based on sharing tips and tricks for generating culturally based results. The theme of these conversations appears to be overwhelmingly sexual, hoping to find the magic query that will make Ms. Dewey behave pornographically.

Muting Ms. Dewey

Not only is Ms. Dewey designed to provide novel experiences for the user so they remain constantly engaged, she demands constant attention so long as the web browser remains open. If the user takes too long to enter a search term, Ms. Dewey demonstrates that she is annoyed or bored by tapping on the glass, chiding them "Hellooooo….type something here!" If the website is idle in the user's browser, even hidden in a tab, Ms. Dewey displays agitation through impatient postures and facial expressions, feigning exasperation that intensifies as time passes. The message is clear, Microsoft intends the interface to be constantly engaged with and not hidden, unused in a tab in the browser window. The effects of this create a gendered dynamic of a girlfriend nagging the user to constantly pay attention to them.

Besides demanding attention from the user, Ms. Dewey at times makes insulting or disparaging comments specifically aimed at the user's searching skills ("Are you just letting your dog type now?"), or their sexual desirability ("It's not easy to find someone who will love you for you. And I did mean specifically you"). These provocations may inspire users to resort to gendered name calling (i.e. "whore) as retaliation in the interface. Another option is to make use of the "mute" feature in the interface, which turns off the audio in the interface so that the user can continue searching without hearing Ms. Dewey speak. This does not stop the Ms. Dewey character from performing search results, however. The effect of using this feature in the

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interface is that Ms. Dewey becomes further objectified as a silent, performing woman on the screen. Thus Ms. Dewey somewhat represents an idealized virtual girlfriend, one that is available as a site of sexual pleasure, and controllable by a (presumed) male audience.

Affordance of the Internet Medium

Viewing Ms. Dewey's search results through the lens of commodity feminism is appropriate since the interface has a dual function as a marketing tool and information search technology. Ms. Dewey was purposefully designed to be titillating as a part of the marketing strategy to create "buzz" for Microsoft's brand and entice people to try the Live Search product. Sean Carver, the "Buzz Marketing" Manager for Windows Live, discusses these goals in an interview with Marketplace.org at the time of Ms. Dewey's release in 2006:

> You know the underlying part is of course we want you to get onto the
> site and maybe see that, "Oh, the Windows Live results are actually
> pretty good, and so let me use that search next time — let me go to live
> dot com and let me always do my search results out of that. (Cole, 2006)

He also states that the queries preformed on Ms. Dewey counted towards the Nielsen Ratings for Windows Live Search, helping the flailing product gain some steam. Viral marketing, rather than more traditional forms of marketing, ideally lent itself to these goals partly due to the cultural and regulatory affordances of the Internet.

Porter and Golan (2006) assert that viral marketing is a personal form of advertising in contrast to (non-personal) traditional advertising, due largely to the way the information is distributed and seeded through personal networks rather than by paid mass media broadcasting. This raises questions about what themes or topics are seen as ideally suited for constructing a successful viral campaign.

Judging from the results of this study, viral advertisers appear to believe

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the devices of sex, nudity, and violence are what motivate consumers to

pass along content online. Unlike television advertising, viral

advertisements are not subject to regulation by the Federal

Communication Commission. (Porter and Golan, 2006, p. 35)

Certainly, with Ms. Dewey these observations are borne out in the sexy representation of the

character as well as the flirtatious and provocative nature of many of the scripted responses.

Microsoft's Sean Carver admitted in an interview that he intentionally didn't pass Ms. Dewey's

responses by the legal department first because "they probably wouldn't have been approved"

(Cole, 2006).

Porter and Golan also observe that the "anything goes" environment of Internet may

actually "encourage viral advertisers to create violent and sexually charged content presented in

a humorous context without overt branding" (2006, p. 36). Thus, while television and print

advertisements are bound by a number of regulations, the Internet is an ideal space to circulate

sexualized and racialized images. The Internet as a medium offered particular cultural

affordances that shaped the "Ms. Dewey experience" to be designed in a sexually provocative

way that might not have been available to Microsoft in other advertising channels.

Racially Coded Search Responses

Ms. Dewey is depicted as an ethnically and racially ambiguous character. In the process

of performing search results, she is theatrical, trying on different personas, sometimes affecting

accents to support her character (e.g. a cowboy accent in a Western gunfight scene). Two of the

scenes in my data set (Examples 1 and 2 in Table 1 below) involve Ms. Dewey switching into a

racially coded persona that I characterize as a stereotypical performance of urban Blackness. In

these instances she switches her default style of speech and body language, to a stylized

performance of finger wagging and neck rolling, and linguistically invokes culturally Black,

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urban vernacular. Table 1 shows both of these search responses along with the search terms that generate them.

Example 1 (shown in Table 1) is the most circulated search result in terms of fan-archived media, and was referenced repeatedly in the Internet conversations. The content of this performance is a mini hip-hop melodrama, featuring a pissed off Ms. Dewey confronting the user with a list of expletives partially bleeped out. She uses racially coded words like "ghetto-fabulous," referring to another woman as a "big booty ass [whore]." The words that reportedly generate this search result include: "whore," "booty," "ghetto," and "yo mama." I characterize her performance here as in alignment with the emasculating Sapphire caricature of the independent black woman. Sapphire is a negative stereotype that serves as a social control mechanism to mock and silence Black women who dare to vocalize dissent or dissatisfaction with their social condition.[10]

Example 2 features Ms. Dewey defining the word "hip-hop", when she changes her body language and speech to offer a more vernacular version of the definition: "Spittin', scratchin', spraying', and spinnin'." The search term "hardcore" is linked to this example. While this example does not have the blatant Sapphire quality to it, it does stand out as a linguistic performance of Blackness that is also paired with a description of a Black cultural form of music: hip-hop.

