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Communication Design Quarterly

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CDQ editorial

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Welcome to *Communication Design Quarterly* issue 2.4. This issue marks the end of the second year. It's been a fun two years and I look forward to many more as we work to provide a place for publishing work on design of communication. We have a wider, more interdisciplinary umbrella than most of the journals in technical communication and related fields. Besides peer reviewed articles, we're especially interested in more experience reports from industry: summaries of interesting work or study finding that you have encountered and that are of interest to other people. SIGDOC is a mix of both academics and practitioners and it's important that CDQ contains material which bridges the intersections of the two.

We are looking for more columnists, where you would commit to writing a column every other issue—that's only 1000 words every six months. You get to pick the overall column theme. Or, for those with commitment issues, we are also looking for commentaries, essentially a one-off column of about 1000 words on a single topic or issue. Contact me if you are interested in either.

This issue has two peer reviewed articles from Brian McNely and Marie Moeller and a column by Rebekka Andersen. All three reflect the wide ranging topics relevant to CDQ. Topics that we hope are relevant to your own work and which inspire you to write up that work for future CDQ issues.

Hope you enjoy this issue and thanks for reading *Communication Design Quarterly.*

Notes from the Chair

Liza Potts

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As you wrap up your summer projects and activities, I'd like to welcome you to another issue of CDQ! We hope you enjoy what we have planned for this issue, and we would remind you to submit your cutting edge, compelling work that seeks to push the limits of the design of communication as it is practiced and researched. So dust off those seminar papers, polish up those blog posts, and shore up those conference papers. Send us your innovative ideas!

Here at SIGDOC, we have had a busy summer working through peer reviews, planning our conference, and locking down future special issues of CDQ. We are happy to announce that our new Vice Chair, Claire Lauer, is diving into her new role on the executive board. Please be sure to welcome her when you see at SIGDOC 2014. Michael Trice and Dawn Armfield are about to undertake a major redesign of our SIGDOC website. Please keep them in your thoughts as they deal with Wordpress.

Below are some announcements about different activities and projects that your board and SIGDOC volunteers have been working on. We are continuing with our primary goal of outreach and inclusivity: connecting to other organizations in our field, pursuing opportunities to become a more inclusive SIG, and planning for our future. If any of these activities interest you (or you have ideas to share), please fee free to contact us and get involved!

Announcing our 2014 Rigo Award Winner

It gives me great pleasure to let you know that our 2014 Rigo Award Winner is Patricia Sullivan. She was chosen for her outstanding contributions to the field of technical communication, her mentorship of several generations of scholars and practitioners, and her leadership in the Women in Technical Communication group. She is the author of several ground-breaking books,

including *Electronic Literacies in the Workplace* (co-edited with Jennie Dautermann), *Opening Spaces* (co-authored with James Porter), *Professional Writing Online* (co-authored with James Porter and Johndan Johnson-Eilola), and *Technology, Labor, and Writing* (co-edited with Pamela Takayoshi). Dr. Sullivan will give our keynote address at SIGDOC 2014.

Women in Technical Communication Breakfast at SIGDOC 2014

As part of our co-sponsorship of the Women in Technical Communication group, we will be hosting a networking breakfast during the morning of the first day of our conference (September 27). Attendance is welcome for all who self-identify as women interested in technical communication. Registration will be available soon on our conference website.

Planning for SIGDOC 2015

We are in the midst of finalizing our conference plans for 2015. Kathie Gossett has agreed to be our conference chair again, with Dawn Armfeld volunteering as our program chair. We are looking for volunteers for our posters chair, graduate student competition chair, and program committee.

If any of these initiatives interest you, please feel free to contact me. We welcome new volunteers, leaders, makers, and participants in our efforts to make SIGDOC a vibrant community of researchers and practitioners.

The Emergence of Content Strategy Work and Recommended Resources

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In my last column, I wrote about the need for a more integrated view of the field of technical communication. I suggested that the more our field is able to collaborate and integrate with other fields that have a stake in content management (CM), the more our field's unique perspectives, knowledge, and strategies will be recognized for the value they add to the CM discourse. This discourse, which includes a collective of industry conferences, publications, blogs, online discussions and workshops and Webinars, focuses a great deal on how best to integrate organizational and user-generated content as well as disciplines and departments, expertise and roles, and business processes and tools.

In this column, I discuss the topic of content strategy, which, in the past few years, has taken center stage in the CM discourse. Content strategy has been generally defined as a systematic plan that describes how content will be created, managed, and delivered. A content strategy maps all aspects of an organization's move to CM, from defining business goals and accounting for an organization's content to developing a company-wide strategy for producing, evaluating, governing, and publishing that content.

After highlighting why content strategy has taken center stage in the CM discourse, I recommend resources on content strategy for anyone interested in learning more about the topic, including possibilities for research and innovative ways to integrate content strategy instruction into a technical communication curriculum. Much of the discussion that follows is adapted from a comprehensive literature review on component content

management that I am working on with Tatiana Batova (currently under peer review).

THE EMERGENCE OF CONTENT STRATEGY WORK

Maturing technologies such as Web 2.0, component CM systems, high-speed networks, and XML-based languages and standards, coupled with the explosion of Web-enabled mobile devices, have made possible what many CM thought leaders have called the next generation of content (Gollner, 2013a & 2013b; Rockley & Cooper, 2012; Wachter-Boettcher, 2012). This content is highly engineered, modular content that is not limited to any "one purpose, technology, or output" (Rockley & Cooper, 2012, p. 52). Its adaptability and portability make it possible for organizations to create more of it, "more quickly, customized for more customers and for more media than ever before" (Rockley, 2010, p. 270). This content, which has been referred to as intelligent content (Gollner, 2013a & 2013b; Rockley, 2010; Rockley & Cooper, 2012; Rockley & Gollner, 2011), allows companies to keep pace with shorter product development cycles. Further, because they can produce more content more often in more languages, companies can better sell their products around the globe. Essential to supporting the complex process of creating and managing large volumes of highly engineered, modular content is a component-based content strategy.

The term *component-based content strategy* emerged in 2009. This is the point at which, wrote Molisani (2013), "content management systems and multichannel publishing gained a foothold in industry" and, consequently, the term content strategy gained recognition "as a needed, full-time, specialized skill or profession" (p. 7). A number of CM thought leaders have since called content strategy a new discipline of practice (Abel & Bailie, 2014; Bailie & Urbina, 2013; Gollner, 2011). This discipline focuses on helping organizations develop and implement a roadmap for creating highly portable and adaptable structured content and delivering that content to multiple channels in multiple formats for varied audiences and purposes. As such, it supports technical communicators' ability to document products that have dozens or hundreds of variations (O'Keefe & Pringle, 2012a).

At the heart of an organization's content strategy is integration. Organizations are increasingly interested in building a framework for managing their expansive content corpus, from marketing to technical to training content. This company-wide focus grows out of the need for organizations to view content as a business asset that builds customer relationships (Bailie & Urbina, 2013; O'Keefe & Pringle, 2012b; Riley, Ames, & Jones, 2013). Some organizations are attempting to build customer relationships through a focus on the total information experience. This focus is in part achieved through content convergence, content customization and personalization, and user participation in content creation (Andersen, 2014, pp. 15-16). The ability to converge content and offer customers customized and personalized content as well as the option to participate in content creation is, to a large extent, what content strategy is all about.

RECOMMENDED RESOURCES

The publications listed here discuss different ways in which content strategy has been defined and described in the literature on component-based content strategy. This corpus of texts includes five trade books, all published since 2012; two special issues of trade magazines; and a wealth of articles posted on CM thought leader blogs. These texts are intended to help organizations think more strategically about their content goals and the processes required to support those goals.

Important to note is the absence of published research on content strategy in the field of technical communication. To date, only two scholarly publications have examined the topic. One articulates the best practices in content strategy and argues that these practices are changing the nature and location of rhetorical work in organizations that produce intelligent content (Andersen, 2014). The other offers a macroscopic view of CM practices in organizations and explains the various tasks that represent an organization's collective effort to develop a content strategy (Hart-Davidson, 2009).

For those interested in learning more about content strategy work in technical communication contexts, I particularly recommend reading *Content Strategy for Decision Makers*, *The Language of Content*

Strategy, and *Managing Enterprise Content*. I also recommend the May 2013 special issue of *Intercom*. These texts offer excellent introductions to this new discipline of practice, and they offer a comprehensive overview of its key concepts, stages, activities, methodologies, tools, deliverables, and roles. Two forthcoming special issues of *IEEE Transactions on Professional Communication*, the first focused on component content management and the second on content strategy, may also be of interest to those interested in learning more about content strategy. Look for the first issue in March 2015 and the second in September 2015.

Trade Books

- Bailie, R., & Urbina, N. (2013). Content Strategy for Decision Makers: Connecting the Dots Between Business, Brand, and Benefits. Laguna Hills, CA: XML Press.
- Abel, S. & Bailie, R. (2014). The Language of Content Strategy. Laguna Hills, CA: XML Press.
- Rockley, A., & Cooper, C. (2012). Managing Enterprise Content: A Unified Content Strategy (2nd ed.). Indianapolis, IN: New Riders.
- O'Keefe, S., & Pringle, A. (2012). Content Strategy 101: Transform Technical Content into a Critical Asset. Scriptorium Publishing Services, Inc.
- Wachter-Boettcher, S. (2012). Content Everywhere: Strategy and Structure for Future-Ready Content. Brooklyn, NY: Rosenfeld Media.

Trade Journals: Special Issues on Content Strategy

- Intercom: The Magazine for the Society for Technical Communication. Special issue on Content Strategy. May 2013
- Bulletin of the American Society of Information Science and Technology. Special issue on Content Strategy. Dec./Jan. 2011

Research Articles/Chapters

- Andersen, R. (2014). Rhetorical Work in the Age of Content Management: Implications for the Field of Technical

Communication. Journal of Business and Technical Communication 28(2), 115-157.

- Hart-Davidson, W. (2009). Content Management: Beyond Single-sourcing. In R. Spilka (Ed.), Digital Literacy for Technical Communication: 21st Century Theory and Practice (pp. 128-144). New York: Routledge.