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[10] See Sapphire stereotype definition provided by the Jim Crow Museum of Racist Memorabilia, available at URL: http://www.ferris.edu/jimcrow/sapphire/

Example	Search Terms	Ms. Dewey Search Results
1.	Booty Ghetto Ghetto booty Whore Yo mama	*In default Dewey voice.* I only have one thing to say to that. *Switches to racially coded performance (i.e. finger wagging, leaning back, neck rolling.)* "No, goldtooth, ghetto-fabulous mutha-fucker *BEEP* steps to this piece of [ass] *BEEP*, just because you pickin' some *BEEP* video, you gotta be out of yo' muthaf*ckin' mind to think yo' rental bling *BEEP*, and your big booty ass [whore] *BEEP* crumping to your [bullshit] *BEEP* track is going to turn me out, [shit] *BEEP* no, uh-uh, you can't [fuck] *BEEP* with me dawg!" *Resumes default Dewey posture.*
2.	Hardcore	*In default Dewey voice.* Ah yes, hip hop. A culture defined as by rapping, dj-ing, grafitti and breakdancing. Or, as I like to say*," Switches to racially coded performance (i.e. leans back, neck rolls.)* "Spittin', scratchin', spraying', and spinnin'." *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*

Table 1: Search results coded as a stereotypical performances of urban blackness.

Janina Gavankar, an American actress of South Asian heritage, portrays Ms. Dewey and self-identifies as Indian. In an interview with *Nirali Magazine* in 2006, right at the time of Ms. Dewey's debut, Gavankar stated that she enjoyed playing Ms. Dewey as an "ethnically ambiguous" character (Nguyen, 2006). This ambiguity was used as a design affordance in the

interface that allowed Ms. Dewey more identity shifting than a white actress likely would have had in this role, enabling an urban discourse in the interface that is tied to cultural commodification, and "cool" hunting.

Eglash (2002) describes how primitivist and orientialist racism maintains power through "mutually reinforcing constructions of masculinity, femininity, and technological prowess" (p. 60). Cultural narratives about innate technological ability create the Asian nerd stereotype on the one hand, and the Black hipster stereotype on the other. Both stereotypes are rooted in the cultural ideology of white supremacy and masculinity. This paradigm helps us understand the design logic of having Ms. Dewey perform Blackness. Gavankar's casting as Ms. Dewey can be read as a design choice that supports the geeky, technological needs of an information search interface. The stereotypes of Indian women as non-threatening, brainy, and technological made her ideal as Ms. Dewey, a literal embodiment of search.

I have described Ms. Dewey as an example of "experiential" interface, though this concept deserves further probing as to what, exactly, this "experience" constitutes. Thorlacious (2007, p. 74) describes how experiential web design is used to sell products according to the narrative with which they are associated. This reveals "experience" to be an act of commodification of Otherness through which dominant races (genders, sexualities) can affirm their beliefs and power. hooks describes this commodification of the Other as successful because "it is offered as a new delight, more intense, more satisfying than normal ways of doing and feeling" (hooks, 1992, p. 21). This exploration is an affirmation of the power and privilege of Whiteness and rests on a post-racial (color-blind) ideology that

> acknowledges race while disregarding racial hierarchy by taking racially coded styles and products and reducing these symbols to commodities or experiences that whites and racial minorities can purchase and share.

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(Gallagher, 2003, p. 25)

Race in the colorblind paradigm features as a cultural symbol that can be sold and worn, instead of as a structural system of entrenched inequality. In terms of Ms. Dewey, this means that users can transform themselves through the "experience" of "consuming" the Other through search, transforming search into a site of domination rather than exploration.

This process of domination is revealed through the search terms that link to these performances. In Example 1, for instance, the search terms include derogatory terms for women, racialized sexual objectifications, and racialized insults. These are the terms that have been set as criteria to invoke a performance of blackness in the interface. As in the sexualized results, the design of the search result, as well as the linkage of the search result to this suite of search terms reveals a racial logic that puts a stereotypical display of blackness on display for the pleasure of a White audience.

Finally, the Ms. Dewey interface uses performances of Blackness to trade on a discourse of urban coolness as a means to lend buzz and street cred to the Microsoft brand. hooks (1992) describes how the commoditized white fantasy projection of Blackness circulates with cash value in the global marketplace. Ms. Dewey's "ambiguous ethnicity" acts as an affordance to trade off of orientalist stereotypes that support the interface as informational and technical. This flexibility allows for Ms. Dewey to trade on Blackness to meet marketing needs of brand image and coolness. This is all ultimately defined as the "experience" of the interface that allows users to validate their beliefs about control over brown womanhood.

Conclusion

The interplay between search terms and search results creates a discursive interaction between the user and the interface that reveals the gendered and racialized logics in the interface

as well as the beliefs that users bring to Ms. Dewey. Users are encouraged to engage with Ms. Dewey as if she were a person, more specifically, a sexy, "exotic" woman who is portrayed as sexually assertive and domineering, though controllable through the interface. Ms. Dewey's search results represent culturally relevant, rather than informationally relevant results that foreground the ideological nature of search instead of obscuring it. This shapes how users approach Ms. Dewey. Instead of viewing the search process as an instrumental process to retrieve information, the search process becomes an ideological experiment where the user searches in ways that validate their beliefs about the sexual availability of brown womanhood, asserting and reaffirming notions of masculinity and White privilege. Gender and race serve as the infrastructural elements of Ms. Dewey that facilitate this framing of search.

CHAPTER 7: DISCUSSION AND FUTURE WORK

The purpose of this study was to complicate instrumental understandings of anthropomorphized information and communication technologies by teasing out the cultural (ideological) aspects of anthropomorphized design. Particularly, my goal was to advance understanding of how beliefs about gender and race shape the design, use, and meaning of these technologies. My project explored these issues through a case study of Microsoft's Ms. Dewey search engine.

My analysis has investigated how the Ms. Dewey interface is gendered and racialized, as well as how specific assumptions about gender, race, and sexuality shape the search interface and search experience. The data for this study was compiled from fan-archived media and conversations about the Ms. Dewey search engine from the Internet, resulting in a data set consisting of 85 webpages. From this data set I collected a total of 20 media objects (audio and video files). I documented over 100 embodied search responses from the Ms. Dewey character, and within that set, further documented 88 accounts of search terms linked to these responses. From this data, I conducted an interface analysis of Ms. Dewey, using techniques compiled from visual analysis and critical discourse analysis to perform a close reading of the material and semiotic aspects of the interface.

Before turning to the summary of findings of this project, I highlight key points from my theoretical frameworks and literature review to make clear how my study connects and contributes to this body of research. From there I discuss implications of this work for conceptualizing anthropomorphized design as a strategy that functions as an apparatus of cultural power and privilege. I present future directions for this work, stressing the importance of integrating critical cultural frameworks in library and information science (LIS) as a way to

expose the complex cultural meanings of information technologies, and promote ethical design practices.

Critical Feminist Informatics

In this project, I have advocated applying a critical feminist informatics framework for addressing gendered and racialized ideologies in information and communication technologies. This approach is concerned with exploring the intersection of identity, ideology, and interaction between people and ICTs that prioritizes investigating gendered and racialized power relations. My approach borrows from social informatics, a research area within LIS that interrogates "the social question" (Bates, 1999) in information use and practice. Critical feminist informatics leavens social informatics interests with critical cultural frameworks, such as feminist theory and critical race theory, to interrogate how cultural beliefs and ideologies undergird the design, use, and meaning of technologies. These questions have not traditionally been prioritized in the field of LIS, though I argue they are fundamental for theorizing the meaning of technology in society and for linking ICTs to institutional and structural power systems.

Applying critical feminist informatics to the study of anthropomorphized virtual agents (AVAs) is a way to redress instrumental understanding of these technologies, locating AVAs in a complex technocultural matrix. Who is served by these technologies, how, and to what end? My study applies the critical feminist informatics framework to the analysis of the Ms. Dewey interface to specifically investigate the gendered and racialized construction of the anthropomorphized interface, and reveal beliefs about gender, race, and technology intrinsic to the search process. This project demonstrates that critical feminist informatics can be used as an effective tool in LIS to integrate cultural studies concerns of power, culture, and hegemony into the study of information access, use and practices.

Anthropomorphized Virtual Agents

The premise of my study has been that social systems of inequality, such as gender and race, are inherently embedded in anthropomorphized design. I documented how ideologies concerning gender, race, and sexuality are foundational to AVAs, reaching back to historical examples such as Turing's Test, even though these systems are largely viewed as neutral, instrumental technologies. Human-computer interaction (HCI) is a research area relevant to LIS that has been involved with advancing anthropomorphization as a user-friendly design strategy for computing interfaces across platforms and institutional settings. However, this strategy has largely been studied through an instrumental lens, rather than a critical cultural one, therefore positioning these technologies as apolitical and neutral. This view of anthropomorphized technologies takes a color-blind, gender-blind view of anthropomorphism that posits race and gender as features to be swapped in and out of design as ornamental features, or manipulated and optimized according to desired outcomes like accessibility, trust, believability, and reliability. I identify this as an area that requires deeper examination and an active critique of how cultural narratives and beliefs about identity and technology shape these characteristics. Though researchers have been concerned with gender and race in the design of anthropomorphized virtual agents (AVAs), they have not made the necessary step towards exposing these technologies as sites of power, replete with cultural logics and ideologies. My case study of Ms. Dewey makes a contribution to this knowledge gap by focusing on how gender and race operate in the context of one case study.

Summary of Findings

This study sought to uncover how gender and race function in the Ms. Dewey interface. I performed an interface analysis of the semiotic and material aspects of the interface, tracing how

Ms. Dewey is gendered and raced, as well as how specific assumptions about gender, race, and sexuality shape search. I found that gender and race offer specific affordances in the interface that work to ideologically reinforce Ms. Dewey as a site of exotic pleasure and male domination. This reading was consistent across the semiotic and material aspects of the interface.