Articles on CM Thought Leader Blogs

- Abel, S. (2011, April 7). Ready for the world: Is your content strategy global ready? *The Content Wrangler*. http://thecontentwrangler.com/2011/04/07/ready-for-the-world-is-your-content-strategy-global-ready
- Abel, S. (2013, July 29). Content strategists must become engineers of content-driven customer experiences. *The Content Wrangler*. http://thecontentwrangler.com/2013/07/29/content-strategists-must-become-engineers-of-content-driven-customer-experiences/
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- Bailie, R. (2010, October 14). Content lifecycle: Closing the loop in content strategy. http://johnnyholland.org/2010/10/content-lifecycle-closing-the-loop-in-content-strategy/
- Bailie, R. (2010, June 14). Content strategy: The skills conundrum. http://intentionaldesign.ca/2010/06/14/content-strategy-the-skills-conundrum/
- Bailie, R. (2010, June 16). Skills to transition to content strategy. http://intentionaldesign.ca/2010/06/16/skills-to-transition-to-content-strategy/
- Bailie, R. (2010, June 11). Abilities and aptitudes for a content strategist. http://intentionaldesign.ca/2010/06/11/abilities-and-aptitudes-for-a-content-strategist-2/
- Gollner, J. (2010a, December 5). About content strategy. http://www.gollner.ca/2010/12/about-content-strategy.html

- Gollner, J. (2012, August 2012). The accidental content strategist. http://www.gollner.ca/2012/08/accidental-content-strategist.html
- Gollner, J. (2013, October 11). Product content strategy. http://www.gollner.ca/2013/10/product-content-strategy.html
- Lundin, J. (2011, January 25). Do we need a content strategy? In pursuit of the ultimate techCom information architecture. http://dita.xml.org/blog/do-we-need-a-content-strategy
- O'Keefe, S. (2014, April 28). Ten mistakes for content strategists to avoid. http://www.scriptorium.com/2014/04/ten-mistakes-for-content-strategists-to-avoid/
- Pringle, A. (2014, March 17). Tools, the content strategy killers. http://www.scriptorium.com/2014/03/tools-the-content-strategy-killers/
- Swisher, V. (2012, August 4). Content strategy goes global. http://www.contentrules.com/blog/content-strategy-goes-global/
- Swisher, V. (2013, November 9). The content strategy terminology problem. http://www.contentrules.com/blog/the-content-strategy-terminology-problem/
- Urbina, N. (2010, October 13). Developing a content strategy. http://urbinaconsulting.com/2010/10/13/developing-a-content-strategy-2/
- Urbina, N. (2011, April 8). When content strategies collide: Marketing vs technical communication. http://urbinaconsulting.com/2011/04/08/when-content-strategies-collide-marketing-versus-technical-communication-2

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Rockley, A. & Gollner, J. (2011, December/January). An intelligent content strategy for the enterprise. *Bulletin of the American Society for Information Science and Technology 37(2)*, 33-39. Retrieved from http://www.asis.org/Bulletin/Dec-10/Bulletin_DecJan11_Final.pdf

Rockley, A., & Cooper, C. (2012). *Managing enterprise content: A unified content strategy* (2nd ed.). Indianapolis, IN: New Riders.

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Knowledge Work, Knowledge Play: A Heuristic Approach to Communication Design for Hybrid Spaces

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Abstract

Everyday spaces and places are increasingly experienced as hybrid—as a confluence of material and informatic possibility—thanks to the ubiquity of always connected mobile devices and robust sociotechnical networks. For example, the interiors of many contemporary vehicles are personal area networks that move with drivers through daily commutes, connecting them to their phone's text messages and social networks in and through the material space of their car. In such cases, communication flows strongly mediate people's experiences in, movements through, and perceptions toward spaces of work, learning, and leisure. This article explores such hybrid spaces from the perspective of communication design, offering a heuristic approach to user experience in a world where spaces are often crosshatched and multiple. This exploration focuses on the kinds of tools and practices common to knowledge work and its recent extensions into forms of knowledge play, where the means of knowledge work are coordinated and transformed for non-work pursuits. This article, then, presents a practical, persona-driven perspective on the relationships between communication flows and hybrid spaces, challenging design of communication researchers and user experience professionals to rethink the everyday combinations of symbolic action, knowledge work tools and networks, and mundane locations and movements.

Introduction

At lunchtime on a warm spring day in the financial district of a major metropolitan city, a 34 year-old bank manager peers into a handheld device from behind large black sunglasses. She paces an area of perhaps 15–20 feet along a minor side street near the intersection to a busy avenue, glancing occasionally at passersby. After a few minutes, she removes another handheld device from her clutch: now in her left hand is a smartphone, in her right, a global positioning satellite receiver. She glares from the former to the latter several times, facing away from sidewalk traffic. She places the GPS receiver into her clutch and casually, inconspicuously runs her right hand along the top rail of a waist-high, decorative black metal fence separating the sidewalk from a community garden. Her hand stops. She removes a tiny black container from the fence railing; the container was attached by a magnet, and is the size of a large medicine capsule—just large enough to hold a tightly rolled slip of paper. Discreetly, she snaps a photo of the container, held between her index finger and thumb. Others will not notice, but she is elated—she has been attempting to find this geocache during her previous two lunch breaks, with no luck.

Geocaching is a recreational activity similar to treasure hunting. Geocachers create and cleverly hide containers in both urban and rural environments, all around the world. After doing so, they create cache names and descriptions and upload this information, along with coordinates in latitude and longitude, to a public website accessed by other geocachers. The activity of geocaching is less important to this article than acknowledging the value of play and invention in user experience, and the practices, tools, and spaces engaged by geocachers and participants in many other everyday activities. Geocaching uses the tools of contemporary knowledge work for a kind of knowledge play, weaving together practice with sophisticated computing devices and applications, rich and varied forms of visual and written documentation, community-generated advice, hints, and grievances, and social media in several forms. Following the flow of communication in an activity such as geocaching moves design of communication contexts and research into hybrid spaces—material environments

that are changed or even invented through their combination with symbolic means, artifacts, and the technologies that enable their circulation. Hybrid spaces, moreover, are ubiquitous—our cars, homes, and everyday public spaces are increasingly networked and mediated by informatic possibility. As an overarching example, geocaching brings such hybridity into relief, but the growth of hybrid spaces—and the implications they carry for designing information in such contexts—is an area that communication designers will need to understand if they are to effectively craft information for these new environments.

In this article, I explore the extension of knowledge work into knowledge play, as more people, from more walks of life, work with the kinds of communication flows that were very recently limited to knowledge workers. This exploration focuses on the kinds of tools and practices used by the bank manager as a means for exploring a broader, complementary concern: transformations in the spaces and places of knowledge work and play that result from emerging forms of communication and connectivity. In this way, I present a practical, persona-driven perspective on the relationships between communication flows and hybrid spaces, and I offer a heuristic approach to communication design for such spaces. A heuristic approach offers a set of theory-driven questions or lines of inquiry for understanding a complex problem. Yet these lines of inquiry are also malleable and generative, giving communication designers wide leeway to make practice-based adjustments within the heuristic framework proposed. This article, therefore, may help design of communication researchers and user experience professionals to rethink and better plan for everyday combinations of symbolic action, knowledge work tools and networks, and mundane locations and movements. It does so by exploring several examples from contemporary hybrid spaces and activities where aspects of the heuristic framework are applied to potential communication design problems. More important, this article may help us see everyday spaces differently—as potentially crosshatched and fertile for new forms of communication design.

I begin this exploration with a review of key developments in knowledge work and its recent extension into forms of knowledge play. I then draw from scholarship in human geography and

technical communication in order to bring together and articulate these two diverse perspectives on communication flows, everyday spaces, and the emerging prevalence of knowledge work tools in everyday life. Doing so offers a perspective that communication and user experience designers might deploy in rethinking the communicative potential of everyday places, while also expanding on Swarts and Kim's (2007) notion of hybrid spaces. Next, I describe a heuristic approach to designing communication experiences for knowledge work and play in contemporary hybrid spaces. I then return to geocaching in order to provide an extended example of the heuristic in action, while also suggesting other communication design contexts and problems where the heuristic might be productively deployed. Finally, I suggest some of the most important implications of these ideas for design of communication research and experience architecture. Through this approach, readers will gain a better understanding of hybrid spaces and the challenges and opportunities they present to communication design.

Review of Literature: Knowledge Work, Knowledge Play

As Hart-Davidson (2013a) has recently argued, tools, technologies, and practices that were once used almost exclusively by experts in highly technical fields are now embedded in our everyday lives in a variety of contexts—for work, learning, and leisure. Similarly, Mehlenbacher (2010, 2013) has argued that distinctions between work, leisure, and learning have blurred. The motility of information through devices such as smartphones, GPS receivers, near-field communication chips, radio frequency transponders (RFIDs), and wearable computing devices is but one component of our emerging technological infrastructure. Indeed, activities such as geocaching become interesting primarily because of the complementary movements of *people* through the sociotechnical fabric of everyday spaces. In the previous example of geocaching, an unremarkable intersection becomes a space of communication flows that literally alter—at least for one bank manager—the reality of place. The seemingly innocuous bars of a garden fence become a mechanism and medium for exchanging technical information.

The flow of communication through a variety of modes, media, enabling devices, and networks creates a fissure in the façade of the bank manager's everyday reality. In other words, a second reality exists on the side street simultaneously—a crosshatched, hybrid space accessible only to those aware of and able to use the tools and technologies necessary for finding it. Geocaching thus repurposes the tools of knowledge work for knowledge play.

Conceptualizing Knowledge Work in Communication Design

The concept of knowledge work gained currency in fields related to communication design in the late 1990s and early 2000s; its roots are in the notion of symbolic-analytic work developed by Reich (1992), Secretary of Labor under U.S. President Bill Clinton from 1993 to 1997. Johnson-Eilola (2005) and Swarts (2007), for example, both invoked symbolic-analytic work as a precedent for what is now more commonly described as knowledge work. As Johnson-Eilola explained, the contexts of symbolic-analytic work immersed professionals "within information, filtering, rearranging, transforming, and making connections to address specific, specialized problems" (2005, p. 19). Selfe (1999) argued that Reich's ideas supported the Clinton Administration's push for the National Information Infrastructure (NII). Symbolic-analytic work, for Reich and the NII, focused on the types of information economy skills that would be necessary in the 21st Century workforce. Johnson-Eilola connected symbolic-analytic work to communication design when he suggested that "symbolic analysts are people we might think of as *technical rhetoricians* working in the datacloud" (p. 19, emphasis in original).

Knowledge work theory and practice has received increased attention since 2005, buoyed by research in professional and technical communication, computer-supported cooperative work, and management studies (Spinuzzi, 2006; 2007). Spinuzzi (2006) defined knowledge work as "work in which the primary product is knowledge, information that is continually interpreted and circulated across organizational boundaries" (p. 1). He argued that knowledge work in organizations is often practiced through heterogeneous networks in distributed arrangements as opposed to more modular hierarchies (2006). Indeed, a key component of knowledge work is its distributed character. Knowledge workers

coordinate and transform information flows from sources that are stretched across potentially divergent geographies, cultures, and disciplinary and professional domains. The distributed qualities of knowledge work thus privilege continual coordinations and transformations (Hart-Davidson, 2013a) that enable assemblages to emerge, stabilize, and become embedded across domains and practices of contemporary work activities (Spinuzzi, 2007).

Knowledge Work, Knowledge Play

As Hart-Davidson (2013a) makes clear, communication is the province and currency of nearly everyone in knowledge work organizations. In knowledge work, more people are communicating in more genres and modalities, across diverse spaces of activity, and through a range of networks, devices, and applications. The smooth and effective flow of communication in knowledge work organizations is a palpable concern. Moreover, the distributed character of knowledge work means that communication flows through new spaces and actors. Spinuzzi's (2012) research on coworking and Jones's (2014) analysis of network switching in the microblogging service Twitter are but two recent examples of work that considers communication flow through such novel spaces and actors. For communication design professionals, surfacing and tracing communication flows in knowledge work may reveal where, when, and how such flows are most effective, and where, when, and how such flows are dammed. And with this understanding comes the ability to design more effective communication experiences to pace the nuances of knowledge work.

Following communication flows has already taken design of communication research into new spaces of knowledge work. This can be seen most clearly in studies of alternative workspaces (Pigg, 2011; Spinuzzi, 2012), social media (Ferro, Divine, & Zachry, 2012; Jones, 2014; Potts & Jones, 2011; Spinuzzi, 2009; Stolley, 2009), and in the design and evaluation of mobile experiences (Borges, Filgueiras, Maciel, & Pereira, 2013; Costa, Silva, & Aparício, 2007; Racadio, Rose, & Boyd, 2012). In contemporary knowledge work, professionals are potentially immersed in communication flows wherever they travel—at the coffee shop, walking the dog, or at their children's soccer match. In other words, the *workspaces* of

knowledge workers potentially move as professionals move. But a concurrent trend is equally as important: the communication flows and technologies of knowledge work are increasingly embedded in non-work activities. The typical geocacher, like the typical knowledge worker, is immersed "within information, filtering, rearranging, transforming, and making connections to address specific, specialized problems" (Johnson-Eilola, 2005, p. 19). And the typical geocacher is immersed in potentially extraordinary material spaces as well—non-work spaces that become real and tangible only when everyday realities are transformed by new or alternative communication flows.

In geocaching and other kinds of alternate reality experiences (gaming or otherwise), the types of tools, networks, devices, and practices typical of the knowledge worker are extended toward forms of knowledge play. In knowledge play, sociotechnical networks, sophisticated devices, and communication flows are coordinated and transformed to achieve leisurely ends in (largely) non-work environments. Knowledge play also carries an additional meaning: "Play" connotes movement or action, and in this sense, the practices of knowledge work "play out" in new ways. Even more important: The *same* communicative devices, applications, and networks often mediate both knowledge work and knowledge play. As such, contexts between work and leisure collapse. Relationships between colleagues, friends, acquaintances, and online contacts may likewise become blurred. On her lunch break, the bank manager may use her smartphone to answer an urgent work email, exchange text messages with a friend, respond to a potential client through a service such as LinkedIn, and read the most recent logs for the geocache she is trying to find, all while walking through the financial district of her city. Knowledge work and play are interwoven, and the spaces in which such activities occur are hybridized—part work, part play, and continually embedded in and through everyday movements and mobile devices within one's material environment. In the following section, I explore these hybrid spaces in more detail.

Articulating Hybrid Spaces

Spinuzzi defined hybrid genres as those that result from new combinations of older genres and (often) emerging technologies; through hybridization, these genres retain something of the history of their predecessors (2003, p. 66). Because they carry along such histories, hybrid genres include many of the affordances and expectations of older genres so that people using the resulting hybrid genre may see little change (p. 66). For example, the "notes" application on a typical smartphone or tablet may replicate the design logics of the pen-and-paper notepad (this is known as *skeumorphism*). And yet, even though these new genres seem stable and familiar, they may bring *both* previous affordances and new affordances into practice. For design of communication contexts, the logic of hybrid genres extends to hybrid spaces in important ways.

A hybrid space may look the same as always—as the fence does to people passing by the bank manager—but it carries new affordances for transformed interactions. In their discussion of hybrid spaces, Swarts and Kim (2007) argued that new forms of literate action—new communication flows—may emerge from and participate in the reconstruction of knowledge work environments (that is, the material spaces where knowledge work happens). In this section, I bring together work in human geography and technical communication as a way of articulating foundational perspectives on communication flows, everyday spaces, and the emerging prevalence of knowledge work tools in everyday life. I also review literature on the spaces of knowledge work and then explore the definition of hybrid spaces posited by Swarts and Kim by expanding that definition via broader conceptions of space and place formulated by scholars in human geography. Finally, by drawing from Law's (2002) notion of fluid space, I consider hybrid spaces in light of contemporary communication flows. Through examining these items, I articulate commensurate views on space with the goal of exploring how hybrid spaces are themselves articulated—in the sense of being joined together and combined—in contemporary knowledge work and play environments.

Hybrid Spaces of Knowledge Work

Research in computer supported cooperative work has shown that shared spaces lead to improved organizational coherence and effective collaboration. For example, Kraut, Egido, and Gallegher (1990) found that collocation in physical spaces helps shape shared intellectual spaces as well. Additional studies by Kraut, Fish, Root, and Chalfonte (1993), Johnson, Donohue, Atkin, and Johnson, (1994), Whittaker, Frohlich, and Daly-Jones (1994), and Nardi (2005) indicate the importance of informal communication in shared space to interpersonal work relationships. Nardi and O'Day (1999) extend these ideas further still when they suggest that "it is in *the spaces between things*—where people move from place to place, talk, carry pieces of paper . . . that critical and often invisible things happen" (p. 66; emphasis in original). This idea—that the spaces between more recognizable material structures (offices, conference rooms) and genres (official documentation) is crucial to work and collaboration—is in fact more pronounced in knowledge work and play. As we have seen, contemporary knowledge work is distributed and mediated by communication flows in spaces where face-to-face, informal hallway talk may not be possible (e.g., when distributed team members are separated by different time zones or wide geographical distances). Notions of proximity and "the spaces between things" shift, therefore, to genres and networks of in-between (or interstitial) communication that move with knowledge workers as they move.

More important, these genres and networks potentially alter our broader, everyday understandings of space and place, hybridizing knowledge work and play environments by removing or reimagining the bounds of physical space altogether. Put simply, the hallway talk and informal exchanges in our movements between recognizable spaces of work or leisure regulary flow through devices that move with us, potentially changing our conceptions (and affordances) of space and place. Swarts and Kim (2007) defined hybrid spaces as "meshed" locales where the symbolic and the material are hybridized, where "information is not only a commodity; it is a frame on the world around us" (p. 212). Hybrid spaces are thus continually written and rewritten; they are adaptive to the movements of particular people at particular

times (p. 212). Knowledge work and play in hybrid spaces is therefore characterized by continual movement and oscillation (Mol & Law, 2002)—of people, networks, places, and information. Knowledge workers have adapted to an emerging "ambient awareness" (Spinuzzi, 2009; Thompson, 2013) of personal and professional relationships as a function of continuously connected devices and networks in hybrid spaces. Our understanding of knowledge work and play in hybrid spaces is tied to our ability to recognize, design for, and manage these continual movements and oscillations. I turn next to perspectives on place and space from human geography as a way to expand upon the notion of hybrid spaces.

Expanding Hybrid Spaces via Human Geography

Tim Cresswell (2004), a geographer, argued that the notion of place is misunderstood; because place is a concept that has well-established commonsense attributes and uses, there is considerable confusion over precise definitions (p. 1). He suggests that places in general are fraught with "the hauntings of past inhabitation" (p. 2). As we have seen, past and present "hauntings" characterize both hybrid genres and hybrid spaces. Cresswell also foregrounds an additional misunderstanding: the relationship between place and space. This relationship has been perhaps most famously delineated by Yi Fu Tuan (1977):

> The ideas "space" and "place" require each other for definition. From the security and stability of place we are aware of the openness, freedom, and threat of space, and vice versa. Furthermore, if we think of space as that which allows movement, then place is pause; each pause in movement makes it possible for location to be transformed into place. (quoted in Cresswell, 2004, p. 8)

In sharp contrast to this perspective, Doreen Massey has argued that, rather than material locales, places should be seen as *events*, as a "simultaneity of stories-so-far" (2005, p. 130). Taken together, Tuan's and Massey's perspectives on place foreground both fixity and movement, both materiality and communication flow. Both places and spaces—and particularly hybrid spaces—are predicated upon, enacted in, and constituted through the movement and

oscillation of people and their communication flows, even in ostensible moments of pause.

Movement in seemingly static places is central to another influential discussion of space and place in human geography, Massey's "A Global Sense of Place" (1994). Cresswell describes Massey's argument as "a new conceptualization of place as open and hybrid—a product of interconnecting flows—of routes rather than roots" (2004, p. 13). Massey (1994) notes that the concept of time is often "equated with movement and progress" while space and place are "equated with stasis and reaction" (p. 151). Much of her argument rejects this characterization as she responds to globalization and nascent information flows. She argued that places are "absolutely not static" and can be "conceptualized in terms of the social interactions which they tie together," interactions that are themselves shifting (p. 155). Places, for Massey, do not have stable, single, or unique identities (p. 155) and are already multiple, mixed, hybrid, and dynamic (p. 156). Seen this way—and especially within the context of contemporary knowledge work and play—place seems to be anything but pause.

Mol and Law's (2002) perspective may be applied to contemporary hybrid spaces and is congruent with Massey's focus on openness and movement. They argue that "we are living in two or more neighboring worlds, worlds that overlap and coexist" (p. 8). In knowledge work and play, these crosshatched worlds—simultaneously material and informatic—are coterminous and mobile: They move when we move. This kind of radical, crosshatched multiplicity reflects simultaneous and multiple existences in a given place and time (p. 8). As the combinations of stories-so-far shift and hybridize, spatial and informatic multiplicities emerge. These ideas about hybrid and multiple places, predicated upon the movement of people and information, help expand Swarts and Kim's (2007) definition of hybrid information spaces. Swarts and Kim argued that "our attention and our experience are distributed over both the material and information spaces that we simultaneously inhabit" (p. 214). In knowledge work and play, these multiplicities foster the increased "importance of and possibilities for rhetorical action" (p. 217), and

therefore an increased role for communication design and user experience in mediating everyday practices.

To summarize, in hybrid spaces, multiplicity is found in—and experienced through—interconnecting and multidirectional communication flows layered on top of (and increasingly within) materiality. The movement of people through Wi-Fi and cellular-enabled environments with sophisticated mobile computing devices highlights the dynamic movement of knowledge—not just as commodity or a thing to be consumed, but as a new way of apprehending and reformulating our understanding of the world. Our ability to grapple with the continual and complex movement that characterizes hybrid spaces affects the ways in which we make new knowledge out of the communication flows that permeate our work and play in everyday life. By bringing together scholarship on knowledge work from technical communication with work in human geography, we can see how intimately our notions of space and place are tied to (and reshaped by) communication flows.

Hybrid Spaces, Fluid Spaces

Hybrid spaces, as we have seen, are extraordinarily complex. In hybrid spaces, participants in knowledge work and play may follow the logic of the *flâneur*—one whose understanding of place is derived from immersion and exploration, continually wading in and out of material–informatic environments, grasping knowledge, reframing knowledge, and passing fragments of that knowledge along to others. These communication flows are essential to the creation of hybrid space because they may literally reframe understandings of ordinary material environments. As Swarts and Kim argued, knowledge workers use communication to build the very hybrid spaces in which they interact (p. 219). The knowledge worker/player as *flâneur* must especially be attuned to the flow of information found in the interstices of hybrid spaces, those communication activities that may have been previously informal, ephemeral, and largely invisible in broader organizational and everyday discourses (see McNely, 2011). Following these flows is crucial because, as in traditional workplace environments, these are moments of potential action, knowing, and identity formation—digital counterparts of hallway talk and "in between" commiseration. Following Law (2002), we might productively view

these interstices as *fluid spaces* (i.e., spaces that have characteristics which differ from traditional conceptions of material and communicative possibility), with very different affordances than Euclidean and network spaces.