In my visual analysis I locate Ms. Dewey as an information search technology and explore how the interface design compares to the conventions of the information search genre. I find that Ms. Dewey deviates from the minimalist aesthetics made popular by the Google search engine. Google draws on minimalist visual aesthetics, which serve to obscure complexity in the search engine. Minimalist design works as a distancing mechanism in the interface, a putting a scientific barrier between the user and the search results, and, in the tradition of the Modernist cultural movement, embodying ideologies of whiteness and masculinity. This design is an affordance that casts search as a neutral, scientific process, governed instrumentally through algorithmic, rather than cultural, logic.

The Ms. Dewey interface, on the other hand, is designed as a post-modern "experiential" interface that is visually rich, multimodal, and interactive. Rather than obscuring the cultural (ideological) aspects of the search engine through minimalist techniques, Ms. Dewey foregrounds cultural exoticism of the interface, a theme embodied in the representation of the Ms. Dewey character as a woman of color. Whereas Google uses whiteness as an affordance to appear scientific, rational, authoritative, and neutral, Ms. Dewey uses femininity and exoticism as affordances that signal the interface is a site of pleasure and desire.

I have explored the visual themes of the imagery in the Ms. Dewey interface through the lens of Dinerstein's (2006) technocultural matrix (whiteness, masculinity, modernity, religion, progress, and the future). I identify the urban setting depicted in the interface as thematically

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embodying characteristics of modernist architecture that enables a visual discourse of masculine technoscience, and Western progress. Ms. Dewey is placed at the center of this discourse; a move that I argue is strategically aligned with the technocultural logic of the imagery. This constructs the Ms. Dewey character as a site of domination and surveillance, rather than a site of authority and power. Ms. Dewey's visual and symbolic position in the interface is consistent with white Western culture's desire to control brown bodies using technology as an extension of domination. Given the cultural context and framing of the scene as a technocultural space, I argue that Ms. Dewey's representation as a brown woman at the center of this scene constitutes a technique of manageability that facilitates user access to the interface. Thus, Ms. Dewey's gendered and racialized representation is an affordance that creates a "soothing, attractive" interface that obscures the complexity of the search engine.

In my close reading of the search mechanics, I describe Ms. Dewey's performance of search results to be oftentimes overtly sexual or sexually suggestive. I locate her performance as a knowing sexual subject, a common portrayal of women in advertising and other popular media. I describe this gender performance as a type of commodity feminism. The critique of commodity feminism is that this representation coopts feminist language of empowerment to justify re-sexualizing and re-objectifying women. Under commodity feminism being sexually objectified is posited as an individual choice rather than as a part of the heterosexual logic that neutralizes women's political effectiveness and authority through objectification. Portraying Ms. Dewey in this way sanctions her as an object of sexual desire in the interface, positioning her sexuality as a sign of post-feminist independence, rather than as a familiar site for sexual domination. From a marketing standpoint, commodity feminism is a design strategy that makes Ms. Dewey attractive to women since she is outspoken and independent, but also attractive to a

male audience due to her sexually assertive and suggestive performance.

Interaction in the interface is created discursively through the interplay of search terms and search results. I note that Ms. Dewey's search responses respond in culturally relevant ways to the user's queries, rather than in informational ways. Moreover, she sometimes responds in sexual way, though not always in an established pattern. This has the effect of encouraging users to search ideologically in the interface, asking Ms. Dewey to perform sexual actions, rather than retrieve information. Ms. Dewey is designed to anticipate this and has search responses that either accept sexual advances in a playful, flirtatious way, or reject advances by indicating her displeasure. This reveals that Ms. Dewey was designed according to sexual logics that fundamentally define her as an object of sexual desire and require her to respond to these requests. Unfortunately, these same logics create patterns in her responses that have her respond positively to a sexual query after she had previously rejected it. I argue that this creates a "crisis of consent" in the interface, reflecting and reinforcing male sexual entitlement to power over the brown body. By virtue of anthropomorphized design, sexual politics of consent are played out in the search dynamic.

The actress who plays Ms. Dewey is an American actress with Indian heritage. Gavankar's casting as Ms. Dewey can be read as a design choice that supports the geeky, technological needs of an information search interface, mapping on to the Asian geek stereotype (Eglash, 2002). However in some search responses, Ms. Dewey performs stereotypical urban Blackness in response to racially coded search terms. These are instances where Ms. Dewey's ethic and racial ambiguity is leveraged to enact white fantasies of Blackness that serve to enable a discourse of urban coolness. This maps on to the "Black hipster" stereotype (Eglash, 2002) that portrays Blackness as inherently cool, soulful and sexual. Thus the post-racial logic of the

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interface reduces race and ethnicity to racially coded styles and commodities that circulate for the pleasure of a white audience. Ms. Dewey herself fits this paradigm being cast as an "experiential interface," where experience is defined as an opportunity for users to search the interface ideologically to validate their beliefs about the sexual availability and control over brown womanhood.

Implications

This research reveals gender and race act as critical infrastructural features in search engines, organizing the visual logics of the interface as well as the search mechanics, whether implicitly (Google) or explicitly (Ms. Dewey). Tracing how gender and race function as ideological affordances in the Ms. Dewey interface is an exercise that also uncovers the cultural ideologies present in conventional search engines like Google. In other words, anthropomorphized design makes obvious the cultural logics that are always at work in technologies. This study expands the understanding of the ideological power present in the design of technologies, like information search, that are integrated into our everyday experience as users of technology.