Law grounds his discussion of fluid space in Latour's (1987) concept of the immutable mobile, where "objects hold their shape" even when they move as an array or assemblage, passing "down or through a network" (2002, p. 93). A land survey (and the bureaucracy that sanctions it), for example, may be an immutable mobile; it governs the dimensions and potential uses of a given location or plot of land through various forms of technical and networked documentation, and it passes from one owner of the location to the next, continuing its mediations until it is reshaped by new laws and attendant forms of documentation. Relations and alliances among material–informatic collectives—often constituted in and by communication flows—hold such objects and spaces together (p. 95). Moreover, these objects and assemblages may be "spatially multiple"—that is, they inhabit Euclidean (three-dimensional) and network space simultaneously (p. 95). According to these ideas, mobility—movements of people and information in concert—becomes possible because of the immutability of network space (p. 96). But fluid objects, and fluid spaces more generally, "lie beyond the conditions of network possibility" (p. 100). In fact, "fluid work is *invisible*" and flows "through the meshes of the network" (p. 101, emphasis in original). Law argued that when fluid objects are made visible "they tend to look dangerously *elusive*, *vague and sloppy*" (p. 101-102, emphasis in original). We're often uncomfortable when fluidity and multiplicity seep through our assured understanding of everyday reality.

Hybrid and Fluid Spaces in Practice

Returning to the example of the bank manager for a moment may help us practically envision the theoretical constructs that Law proposes. One week after logging her geocache the bank manager finds herself once again walking through the area—a known hybrid space—on the way to meet with a potential client for lunch. As she passes by, she relishes knowing that along this fence exists an open secret, a space hidden in plain sight that she has already uncovered and explored. Because of her knowledge play, this

hybrid space is, to her, both mundane and extraordinary, a crosshatched, in-between fold where "neighboring worlds … overlap and coexist" (Mol & Law, 2002, p. 8). Since she has a few minutes before her meeting, she decides to stop and check on the cache. She no longer needs her GPS or her smartphone app to find it. Yet when she reaches for the cache, she discovers that it is no longer where she assumed it to be. She retraces her steps to see if another geocacher accidentally placed it in a different location. Despite several minutes of hunting she concedes; the cache is gone. As she walks to her meeting, she scans recent logs for the geocache on her smartphone. Since her successful log the week before, three other geocachers have logged the cache DNF—did not find.

What happened to the cache? Answering this question can yield insights about the visibility of fluid objects in hybrid spaces. One day after her find, the geocache was unintentionally disturbed. A member of the community garden, using a broom to sweep a path, decided to also sweep some dust and cobwebs off of the decorative metal fence. In doing so, he knocked the little geocache loose and onto the inner edge of the sidewalk. Over the next two days, pedestrians stepped near, on, and around the tiny black container. To those for whom the object even registered, it appeared elusive (What is that little thing?); vague (Did a piece of the fence break off? Is that a part of someone's bike?); and sloppy (The community gardeners should do a better job of keeping this area clean). Eventually, the cache is inadvertently kicked into the gutter by pedestrian traffic, and swept away by a street sweeper. In this process, the once hybrid space—the little crosshatched world—became doubly invisible. It *remained* invisible as a site of possibility to the non-geocaching passersby, for whom the hybrid space never even existed, but it also *became* invisible to the frustrated geocachers who could not locate the displaced cache. Once knocked loose, it became a *fluid object*, and it fell through the meshes of both network and material spaces.

An expanded understanding of Swarts and Kim's notion of hybrid space, coupled with Law's perspective on fluid spaces and objects may seem esoteric, but they describe circumstances we encounter repeatedly in knowledge work and play. As I discuss in the following sections, designing communication for hybrid spaces

involves attending to the new possibilities created through the combination of knowledge work tools, everyday movements, the collapse of work and personal contexts, and the hybridization of networked and material spaces. As a consequence of these changes, we must be aware of and attend to the potentially fluid objects and communication practices that may fall through the meshes of network and material space. For a knowledge work team, this may mean acknowledging and better accounting for in-between forms of communication (such as instant messaging or informal social media participation) that help mediate official forms of organizational discourse. For knowledge play experiences, this may mean coordinating ideas, people, and movements that are seemingly disparate and unconnected, and making transformations across material and network spaces that are visible to some and invisible to others. For communication design professionals, therefore, these ideas necessitate a practical need for new questions and new perspectives on the spaces and places of user experience. I turn next to a heuristic approach to communication design for hybrid spaces.

"Things used in unintended ways": A Heuristic for Hybrid Spaces

In *Thoughtless Acts?: Observations on Intuitive Design*, Jane Fulton Suri argued that "things used in unintended ways … usually indicate something about people's needs" (2005, p. 164). As an anthropologist with design firm IDEO, Fulton Suri explored the seemingly intuitive ways in which people react to, take inspiration from, adapt to, and exploit everyday environments in concert with their needs. These acts are "thoughtless" only in the sense that people often do them instinctively. The book is an argument for concerted *looking*. Through a series of interrelated photo essays Fulton Suri explores practices of reacting, responding, co-opting, exploiting, adapting, conforming, and signaling in everyday environments. For example, a young man bends at the waist so that an older man can use his back as a temporary writing surface (p. 93). A man uses a rucksack as a pillow while lying in a park (p. 22). A napkin is folded into a triangle so that its owner can cleanly cradle a handful of pistachios (p. 119). The claw end of a hammer is

used as a door stop (p. 106). These scenes from *Thoughtless Acts?* come together to form an extended *heuristic* for interaction and user experience designers. The photo essays are meant to prompt design professionals to rethink mundane human needs, behaviors, and the participation of nonhuman artifacts—and in the process, to rethink approaches to everyday design problems. In this section, I follow Fulton Suri's example and propose a heuristic for communication design in hybrid spaces that focuses on potential acts and reactions.

A Heuristic Approach to Communication Design for Hybrid Spaces

In their introduction to *Solving Problems in Technical Communication* (2013), Johnson-Eilola and Selber describe the logic of heuristics, which are frameworks for approaching specific kinds of problems or communication scenarios (para. 11). Heuristics do not provide specific answers, but instead offer "tentatively structured procedures for understanding and acting in complex situations" (para. 11). And heuristics are malleable and adaptive—they are recursively adjusted as they are applied and evaluated in particular contexts of use. Such adaptations are part of what Jonhson-Eilola and Selber describe as a second level of analysis—"revising heuristics and thinking based on theories, which are themselves open to revision" (para. 16). The heuristic that I provide here is intentionally broad; it must be adapted to the specific challenges and communication design contexts of particular (or potential) hybrid spaces. In this way, the heuristic helps design of communication professionals "connect abstract theories to individual, concrete practices" (para. 20). In other words, the heuristic mediates theory and practice. In Figure 1, I suggest a set of specific questions for each of the three interwoven spaces of knowledge work and play—material spaces, network spaces, and fluid spaces.

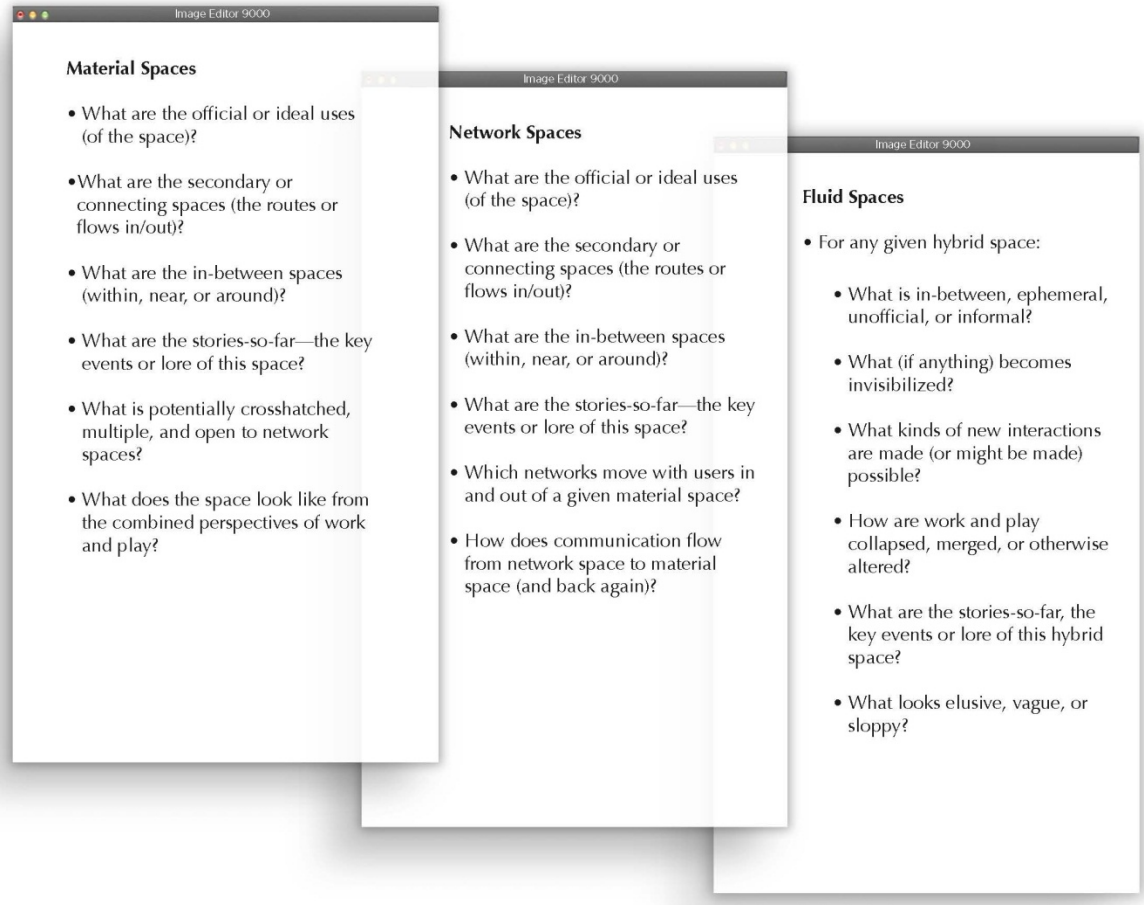

Figure 1. A three-layered (yet composite) heuristic for exploring spaces of knowledge work and play.

Visually, the heuristic is presented as three layers corresponding to the three kinds of spaces encountered in knowledge work and play. Mirroring the workflows of sophisticated design programs such as Photoshop, these layers may be examined separately or as a merged composite. Each layer of space comes with its own unique set of heuristic questions, but application of the heuristic relies on understanding the composite view—how material space merges with network space to form hybrids, and whether any fluid objects or spaces emerge (or "fall through") as a result. By exploring each layer of the heuristic separately, communication designers may think through the affordances and potential uses of communicative tools and technologies in a given material or network space. But

more important, by considering the layers as a composite, communication designers may explore the potentially divergent worlds of work and play that users inhabit simultaneously. The heuristic asks, therefore, how everyday environments are multiple and hybrid, and how users adapt to, exploit, or reframe the material, network, and fluid spaces of (or in between) more recognizable sites of work and play.

Applying the Heuristic

The first layer of the heuristic considers material spaces of knowledge work and play, and the first question asks communication designers to explore the ways in which a given space is seen, approached, and typically used. What are the norms in this space, and how are people expected to behave and interact? The second, third, and fourth questions prompt contextual elaboration: What are the unofficial, informal, ephemeral, overlooked, or unseen facets of the space? Working through these first four heuristic questions—among design teams, with users, or in focus groups—will help bring as many aspects of the current spatial context into relief. The last two questions are trained on potential affordances and uses of the space: Are there possible pockets, folds, alleys, or multiple and dynamic uses in this space? While the space may currently be used in one way for knowledge work, it may carry very different potential affordances for knowledge play. Sometimes a claw hammer can pull nails, and sometimes it can hold a door open. Working through this first layer of the heuristic will help communication designers contextualize the current material space and imagine further potential uses. But this is only the first step.

The second layer of the heuristic focuses on network spaces and moves communication design toward deeper considerations of the hybrid spaces that result from the merger of material and network affordances. While the first four questions are the same as in the first layer, the answers they yield will be very different. Again, the first question is one of intended or designed uses. For example, content strategists might ask how an organizational wiki, as a network space, is typically used and normed. The second, third, and fourth questions, which prompt contextual elaboration, may be more readily apparent when applied to network spaces. How are

communication flows routed into and out of the organizational wiki? What kinds of ephemeral and informal flows find their way into that space and back out again (as grousing on social media, for example)? Most important, the final two questions extend these ideas further by focusing on movements—of users, of communication and information, and of the oscillation between network and material spaces. Swarts and Kim argued that hybrid spaces can form and reform based upon communication flows through network spaces—the readily available information that can alter a given hybrid space (2007, p. 215). When considering these movements and oscillations, communication designers will explore how spaces are hybridized, what hauntings of both material and network spaces persist, and what new affordances emerge in the process. Most important, they'll begin to think about ongoing relationships among users and spaces rather than simply engagements (Hart-Davidson, 2013b).

The third layer of the heuristic explores the potential nuances and consequentialities of hybrid spaces. The first two questions are designed to uncover some of the unofficial and in-between facets of such spaces. In Nardi and O'Day's (1999) example, the spaces between offices, conference rooms, water-coolers, and official communicative genres were identified as important and often invisible sites of knowledge work activity. In considering potentially fluid spaces and objects, communication designers must look carefully for analogues or even new kinds of in-between exchanges. How are things used in unintended ways? These may be one-time or infrequent, mediated by the network, the material space, or both in conjunction, and they may have a profound impact on how the hybrid space is used and perceived. The third and fourth questions invite speculation: what does the hybrid space look like when knowledge work and play are collapsed, and when information oscillates through hybrid contexts? Finally, the last two questions prompt communication designers to consider the objects that both build the hybrid space as a collection of stories-so-far and that might make the space look odd when seen from a static (that is, one-layered) perspective. If fluid objects are obvious, they may need to be mitigated in some way; on the other hand, they may also present new, exciting opportunities for interaction. In the following section, this heuristic is applied to a contemporary hybrid space.

TFTC! (Thanks for the Cache!): An Extended Example

In this extended example, I return to the knowledge play activity of geocaching by drawing on a persona-based exploration of everyday hybrid spaces. In doing so, I discuss applications of the heuristic while walking through one knowledge player's context, communication flows, and perceptions of hybrid space.

Introducing Genevieve: Savvy Knowledge Worker, Novice Geocacher

Genevieve is a teller for a major national bank in a mid-sized American city. She is 39 years old, has a bachelor's degree in sociology, and has been working as a teller for 2 years. Genevieve is a major contributor to her branch—she is outgoing, affable, and a favorite of regular clients—and she routinely leads the district in teller referrals for small business and investment accounts. Contemporary tellers are knowledge workers: Genevieve must understand fluctuating bank rates, general securities offerings, a variety of programs for business owners, money-handling standards, and the full suite of traditional banking products. In addition to the official communication flows of her branch—email, memos, institutional directives, and compliance documentation—Genevieve also frequently communicates with her colleagues via text message, Facebook, and the photo sharing service Instagram, about both work and personal topics, at the branch and on the go. While she doesn't consider herself to be technologically savvy, Genevieve knows enough about the district content management system, popular social media services, and the affordances of her smartphone to be a troubleshooting resource to several of her colleagues.

Genevieve's partner is a geocacher; recently, he found a cache hidden in the parking lot of Genevieve's branch. He has been trying to convince Genevieve to geocache, but so far she has shown only polite interest. When he told her that a geocache was hidden in plain sight of her drive up teller window, she became intrigued. On her lunch break the next day, she downloaded the geocaching smartphone application. After signing up for a free account, she

allowed her phone to determine her location and she used the geocaching app to search for the nearest caches. Sure enough, a cache was hidden just 150 feet from her location in the branch break room. With 10 minutes left in her break, she went outside to search for the cache. A few minutes later, she returned to work slightly confused. She didn't see anything but a chain link fence, a drainage culvert, some overgrown bushes, and the same old parking lot she drives over every day. Moreover, her smartphone's GPS led her to within 25 feet of the supposed cache, but then pointed wildly in the other direction. Despite her setback, Genevieve is determined to make the find. She is not sure yet if geocaching is for her, but she will do whatever it takes to find the cache near her office.

Applying the Heuristic to Genevieve's Nascent Knowledge Play

At this point, we can examine some of the initial questions from the first two layers of the heuristic. Genevieve's bank branch is a material locale for traditional forms of knowledge work. Tellers interact with general customers, they refer clients to investment and small business advisors, they collaborate with a branch manager to meet local and district goals, and they have clear norms for the typical uses of the space (teller windows, advisor offices, a break room, a parking lot). There are in-between spaces, too; tellers often commiserate about a troublesome client in the restroom, glances and body language allow tellers at the drive up window to communicate with one another without others in the office seeing, and the break room sometimes acts as a site of knowledge sharing. Network spaces are prevalent as well. Branch employees communicate constantly via email and the district content management system, and they continue their relationships in network spaces beyond their working environment through social media and text messaging. Indeed, as one of the bank's most important employees, Genevieve often receives text messages from her branch manager before and after working hours. In sum, we can see that both the material and network spaces that shape the branch's activity have official uses, informal and unofficial uses, and several routes of connection into and out of those spaces, often via in-between interactions carried out in both work and non-work

contexts. Understanding complex communication flows in this environment is predicated on exploring these material and network spaces.

More important, Genevieve's attempt at finding the geocache near the office has already begun to affect the branch's stories-so-far—the lore or narrative shared by the employees—one of the next components of the heuristic. Another teller jokingly asked if Genevieve was having a smoke break when she returned to the branch, knowing that Genevieve does not smoke. The teller working the drive through during lunch wondered what Genevieve was doing in the parking lot, looking at her smartphone. To her colleagues, Genevieve uses everyday things (her smartphone) and spaces (the parking lot) in what seem to be unintended (or at least unusual) ways. And the stories that Genevieve has told *herself* about the material and network spaces of her branch have also been subtly altered; she knows now that the space has been expanded in some way, that there are new potentials waiting to be uncovered. The network space of geocaching has moved with Genevieve into the branch, where two very different communities of knowledge work and knowledge play have coalesced for the moment.

Before moving on, it is fair to ask what all of this has to do with communication design. The short answer to that question is simple: our heuristic has led us to explore the meaningful ways in which this typical site of knowledge work is already richly multiple and hybrid as a direct result of communication flows. Employee mobile devices move work beyond the branch and bring play into the branch. Nascent or subtle hybridizations may not visibly register but they are already shaping (and haunting) the affordances of the branch as hybrid space and the character of the site's stories-so-far. The longer answer to the question, however, will become clear by continuing the example and by applying the remaining components of the heuristic.

Oscillations of Knowledge Work and Knowledge Play in Practice

Later that evening, Genevieve tells her partner that she attempted, and did not find, the cache. Part of the problem, Genevieve learns,

is that new geocachers suffer from the fact that they do not know what they do not know. She realizes that it is difficult to identify a hidden space or container when you have not yet seen one. The current stories-so-far about geocaching are, for Genevieve, elusive, vague, and sloppy. Her partner suggests that she visit three network spaces for help: a geocaching community forum, YouTube, and Instagram. In the forum, Genevieve learns more about cache container basics, and about the dynamics of appearing subtle to non-geocachers (also known as "stealth"). On YouTube and Instagram, she watches videos and views photos of the clever kinds of containers and hiding spaces common to geocaching. Her stories-so-far expand rapidly, and her tracing of communication flows through network spaces of knowledge play further changes how she envisions the material space of her bank branch.

Genevieve's partner also explains that the GPS receiver on her smartphone is not as sensitive as a handheld GPS device. He offers his GPS receiver for her use, and gives her a quick tutorial on how best to pair the devices. Finally, he explains that the geocaching application itself carries a wealth of information. By scrutinizing the cache description and name, by viewing the logs of previous geocachers, and by viewing hints that are sometimes available, a stumped geocacher can often separate individual trees from the forest. As in knowledge work, knowledge play comes with a learning curve that may require careful "filtering, rearranging, transforming, and making connections to address specific, specialized problems" (Johnson-Eilola, 2005, p. 19).

Figure 2. Genevieve carefully reading the cache description.

The next day, Genevieve remains in her branch parking lot after it closes, and after everyone has gone home. She is no longer only at work, but in a hybrid space with coexisting, overlapping potentials for work and play. Given what she has learned from the network spaces of geocaching, she remains in her car, looking to passersby like a woman checking emails or messages before leaving work. Inside, however, she carefully reads through the cache description (Fig. 2) and powers on her GPS receiver. A few moments later, she hops out of her car, and as she allows the GPS compass to guide her, she quickly scans recent logs for the cache to see if they provide any useful information (Fig. 3). Unfortunately, there is no hint for this cache, but the GPS compass is clearly pointing her toward the chain-link fence separating the parking lot from what she has always assumed was a simple drainage culvert (Fig. 4).

Figure 3. Genevieve reads recent cache logs while using her GPS for accurate wayfinding.

Figure 4. An ordinary fence post and chain link fence along the edge of the branch parking lot.

Yet because of information found in the network space of her geocaching application, she now knows that the culvert was built to allow the underground movement of Tates Creek through this part of the city. More to the point: when standing next to the fence it is not drainage that she hears and sees, but the flow of the creek that inspired the name Tates Creek Road, where her bank branch is

located. The GPS receiver leads her very near the fence post pictured in Figure 4, and thanks to YouTube videos and Instagram photos, Genevieve has an idea: She turns and wiggles the fence post to reveal a matchstick container glued underneath (Figs. 5 and 6). She has found the cache!