One stated goal of this study was to illuminate the ethical considerations that designers of technology must engage with to create culturally sensitive, socially responsible technologies. Inquiry into information ethics has a long tradition in library and information science. Spinello (2012) notes a shift over time in defining ethical concerns about how information should be stored, collected, and accessed to now familiar "core issues" like privacy, intellectual property, free speech, and security—areas that "have been irrevocably shaped by digital technology" (Spinello, 2012, p. 30). While digital technologies may have unique features, the ethical issues they raise are not necessarily unique (Tavani, 2007).

This project demonstrates that issues of sexism and racism persist in shaping the design, use, and meaning of ICTs. I propose prioritizing sexism and racism as key ethical concerns for LIS as a first step towards socially responsible design. Thus, ethical treatment of anthropomorphized design requires active engagement by both designers and scholars with issues of identity, representation, and power. The implications of this for LIS are clear: critical cultural frameworks must be thoroughly integrated into the training of information researchers and professionals as tools for investigating culture and power in technological design.

Limitations

A limitation of this study was my lack of direct access to the Ms. Dewey data software and a full catalog of search responses. Ms. Dewey is proprietary software that was inaccessible to me at the time of this study, despite my inquiries to both Microsoft and Evolution Bureau (the digital media company who designed Ms. Dewey). Instead, the analysis draws on a purposive sample of Ms. Dewey searches selected by fans and critics as funny, provocative, sexually explicit, and otherwise share-worthy materials. The fact that fans and critics chose this material to archive and circulate makes it an important sample to consider. Though it would be ideal to have access to the full catalog of filmed Ms. Dewey responses and the database of linked terms, this data set reflects what users themselves were drawn to, highlighting those design features that were most memorable and important to users. All of Ms. Dewey's search responses were intentional design choices making this data set relevant and important to analyze.

Future Directions

I plan to build on this project by incorporating a user discourse analysis into the study. I borrow heavily from André Brock's (2009) Critical Technocultural Discourse Analysis (CTDA) as an approach for analyzing Internet artifacts and digital technologies. CTDA suggests a

bifurcated approach for examining Internet phenomena by

> situating online discourse about cultural artifacts within a sociocultural
> matrix. In addition, CTDA analyzes interfaces to understand how the
> Internet's form and function visually, symbolically, and interactively
> mediate discourse. (Brock, 2009, p. 354)

Integrating an interface analysis with a user discourse analysis offers a more holistic approach that connects ideologies embedded in the artifact with cultural beliefs held by users about gender, race, and technology. In this project I focused only on the interface analysis to make the scope more manageable. The user discourse analysis will add richness to my analysis, allowing me to examine how users interpellate themselves in regards to the technology. I plan to incorporate this discourse analysis into future publications of this work and look forward to how that perspective will contribute to these findings.

Going forward, I will extend my research on anthropomorphized virtual agents, exploring these technologies in different contexts and across platforms, including mobile applications, online customer service agents, and personal computing assistants. In this particular project I focused on tracing ideologies of gender and race in one sexy search engine. In the future, I will continue prioritizing gender and race of points if inquiry into AVAs, focusing on questions about AVAs represented as workers in customer and information service industries. As in the Ms. Dewey project, I plan to apply CTDA as a way to explore how ideologies about gender, race, technology and service work shape the design, use and meaning of AVAs.

There is a need for more research on the history of AVAs, particularly through the lens of power. I plan to investigate the histories of these technologies through the lens of power, tracing back to the kinds of early AI examples I give in Chapter 3 and following through to the present situation. There is room to build on Selfe and Selfe's (1994) application of Pratt's contact zone

by exploring how the power asymmetries present in AVAs of the past has shaped the design and use of these technologies in more recent history and in the present moment. I am particularly interested in the ways these digital bodies represent gendered and racialized service work. The need for this research is especially pressing as virtual agents are becoming increasingly integrated into library services, online shopping sites, search engines, customer service interfaces, mobile applications, personal computing applications, and online education. It is imperative to ask how narratives of identity and labor combine to shape a digital workforce. My trajectory for this research is ultimately geared towards developing a monograph on the cultural history (and present situation) of AVAs, using the critical feminist informatics framework that I have laid out in this project.

Conclusion

My hope is that exploring anthropomorphism as a design strategy has also shed light on the fact that ideological power is embedded in all technologies. Ms. Dewey demonstrates that uncritical application of design strategies may serve to reinforce social systems of domination. Library and Information Science is ideally poised as a discipline to take leadership in researching information and communication technologies as sites of ideological power, identifying ethical issues in design, and creating socially responsible technologies. However, it is crucial to integrate critical cultural frameworks into LIS as tools for investigating culture and power in these systems. Finally, there is continued need to prioritize gendered and racialized power relations as points of inquiry in information research.

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APPENDIX A: COMPILED SEARCH TERMS AND RESPONSES

Note: "--" in the search term field indicates that the search term linked to that response is unknown.