Figures 5 and 6. Genevieve makes the find—uncovering (and making tangible) a new hybrid space.

Opening the matchstick container reveals the log (Fig. 7). Signing the log will provide evidence in material space that she has indeed found this cache, and logging the cache with her smartphone app signals to others in network space that she has made the find. At

this point, Genevieve uses her smartphone to snap a spoiler-free photo of her first find, sharing that photo and a brief caption ("Look at what I found near the office today!") on both Instagram and Facebook. After signing the log, she re-hides the cache and returns to her car. Before driving away, she has two new notifications on her smartphone: a like on her Instagram photo, and a comment on her Facebook post, from one of her colleagues: "What the heck is that?!"

Figure 7. The cache log—material proof that Genevieve has uncovered this hybrid space.

Applying the Heuristic to the Hybrid Spaces of Genevieve's Everyday

At this point, we may work in two important directions simultaneously—exploring the last layer of the heuristic while also considering what the composite view of this extended example can teach us about communication design in knowledge work and play environments. The hybrid, liminal space of the geocache is clearly an ephemeral, unofficial, in-between pocket of knowledge play in what is, from the outside, a material locale of knowledge work. But we can also see, by exploring questions 2, 3, and 4 of the heuristic's third layer, that there are many more in-between interactions and spaces made possible through hybridization, and through viewing the space from the composite perspective. For example, Genevieve's find is mediated by communication flows in network

space that helped her reenvision the material space of the parking lot, fence, and drainage culvert. In other words, this experience was inventional and ontologically substantive. In the hours after her find, these communication flows will likely remain invisible to her colleagues; at the same time, some of aspects of the hybrid space are leaking through, since Genevieve posted a photo of the log to Facebook and Instagram. In these network spaces, where knowledge work and play coalesce, Genevieve begins to transform how *her colleagues* see their everyday environment.

In follow-on comments to her Facebook post, Genevieve explains how Tates Creek literally runs underneath her bank branch, and underneath its namesake, Tates Creek Road. Of those following the Facebook thread, only one of her colleagues, a lifelong resident of the city, knew this bit of history. The stories-so-far of one knowledge work community and locale have been subtly altered, its lore forever changed. From the perspective of communication design, we can see how discussion—both online and in-person the following day—of the hybrid space of the geocache has literally restructured the local understanding of material reality, even if Genevieve never actually explains geocaching or reveals the hide (beyond her spoiler-free photo). As Swarts and Kim (2007) intimated, this is what hybridization *does*; the composite view of this everyday space reveals complex multiplicities, oscillating communication flows, the collapse of work and play, and new possibilities for future interactions. The hybrid space looks different because the perspectives of work and play have merged: the bank parking lot, chain link fence, and (former) drainage culvert—in the composite view—emerge as a hybrid space of multiple, crosshatched potentials. The layering of rhetorical invention, local histories, personal and professional interactions in material and network spaces, and the tools, technologies, and practices of knowledge work and play are assembled and enacted in and through communication flows.

Finally, the heuristic asks us to consider what is potentially elusive, vague, or sloppy in the hybrid spaces of this bank branch. Most obviously, knowledge play has informed knowledge work through communication flows, reconfiguring both individual and collective understandings of the material locale. The tellers and advisors in

Genevieve's branch are now aware of the (literal) fluid space of Tates Creek beneath them, however vague that understanding may be; Genevieve has material knowledge of a hidden fold in everyday reality that she can see from her teller window; and her contacts on Instagram and Facebook are at least partially aware of something interesting hidden near her place of work. But let us assume that none of her colleagues become geocachers themselves, and thus none ever truly know the exact location of the cache (they would remain known, in geocaching parlance, as "muggles"—non-geocachers). Perhaps one day, when working the drive-through window, a colleague sees someone suspiciously lingering around the chain link fence. Perhaps they even see this person gripping and twisting the fence post, their actions and intentions elusive, their movements stealthy. In such instances, the geocache is essentially a fluid object for Genevieve's muggle colleagues, a vague and sloppy fissure in everyday reality. In this example, the fluid object need not be mitigated in any way—it exists for Genevieve as a known unknown artifact of communication design (that is, the fluid object is known to her *as an unknown* to muggles), and that understanding of reality is stable unless the crosshatch is dehybridized or breached in some way.

Implications for Communication Design

Everyday hybrid spaces will not always be as ingeniously and cleverly crosshatched as those of geocaching, and yet often they may be even more so. Sometimes such spaces become clear in cross-cultural contexts. In Japan, for example, city blocks, rather than streets, have names. Streets are the nameless spaces and routes in-between blocks. Sometimes hybrid or interstitial spaces become apparent because of new agents and actors moving through material and network spaces. Jan Chipchase (2013) wonders where autonomous objects (think of robotic vacuums or wheelchairs) live when they are not in use. Applying the heuristic, we know that such objects live in hybrid spaces—material locales mediated and conditioned by network effects. Mundane and banal hybrid spaces of many kinds are already here, products of communication flows and the participation of material and spatial affordances. And the interstitial or in-between routes and spaces for the contemporary

communication flows of knowledge work and play are proliferating rapidly. As a result, hybrid spaces are likewise proliferating, and will soon be commonplace. Communication and user experience designers and researchers have a tremendous opportunity to create and explore new kinds of interactions that embrace and enact these crosshatched realities of contemporary life.

In this section, I offer three additional scenarios where hybrid spaces of contemporary communication design may be explored, and where aspects of the heuristic may be productively applied to both research and design. In each scenario, I sketch the basic communication design context, apply the most salient aspects of the heuristic, and briefly describe some potential effects of applying the heuristic in research and design.

Hybridizing Urban Planning

For the typical citizen, zoning laws, urban planning policies, and political districting decisions are opaque. Yet these decisions (and communication flows about them) may have significant effects on the everyday lives of ordinary people, particularly when areas of a given city are subject to new zoning laws, new developments, or redistricting. Imagine a mid-sized city in the United States, where a grant has provided the mayor's office with funds to better deliver digital content about the city, and to better engage and sustain relationships with a broader contingent of citizens.

A team of user experience designers, urban planners, technical communicators, and city council members envision a mobile application that will provide details about the city as residents move through it—an augmented reality experience that delivers relevant information based on spatial proximity and orientation. The mayor's office has a list of communicative "givens" that provide basic information layers with which to start: school locations and ratings, business and community locales, hospital and elder-care locations, voting districts, zoning, and planned developments, among others. By consulting the heuristic, the team recognizes that the design of the application's network space will be a function of the material space in which a user finds herself at any given moment. They focus, therefore, on the first layer of the

heuristic, where exploring the stories-so-far about a given zoning or political districting region provides opportunities in network space for expressing rich contexts of lived experience that might help make opaque municipal communication flows much more transparent and relatable.

More important, one effect of engaging the heuristic in this way is that the team is able to foster multidirectional communication flows in their eventual design, creating a robust network space that enhances material locations. In other words, by hybridizing a given neighborhood and its stories-so-far, users of the city's app are able to not only engage digital content about local histories, but add to such histories as well, producing their own texts through the application that expand and refine the neighborhood's stories. And by using the heuristic to consider interstitial spaces and routes as worthy of consideration, users are able to add to the city's understanding of actual use. For example, users contribute information about neighborhood shortcuts, desire paths, community gardens, and quiet spaces.

The Hybrid Commute

For years, helicopters sponsored by news organizations and media companies have hovered over major cities in order to provide timely information about traffic congestion. The haggard commuter, listening to his car's radio, might catch an update relevant to his commute every 10 or 20 minutes. Today, however, automated accounts (called "bots") provide up-to-the-minute information in social media spaces about travel times, accidents, inclement weather, and detours. And commuters themselves help refine the information that bots provide by offering updates of their own, based on real-time experience. The network space of social software has thus hybridized automobile interiors and the routes along which commuters travel.

In this scenario, a user experience professional might use the heuristic above to help assess and evaluate the efficacy of a given bot, exploring in detail how it hinders or supports the activity of commuting. Of particular interest here is the application of layers two and three of the heuristic. Communication flows in network space—gathered from roadway sensors, state or municipal

transportation departments, news organizations, or commuters themselves—may significantly shape a commuter's experience of material space. Understanding how communication flows from network space to material space—and back, through commuters themselves—can help the experience architect refine the effectiveness of the bot for a typical commute.

But by asking questions found in the heuristic's third layer and then considering the composite view of the heuristic, the experience architect may find opportunities for new forms of engagement and ongoing interactions. Indeed, in the hybrid commute, ephemeral and interstitial communication flows may substantively shape a user's experience of material space. The experience architect, guided by the third layer of the heuristic, decides to automate searches for geo-tagged posts unrelated to—but potentially having bearing upon—the commuter's route. For example, thousands of tweets about an evening Taylor Swift concert signals the bot to send a warning about possible congestion near the exit to the concert venue. By systematically "listening" to these ephemeral communication flows, the experience architect may direct the bot to provide meaningful information to commuters that might not otherwise be obvious.

Just-in-time Health Information

Sharon is a middle-aged comptroller who has recently been diagnosed with high blood pressure. She has also been advised by her doctor that she has several risk factors related to heart disease, including a family history of Type II diabetes, hypertension, and stroke. The commitments of work and family have limited her ability to consistently eat well and exercise, but she is highly motivated to make changes to her lifestyle. She has enrolled in a wellness program that delivers information about smart lifestyle choices via email and through a web portal. This program also helps Sharon track her own progress: She documents her weight and blood pressure readings each month, and she logs her doctor's visits and fitness milestones. The program allows her to share this information with her doctor as well, so that he can help keep her on track. Finally, Sharon has begun using a fitness app on her smartphone to track her morning jogs and her daily step counts.

Where Sharon struggles, however, is at the grocery store. After years of not paying attention to the foods she eats, she is unsure of which choices best support her lifestyle goals. Logging into the wellness program's web portal on her smartphone while at the grocery store is impractical, and she wishes there was a way to better connect her goals and daily fitness stats (calories burned, for example) to help her plan her meals. From a communication design perspective, Sharon's situation helps illustrate how the everyday material intentions of users may become lost in the broader communication flows of networked spaces. The web portal, email service, fitness app, and doctors office all support multidirectional communication flows, but they are not well articulated to one another in a way that is tangible in material spaces. For Sharon, diet decisions are "elusive, vague, and sloppy." By applying a composite view of the heuristic, however, the wellness program's user experience designers might better deliver health and diet information to users such as Sharon.

There are two areas where the heuristic may be most useful in this scenario. First, by better articulating the various components of networked space and its communication flows, the wellness program may leverage questions five and six of the heuristic's second layer, facilitating relevant health information in material spaces that matter, such as restaurants and grocery stores. And second, by exploring the potentially fluid objects that emerge from such hybrid spaces, experience architects for the wellness program may reduce the material factors that may appear "elusive, vague, and sloppy" to users such as Sharon. Above all, by taking a composite view of everyday hybrid spaces in this scenario, designers may bring together disparate resources in network space to deliver timely information in material space. Sharon, in turn, may quickly learn how to adjust her diet decisions in concert with daily communication flows about her fitness progress.

Conclusion

In this article, I have traced the development of knowledge work tools, technologies, and practices, the extension of knowledge work into knowledge play, and the resulting collapse of work–play contexts driven by mobile technologies and the reach of network

spaces. I have also delineated and extended Swarts and Kim's (2007) notion of hybrid spaces. In both of these tracings, the role of human movement and the motility of communication flows are central, and these collective movements significantly impact how, when, and where users interact with our designs.

As genres and spaces are hybridized, new affordances emerge alongside the hauntings of previous norms and uses. What seems perfectly stable and ordinary when viewed from one layer of the heuristic detailed in Figure 1 may instead be crosshatched and multiple when viewed in the composite. And all along, the spaces in-between things—some of which will be novel as a result of hybrid spaces—yield new potentials for changing the stories-so-far of a given user, her local community, and the material and network spaces that mediate everyday knowledge work and play.

Indeed, the single most important implication of hybridization is that it literally changes how we see the world. Stated another way: communication design may significantly change user realities in everyday spaces. This has always been a palpable responsibility for communication and user experience designers, but it becomes even more crucial in a world where material and networked spaces are so often meshed and crosshatched. Given the significance of hybridization, designing communication experiences means negotiating multiple, overlapping, and crosshatched worlds. Some users may still work with our designs strictly at one layer of the heuristic proposed in this article, but increasingly, our designs are enacted in the composite. Understanding how our work may move through multiple spaces and worlds will help us prevent our design strategies and tactics from becoming fluid objects—from falling through both material and network spaces, or from appearing elusive, vague, and sloppy.

Ultimately, the heuristic proposed here asks us to consider what our designs *do* in the everyday worlds of our users—keeping in mind that users' worlds are always potentially plural, and that our designs may travel in ways we never intended, to in-between spaces we do not yet know. This is a happy outcome, and an opportunity for more creative and meaningful work that moves within hybrid spaces, shaping new kinds of user experiences. Moving carefully through the heuristic, then, may help us

anticipate and pace meaningful spatial engagements with our work.

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Pushing Boundaries of Normalcy: Employing Critical Disability Studies in Analyzing Medical Advocacy Websites

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The emphasis on cure reduces the cultural tolerance for human variation and vulnerability by locating disability in bodies imagined as flawed rather than social systems in need of fixing.—Rosemarie Garland-Thomson

Charity advertising sells fear, while its commercial equivalent sells desire. Charities promote a brand not to buy, but to buy your distance from.—David Hevey

We are all patients in some way—or, at the least, patients-in-waiting. Although I am reminded of this reality on a daily, if not hourly, basis, it is most apparent when I log onto the Internet to engage in what millions of users have begun doing in the last few decades: surf for health information. Typing in "breast cancer" for what must be the thousandth time, I look again for research that will provide insight into this biopolitical phenomenon. Perhaps more telling, I search for information about my own body. As I scan the material, I cannot help but ask myself what qualities I possess or have developed and how they fit into the categories of "high risk," "moderate risk," or "low to no risk."

This experience is not just mine; the Internet has revolutionized the way users are able to interact with the medical establishment and to access medical information.[1] This is one of the myriad possible rationales as to why scholars in technical communication and rhetorical studies have researched technical medical information (paper, multi-media, and web-based), especially in recent years (Angeli, 2012; Batova, 2010; Bernhardt & Cuppan, 2012; Brasseur,

[1] For more discussion from our field on the ways individuals seek and encounter medical information online, and the complicating of the concept of e-patient, see K. Kopelson's (2009) "Writing Patients' Wrongs: The Rhetoric and Reality of Information Age Medicine" in *JAC* and the response to Kopelson's piece by K. Hensley Owens (2011), also in *JAC*.

2012; Burleson, 2014; Derkatch, 2012, 2012; Doheny-Farina et al. 2003; Germaine-Madison, 2009; Graham, 2009; Graham & Herndl, 2013; Heifferon & Brown, 2008; Hensley Owens, 2009; Popham & Graham, 2008; Ryan, 2005; Segal, 2005; Skinner, 2012; Teston, 2012, 2012; Tomlin, 2008; Zerbe, 2007). Primarily, scholars have researched such information in terms of access, quality, responsibility, and purpose. However, few (Ding, 2013, 2014; Bellwoar, 2012) consider the issue of *location*, and less so consider the common places users search when looking for technical medical information about bodies. With a focus on technical medical information, researchers have often underscored traditional sources for the analysis of medical information: hospital forms and hospital websites (e.g., www.mayoclinic.org, www.hopkinsmedicine.org), medical clearinghouses (e.g., Google Health, Medline Plus, WebMD), interactions with medical officials, and governmentally funded agencies (e.g. CDC and National Science Foundation [NSF]). While such analysis is indispensable to scholars interested in the dissemination and quality of medical information, narrowing the research in this manner inadvertently overlooks a host of burgeoning medical technical rhetoric on the Internet. One such location is online advocacy presence, which in this article I discuss as medical advocacy websites (e.g., www.goredforwomen.org, www.livestrong.org, www.movember.org, etc.). Such locations have traditionally been recognized as locations where advocacy organizations raise funds for research and support of patient and patient-adjacent populations. Yet fundraising has never been the sole purpose of these sites: such sites also support patients and patient-adjacent populations by providing access to general medical information as well as discuss potential treatments, side effects, preventative measures, and a host of other technical medical information. With the ever-increasing expansion of Internet technologies, as well as the increase in advocacy-based nonprofit organizations, the dense presence of such information has only become more robust in recent years. In light of this phenomenon, I call the field of technical communication to direct critical attention toward its qualitative features and potentially dangerous implications.

Specifically for this article, I call attention to the location of breast cancer medical advocacy. Over the past decade, breast cancer

medical advocacy organizations and the culture that surrounds such phenomena has been discussed, critically and otherwise, for a variety of reasons (Ehrenreich, 2001, 2009; Johansen, Andrews, Haukanes, & Lilleaas, 2013; Garrison, 2007; King, 2006; Klawiter, 2008; Kopelson, 2009, 2013; Pezzullo, 2011; Segal, 2007, Stern, 2013; Sulik, 2011), including (but certainly not limited to) their overuse of materialistic, capitalistic, normalcy-based approaches to fundraising According to Ehrenreich (2001), these organizations are recognized as altruistic leaders, but that altruism also provides a barrier from critique that protects the organization on the basis that they fight on behalf of their aim for the greater good. In the case of breast cancer awareness and treatment, fundraising organizations typically promote a "happy survivor" narrative that leaves no space for a woman to be anything but grateful for her disease and/or happy for the experiences with the organization. Consequently, these happy survivors are coached to serve as a support group for other individuals whose lives have come in contact with this awful disease. This approach is particularly concerning because although it is rooted in a well-intentioned place, it conditions women to continue bearing social and cultural burdens with a grateful smile.

Ehrenreich's argument generated several responses that are particularly noteworthy for the purposes of this article. One respondent wrote, ". . . although pink ribbons and teddy bears may be infantilizing, many survivors appreciate these touches or at least tolerate them as furthering a worthwhile cause" (Lerner, 2002, p. 4). Readers should pay close attention to this respondent's use of the term *tolerate*, as it evinces a "by any means necessary" approach to medical advocacy work; in other words, it proposes to endure and force gratitude for infantilizing approaches to survival because the cause is worthwhile. What is particularly concerning about this logic, however, is that it authorizes a reification of narratives of normalcy (Davis, 2002)—particularly about bodies—and thereby willfully overlooks the collateral damage that results from its application. By locating this discussion within the digital presence of these organizations, I argue that their websites function both as altruistic sites for promoting health and wellness for all while simultaneously extending harmful biopolitical logics that saturate this current historical moment (e.g., ableism, racism, heteronorma-

tivity). By meshing such dominant narratives with an ethic of altruism, such advocacy groups have contributed to what has become a national phenomenon: the support and promotion of practices continually operating under a medical charity model.

Coming to terms with the dangers of this model will require scholars to understand how this unconditional support (and reliance) is reinforced by the ubiquitous nature of advocacy groups such as Susan G. Komen for the Cure. The focus on information from Susan G. Komen for the Cure might seem a tired location on which to direct attention, a location discussed and critiqued time and time again in a myriad of ways, academic and otherwise. However, I choose this location purposely with two logics—first, while Susan G. Komen for the Cure has, indeed, been critiqued extensively (see King, 2006; Klawiter, 2008; Kopelson, 2013; Sulik, 2011), the organization still reports extensive funding, and the culture of pink, of which Komen is the main face, has yet fall by the wayside—indeed, Komen's work continues on, with assets worth over 425 million as of 2013 (Komen Consolidated Financial Statements, 2013). With that kind of monetary investment, the work of Komen continues, even with a more skeptical public—in other words, continued ubiquity deserves continued, nuanced attention.

Secondly, while I use Komen as a case study here, and an important one at that, the larger argument, of which the Komen example is just one instantiation, is of tantamount importance—calling teachers and practitioners of technical communication to pay attention to the scientific medical information being processed and disseminated by advocacy groups and often linked with a medical charity model of understanding bodies and medicine. While some, especially in more wide-spread media have articulated that pink washing may have a detrimental effect on all advocacy groups, Kopleson (2013) articulates how, in the current exhaustion of the pinkification of breast cancer advocacy groups, oft associated with Komenization, that it might be

> …reasonable to interpret the mainstream as now perfectly poised for diversion—especially in light of preliminary evidence—and to wonder what other courses that stream might take: all three of the other national breast cancer organizations, including the two representing environmental

> activist agendas, Breast Cancer Action (BCA) and Breast Cancer Fund (BCF), reported an upsurge in queries, Web-traffic, and/or financial donations in the immediate aftermath of the Komen-Planned Parenthood incident. (109)

Considering Kopleson's claim, as other medical advocacy groups are poised to take over, or at the very least share the work that Komen was doing, more broadly (as I call for in this article) we must understand the place of advocacy groups in disseminating medical technical communication, and thus must also understand the interrelationships of advocacy groups and medical technical communication. In my view, the concepts best poised for developing such an understanding are accommodation, expediency, and exigence. These three concepts, which propel a "culture of normalcy" (Davis, 2002), have been under discussion and debate in current scholarship—accommodation mainly through the scope of disability studies and expediency (Katz, 1992) and exigence (Ward, 2010) through the scope of technical and professional communication. While recently, scholars such as Palmeri (2006), Hensley Owens (2009) and even more recently Meloncon (2013) have brought discussions of disability studies to bear on technical communication, I argue that to counterbalance the insidious, normalizing work of medical advocacy groups through medical technical information, professional and technical writers and teachers must bring a feminist disability studies lens to bear in the field of technical communication. Scholars have discussed feminist disability theory in numerous ways in recent years (Dryden, 2013; Erevelles, 2011; Hall, 2011; Hamraie, 2013; Kafer, 2013; Kafer & Jarman, 2014; O'Donovan, 2013; Piepmeier, Cantrell, & Maggio, 2014; Schalk, 2013; Söder, 2009; Titchkosky, 2005, 2011; Thomas, 2006; Tremain, 2013); in this article I'll rely on germinal discussion on feminist disability theory from R. Garland-Thomson (2004), who argues that feminist disability studies is designed "to augment the terms and confront the limits of the ways we understand human diversity, the materiality of the body, multi-culturalism, and the social formations that interpret bodily differences" (p. 75). By employing the tools of both disability and feminist studies in conversation, researchers may deepen, expand, and challenge both theories to allow for the consideration of issues such as the status of the lived body, the politics of appearance, the

medicalization of the body, and the privileges and pressures of normalcy (Garland-Thomson, 2004, p. 75).