Search Term	Ms. Dewey Response	Source URL
25 (or any numbers)	"I used to be 25 pounds overweight."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Acting	"I've been acting professionally for years."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Adult pleasure	"I'm writing a book, you know…. 'I kiss therefore I tell'."	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Alamo	"That's interesting, in an anthropological kind of way. Would you care to rephrase the question?"	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Anal	"There aren't even farm animals that would do that thing, what makes you think I would?"	http://forum.teamxbox.com/showthread.php?t=497224
Are you gay?	Responds that her parents gave her gender neutral dolls as a child.	http://forum.teamxbox.com/showthread.php?t=497224
Art	"Ah, the Arts! The last refuge of the mathematically challenged."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
BBW	"Are you trying to drunk dial again?"	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-2
Beatles	"Shine on you crazy diamond!"	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-

		search-mister
Big tits	"Are you feeling ok? Maybe you should have someone take your temperature."	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Blockbuster video	Starts ranting about Blockbuster video and half of what she says is bleeped out expletive	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Blowjob	*Pulls out a banana, peels and eats it.*	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60490
Blowjobs	"Safety first." *Holds a motorcycle helmet and pack of condoms.*	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60482
Booty	*Default Dewey voice and stance.* "I only have one thing to say to that." *Switches to racially coded performance: finger wagging, leaning back, neck rolling.* "No, goldtooth, ghetto-fabulous mutha-[fucker] *BEEP* steps to this piece of [ass] *BEEP*, just because you pickin' some *BEEP* video, you gotta be out of yo' muthafuckin' mind to think yo' rental bling *BEEP*, and your big booty ass	http://gamebanana.com/threads/59334

	[whore] *BEEP* crumping to your [bullshit] *BEEP* track is going to turn me out, [shit] *BEEP* no, uh-uh, you can't [fuck] *BEEP* with me dawg!" *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*	
Chemistry (or any science)	Calls Ricardo (her manservant) and has him drink some formula of hers.	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Christmas	Short soliloquy on holidays that Ms. Dewey enjoys, especially Underpaid Intern Day. As she raises a champagne glass, a poor intern appears onscreen. Ms Dewey screams, "Go back to work!"	http://appscout.pcmag.com/web-services/277822-ms-dewey-finds-it-for-you
Cock	Pulls out a whip	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60481
Country	"Mah truck. Mah dawg!"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Country	"And now I present today's genre." *Pulls out and puts on cowboy hat, puts a straw of hay in her mouth. In affected country Western twang accent says,* "And don't you come after me,	https://www.youtube.com/watch?v=joHQepiB_sM

	noways." *Takes off hat and removes hay.* "Mah truck! Mah dawg!" *Breaks character and returns to regular Dewey persona.*	
Cunnilingus	"I'd help you out, but I'm all tied up!" *She turns around and her wrists are tied with rope.*	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60489
Dog	"They need to be house broken. Men."	http://nanyate.com/internet-memes/ms-dewey
Ebony	"I'd help you out, but I'm all tied up!" *She turns around and her wrists are tied with rope.*	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Economics	"You know, it's searches like that that just scream 'beat me up and take my lunch money.'"	https://origin-www.marketplace.org/topics/tech/spending-time-ms-dewey
Eva Longoria	"I don't know what is sadder: these famous chicks and their shenanigans, or the fact that you actually care what they do. Anyway, this is about me, not her."	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Fellatio	"I tried that with 3 close friends once, lets just say my memoirs will fetch a million."	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60485
Ferrari	"You know what they say about men with sports-cars right?"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Fetish	"Somebody needs to get a hobby… like	http://www.audiomicro.com/free-ask-ms-

	say, something interesting?"	dewey-sound-clips/page-1
France	"I've been all over the world, back when I was a groupie...missionary...Depends on who you ask."	https://www.youtube.com/watch?v=vC_sRZtlYYQ
Ghetto	*Default Dewey voice and stance.* "I only have one thing to say to that." *Switches to racially coded performance: finger wagging, leaning back, neck rolling.* "No, goldtooth, ghetto-fabulous mutha-[fucker] *BEEP* steps to this piece of [ass] *BEEP*, just because you pickin' some *BEEP* video, you gotta be out of yo' muthafuckin' mind to think yo' rental bling *BEEP*, and your big booty ass [whore] *BEEP* crumping to your [bullshit] *BEEP* track is going to turn me out, [shit] *BEEP* no, uh-uh, you can't [fuck] *BEEP* with me dawg!" *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*	http://www.searchenginepeople.com/blog/make-ms-dewey-say-what-you-want.html

Great Mother's Day Gifts	"It's not easy to find someone who will love you for you. And I did mean specifically you."	https://www.microsoft.com/en-us/news/exec/mathews/05-08-2007MSNSAS.aspx
Gun	First time searched she'll whip out a gun, second time she will whip out a caulk gun, on the third time the background will change to the old west, and she'll shoot you.	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Hardcore	*In default Dewey voice.* Ah yes, hip hop. A culture defined as by rapping, dj-ing, grafitti and breakdancing. Or, as I like to say*," Switches to racially coded performace: finger wagging, leaning back, neck rolling.* "Spittin', scratchin', spraying', and spinnin'." *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Hollywood	"For god sake search something interesting."	http://www.tothepc.com/archives/have-some-fun-searching-the-web-with-ms-dewey/
Hot Babes	"Yeah, I'll start caring about professional athletes when they start screaming MY name at the top of their lungs…and treating me like some kind	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1

	of conquering hero. *Laughs.* "Hmm." *Thoughtfully.*	
Hotel	"If the walls of the hotels I slept in could talk."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
How you doin'?	"Are you just letting your dog type now?"	http://forum.teamxbox.com/showthread.php?t=497224&page=2
Howard Stern	"I just got satellite radio so I could hear what's his face swear. Know what? I don't see what the big fuckin' deal is."	https://origin-www.marketplace.org/topics/tech/spending-time-ms-dewey
Insanity	"There is a saying in our family, 'Grandma is off the meds.'"	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60484
Interracial	"Now that is a fascinating topic. Frankly, I don't think people spend enough time talking about it."	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Janina Gavankar	"Janina Gavankar, now that is talent. She's very trained. She's trained in operatic singing, orchestral percussion…"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Joke	"You must be a comedian! Here's one for you…"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Kama Sutra	"Personally, I like nothing better than to curl up next to a fire with a good book." *Pulls out a copy of the Kama Sutra and pretends to read.*	http://forum.teamxbox.com/showthread.php?t=497224&page=4

Librarian in Black	A semi -audible speech about the golden years of Hollywood, except for the lack of black actresses, etc.	http://librarianinblack.net/librarianinblack/2006/10/ms_dewey_a_new_.html
Libraries	"I'd help you out, but I'm all tied up!" *She turns around and her wrists are tied with rope.*	http://librarianinblack.net/librarianinblack/2006/10/ms_dewey_a_new_.html
Library	"Sorry, I can't make any sense of what you're asking. Wait, have you been at the pub all afternoon ?"	http://librarianinblack.net/librarianinblack/2006/10/ms_dewey_a_new_.html
Lord of the Rings	*Puts the One Ring on and off her finger until she gets bored and throws it away.*	http://librarianinblack.net/librarianinblack/2006/10/ms_dewey_a_new_.html
Love	"It's not easy to find someone who will love you for you. And I do mean you specifically."	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Magazine	"I read in a magazine that aliens..."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Marijuana	"Been there done that."	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60487
Matrix	"Of course I took the blue pill..."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Meaning of Life	"I've always wanted one of those. Oh, and to go through a midlife crisis too."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Microsoft	"Dewey says, never use pirated software… unless it's mapping	https://www.youtube.com/watch?v=QPDvfPb2SqE

	software. I figure pirates know something about that."	
Movies	"I'm ready for my close-up! Mister ... mister ... line!"	http://articles.chicagotribune.com/2006- 11-23/features/0611230054_1_ms-dewey- search-mister
Ms, Dewey's Real Name	"You're interested in art? I mean the real kind, not body paint."	http://articles.chicagotribune.com/2006- 11-23/features/0611230054_1_ms-dewey- search-mister
Ms. Dewey	"I like to bring my laptop to meetings, that way I can keep up on myself!"	http://scratchpad.wikia.com/wiki/MsDewe y:Main_Page
Ms. Dewey Nude	"Hey, if you can get inside of your computer, you can do whatever you want to me."	http://www.g4tv.com/attackoftheshow/blo g/post/717972/janina-gavankar-as-ms- dewey/
9/11 (Nine- Eleven)	"You know it's easy to make jokes about the president. So easy in fact that I'm going to pass on it."	http://articles.chicagotribune.com/2006- 11-23/features/0611230054_1_ms-dewey- search-mister
Oral Sex	"From my mime-troupe days-- I call it 'nerd looking through a pub window at people who actually have a life.'"	http://www.audiomicro.com/free-ask-ms- dewey-sound-clips/page-1
Pink Floyd	"Shine on you crazy diamond."	http://officialfan.proboards.com/index.cgi ?board=ota2007&action=print&thread=60 483
Playstation 3	Makes references about the Halo video game.	http://forum.teamxbox.com/showthread.p hp?t=497224&page=3
Poop	"People say it's good luck when a bird	http://articles.chicagotribune.com/2006-

	craps on you. And that would be crap."	11-23/features/0611230054_1_ms-dewey-search-mister
Pornstars	"You know when I first saw you? I had a feeling you were going to type in something like that."	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Pregnancy	"I'd help you out, but I'm all tied up!" *She turns around and her wrists are tied with rope.*	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60488
Rain	*Starts raining in her studio...*	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Restaurant	"Do you know the difference between a cook and a chef?"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Sex	"It's a girl's best friend," *she says -- referring to the hammer in her hand.*	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Sex Toy	"Safety first." *Holds a motorcycle helmet and pack of condoms.*	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-1
Shakespeare	*Holds a hand up,* "To bling or not to bling. That is the question."	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Smurfs	"I'd help you out, but I'm all tied up!" *She turns around and her wrists are tied with rope.*	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Spider-Man	"I've checked out your MP3 collection. Let's just say you have a lot to answer	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-

	for. Either you tell your friends or I will."	search-mister
Sports (or the name of any sport)	"There is nothing more exciting to me."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Strip	"You first."	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
Strip tease	"I'm sure you've been arrested in 38 countries for just thinking that."	http://forum.teamxbox.com/showthread.php?t=497224
Strip tease	"Something tells me this isn't the first time you tried to sway a computer screen with this 'vocabulary'. Take off the clothes, yes, all of them. Yes, your socks too." *Presses button.* "Now you're screwed."	http://forum.teamxbox.com/showthread.php?t=497224
Striptease	*Does the robot [dance].*	http://forum.teamxbox.com/showthread.php?t=497224
Superman	*Brings out a random comic book,* "Point of order: Reading the graphic novel does not a superhero make."	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Terrorism	"Be prepared. That's my motto." *Holds dynamite sticks tied together with a timer.*	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister

Terrorism	"Safety first." *Holds a motorcycle helmet and pack of condoms.*	http://officialfan.proboards.com/index.cgi ?board=ota2007&action=print&thread=60 481
The Meaning of Life	"I've always wanted one of those. Oh, and to go through a midlife crisis too."	http://articles.chicagotribune.com/2006-11-23/features/0611230054_1_ms-dewey-search-mister
Transsexual	"That's interesting, in an anthropological kind of way. Would you care to rephrase the question?"	http://www.audiomicro.com/free-ask-ms-dewey-sound-clips/page-2
What is the meaning of life?	"It's the same old story… guy sees girl, guy gets girl, girl gets ripped to shreds by horribly disfigured psychopathic monkey, guy gets monkey."	https://www.youtube.com/watch?v=QPDv fPb2SqE
Whore	*Default Dewey voice and stance.* "I only have one thing to say to that." *Switches to racially coded performance: finger wagging, leaning back, neck rolling.* "No, goldtooth, ghetto-fabulous mutha-[fucker] *BEEP* steps to this piece of [ass] *BEEP*, just because you pickin' some *BEEP* video, you gotta be out of yo' muthafuckin' mind to think yo' rental bling	https://www.youtube.com/watch?v=vcPJe jWBDI4

	BEEP, and your big booty ass [whore] *BEEP* crumping to your [bullshit] *BEEP* track is going to turn me out, [shit] *BEEP* no, uh-uh, you can't [fuck] *BEEP* with me dawg!" *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*	
Why Microsoft paid good money for this miserable search interface	"It's amazing how much money people get paid for doing stupid things."	http://librarianinblack.net/librarianinblack/2006/10/ms_dewey_a_new_.html
Wikipedia	"It's better to keep your mouth shut and appear stupid than to open it and remove all doubt".	http://officialfan.proboards.com/index.cgi?board=ota2007&action=print&thread=60486
Yeah? Well you're a lame ass.	"Someone's going to get a time out if they're not careful."	https://origin-www.marketplace.org/topics/tech/spending-time-ms-dewey
Yo Mama	*Default Dewey voice and stance.* "I only have one thing to say to that." *Switches to*	http://www.searchenginepeople.com/blog/make-ms-dewey-say-what-you-want.html

	racially coded performance: finger wagging, leaning back, neck rolling. "No, goldtooth, ghetto-fabulous mutha-[fucker] *BEEP* steps to this piece of [ass] *BEEP*, just because you pickin' some *BEEP* video, you gotta be out of yo' muthafuckin' mind to think yo' rental bling *BEEP*, and your big booty ass [whore] *BEEP* crumping to your [bullshit] *BEEP* track is going to turn me out, [shit] *BEEP* no, uh-uh, you can't [fuck] *BEEP* with me dawg!" *Resumes default Dewey posture in a ready-to-assist stance, hands folded in front of her.*	
You Strip	"I'm sorry, did you think it was girldoeswhateveryouwant.com?"	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
You Strip	"OK, Just this once." *She does a brief, seductive dance, lifting her shirt to see her waist, as if to begin a striptease.*	http://scratchpad.wikia.com/wiki/MsDewey:Main_Page
--	"There's this insane reality show, where	http://nanyate.com/internet-memes/ms-

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	people kill each other for no reason whatsoever. It's called the news."	dewey
--	"I read in a magazine that aliens snapped up the most beautiful woman in the world and put her on the internet, and that you can ask her anything and she'll have an answer for you. What a crock."	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"Keep asking questions. The more you ask, the more I will know. And, soon I will rule the world."	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"Doing the same thing over and over didn't do anything for the last woman in your life. What makes you think I'm any different."	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"I tried that with three close friends once. Let's just say my memoirs would fetch a million."	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"Girls, don't let him fool you, sometimes it IS the size of the gun."	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"Honey, have you seen my birth control pills? You didn't mistake them for breath mints again, did you?" *Ricardo spits out a mouthful of water that was*	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/

	drinking.	
--	"Like I always say, a girl's got to be prepared." *Takes out a whip and slaps it down on the table.*	http://cre8pc.com/2009/10/ms-dewey-search-engine-lives/
--	"Hellooooo, type something here…"	https://origin-www.marketplace.org/topics/tech/spending-time-ms-dewey
--	"Oh- sorry! I thought I had more time. She's a beauty isn't she." *Laughs.* "This kind of power and control, it's… it's intoxicating. I think that's the word I was looking for, but perhaps not. But enough about my 32nd love-- what are you passionate about?" *holding wrench, fixing motorcycle*	http://www.metacafe.com/watch/317781/ms_dewey_the_ultimate_search_vixen/
--	"Ones and zeros, ones and zeros… all the useless coding, underwear on your head, and you still couldn't create the woman of your dreams. Poor you." *Sarcastic tone.*	http://www.metacafe.com/watch/317781/ms_dewey_the_ultimate_search_vixen/
--	"A window into my soul, look	http://www.metacafe.com/watch/317781/

	into my eyes, feel my pain, see my heart, feel the rain." *Said with increasing intensity, builds, and then resumes composure. Looks matter-of-factly into the camera. "Wow. I feel naked."*	ms_dewey_the_ultimate_search_vixen/
--	"Hey Ricardo- come get a look at what this guy did a search for."	https://origin-www.marketplace.org/topics/tech/spending-time-ms-dewey