Thus, I respond to Garland-Thomson's call regarding feminist disability studies by rhetorically analyzing technical medical communication produced and disseminated by medical advocacy websites devoted to breast cancer awareness; specifically, I focus on the Susan G. Komen for the Cure website's link/page(s) that disseminates scientific information regarding risk factors, risk management, and prevention. I adopt this focus not only because the tension between bodies and language in advocacy-based medical technical communication is obvious in its orientation toward managing non-normal bodies but because this critical approach to working with and constructing technical texts radically affects the way such bodies are conceptualized by the larger public (see Palmeri, 2006). Such a critical analysis will call into high relief how the work of technical communication—in particular, technical medical communication—does not occur solely in what are seen as standard venues for information dissemination but also appears in wide-ranging and systemically unexamined venues, making such work all the more dangerous, in particular for bodies deemed non-normal.[2] Additionally, and perhaps most importantly, such a critical disposition will force practitioners, teachers, and students of technical writing to continue to confront the ways in which dominant ideologies are produced and sustained by medical technical communication on the Internet.

Think Pink: Conceptualizing Further Dangers of Komen-Ization

The Susan G. Komen for the Cure Foundation has, since its inception in 1982, done outstanding charitable work on the front lines of the battle against breast cancer. They have raised and

[2] Throughout, I will use the term *non-normal,* but I use the term not as a negative to ascribe value but rather to call attention to and consider the concept of normalcy and normalcy's function in categorizing and doing violence to bodies, bodies and lives constructed by information disseminated on these websites. This is also a gesture toward Lennard Davis's (2002) work in his text *Bending Over Backwards: Disability, Dismodernism & Other Difficult Positions.* Davis's (2002) use of the term *normalcy* in his text is a purposeful one—he says that normalcy, unlike its counterpart *normality*, carries with it a sense of permanency as well as a sense of the political. Davis (2002) calls "'normality' the alleged physical state of being normal, but 'normalcy' the political-juridical-institutional state that relies on control and normalization of bodies, or what Foucault calls 'biopower.' Thus, like democracy, normalcy is a descriptor of a certain form of governmental rule, the former by people, the latter over bodies" (pp. 106–107). Davis (2002) also makes the distinction that "under normalcy, the fact is that no one is or can be normal, as no one is or can be equal. Everyone has to work hard to make it seem that they conform" (p. 117). Thus, my implementation of Davis's notion of normalcy asks us to work not from the locus of normality in our analysis but from the understanding that medical rhetoric functions in a space of normalcy, in the space of the political.

invested over 1.9 billion dollars in the last 20 years in an effort to find a cure (Susan G. Komen for the Cure [Komen], "About Us," n.d.). Since the founding of the organization, early detection has skyrocketed in numbers—nearly 75% of women over 40 now receive mammograms, compared with less than 30% in 1982 (Komen, "Our Work," n.d.). The number of lives they have affected is truly innumerable, and they pledge to invest another 1 billion dollars by the year 2017 to, as they put it, "finish what [they] started," to see a world without breast cancer (Komen, "Our Work," n.d.).

Clearly, the Komen foundation has not been without criticism in the past few years (see Kopelson, 2013). In *The Biopolitics of Breast Cancer*, Klawiter (2008) provides some discussion of the way Komen has operated and become so popular. Klawiter states:

> The Komen Foundation embraced mainstream, and in some respects conservative, norms of gender and sexuality, and these resonated with corporate America and with ordinary Americans from across the political spectrum. The Komen Foundation also maintained a respectful, uncritical stance toward the medical and research establishments—raising money for them without directly challenging their authority, priorities, and expertise. The foundation, in other words, embraced a traditional division of labor and distribution of power between the lay populace and the institutions of science and medicine. But the foundation was also at the forefront of legislatively focused efforts to force the health insurance industry to cover mammographic screening . . . The Komen Foundation helped transform the issues of mammograms for low-income, uninsured, and underdeserved women, especially women of color, into a moral imperative. (p. 139)

It is precisely this moral imperative, I argue, that allowed the Komen organization to forward and promote heteronormative, ableist narratives of normalcy because they challenge some narratives while simultaneously shoring up others. In other words, by attaching a moral value to providing early detection access to women of color and impoverished women and by seeing that moral value as a goal, the Komen foundation has been able to

marginalize a number of other populations of women because of that altruistic goal.

Conceptually, altruism has multiple trajectories and purposes, as Hevey (1992) reminds us. First, advocacy groups are, literally, everywhere—on bumper stickers, magnets, T-shirts, coffee mugs, purses, and CDs. Because of their ubiquity, people recognize the advocacy group's "brand" name. The logic is that if such a large number of people support this organization, everything that comes from that organization must be trustworthy. The more publicity an organization gets, the more individuals seek out that organization for information and involvement; the more individuals become involved, the more trust builds on behalf of the organization. A part of that trust, then, is the very nature of the advocacy work these organizations perform—if the organization does "good work," collectives and individuals metonymically infer all that comes from that organization (whether that be products, events, information, support, or otherwise) must be "good."[3]

Part of determining the conditions of the ethics of information dissemination, of course, has to do with the exigence in which such information and information design would be acceptable. For example, in our current historical moment, the Internet has become a major and valued mode of information dissemination for medical issues. However, the use of technology as a mode of understanding information about the body is complicated by the human body's, in particular the non-normal body's, tenuous historical, cultural, and social relationship with technology. This tenuous relationship between the non-normal body and technology is clearly articulated by Colligan (2004), who discusses, very directly, technology's work as normalizing bodies outside of the norm. Colligan (2004) argues that scientists see themselves as "creating technology, not culture" (p. 55); thus they encounter few qualms about creating technology that may eventually be able to genetically test for non-normal markers in the womb.

[3] Regarding altruism and its cultural impact as both an act and concept, and its dis/connection with health/wellness, see B. Oakley, A. Knafo, G. Madhavan, and D. S. Wilson's 2011 edited anthology *Pathological Altruism*, along with widespread and varying discussions of the problematics of the medical and charity models via disability studies scholars, some of which is becoming more nuanced (see, for example, S. C. Moeschen's (2013) *Acts of Conspicuous Compassion: Performance Culture and American Charity Practices).*

Of course, this technology is framed as a solution to the problem of birth defects, a solution for the mothers of children with potential defects, and a solution for the children themselves, so they would not have to live life with a "defect." This framework, however, ignores how that construct allows the dominant culture to normalize differences, even before those bodies are born, and simultaneously locate the responsibility for conformity within the non-normal body rather than within dominant culture to reconceptualize differences, much as Garland-Thomson (2004) argues in the first epigraph to this article.

This tenuous relationship between the non-normal body, medicine, and technology, then, holds implications for learning about one's body by studying technical medical information housed in websites such as www.komen.org. If, as Colligan (2004) articulates, medical technologies have consistently found ways to normalize non-normal bodies, how does having that historical, cultural, and social framework for understanding technology's relationship to and effects on the body shape the way we understand and internalize medical information disseminated via computers and the technology of the Internet? How does that historical, cultural, and social framework influence the ways in which technical writers disseminate medical information via technology? How and where can we see the "economic, political, and social agendas" Zerbe (2007) calls for our students to seek awareness of in these texts? How are these issues framing the bodies, especially culturally-deemed non-normal bodies, via this technology? These are some of the questions I answer in the following section through the specific analysis of a section of information on www.komen.org.[4]

Sins Of Transmission: Technical Communication, Medical Rhetoric, and Narratives of Normalcy

Having made the case for analyzing and critiquing the technical writing in medical advocacy websites, in this section, I will illustrate how Komen has employed the concepts of altruism, ubiquity, retrofitting/accommodation, expediency, and exigence to do a particular kind of political work in marginalizing particular bodies within a gendered context. Dolmage (2008) argues that in

[4] All information and images taken from www.komen.org in May 2009 or early November 2010.

the physical structures we inhabit and in the pedagogical practices we implement in writing classrooms, we retrofit, or add "a component or accessory to something that has already been manufactured or built" to accommodate difference or, more specifically, to "measure up to new regulations" (p. 20). Often, we are forced to adopt this approach to prevent the continued exclusion of non-normal bodies from normalized spaces. Drawing upon the example of graded ramps on an existing building, Dolmage (2008) explains that "as a building is retrofitted to accommodate disability, as per the 'specs' of the ADA, ramps are added to the side of a building, or around back, instead of at the main entrance. The ADA calls for reasonable accommodation. Common reason then seems to dictate that disability is supplemental to society, that it is an afterthought" (pp. 20–21).

This kind of afterthought occurs not only in terms of physical retrofits for accommodation but also in terms of the intellectual work needed to construct educational experiences. Put more specifically, such retrofitting occurs linguistically and emerges most often in how we talk about bodies and issues deemed non-normal. Dolmage (2008) contends that this work occurs when we retrofit course materials and decide how much attention we devote to such bodies. In most cases, the result is that such issues are segmented to one project, one reading, one week. By implication, the engagement with non-normal topics is qualitatively cast in terms of accommodation; it frames the work as ancillary to the main purpose of the course.

Extending Dolmage's insights, this retrofit logic bleeds its way into advocacy-based medical technical writing (particularly web-based technical communication) that addresses and deals with issues of disability, sexuality, and race. Often, class is another marker lumped in with the "other" category, but because the Komen foundation purports to be working on behalf of women who might be of lower-class status and thereby have little to no access to health care support, class is not an issue "othered" by the website. However, in considering how different marginalized bodies are treated, it is clear how retrofitting has become common to the Komen website (see Figure 1), where issues such as race, ethnicity, and sexuality are all lumped under the category of "other" issues

affecting breast cancer risk. This type of categorization encourages users to think of these identity markers as "other," which results in maintaining their position as marginalized bodies. Even more concerning, the task of finding a discussion of women with disabilities requires users to employ the search tool, which results in a hit of secured information.

Other Issues Related to Breast Cancer Risk

- Healthy behaviors
- Race and ethnicity
- Breast cancer risk among lesbians and women who partner with women
- Breast cancer and the environment
- Emerging areas in estimating risk
- Questions for your provider
- References

The argument is often made, particularly in the case of marginalized bodies, that the inclusion of such categories is a strong recognition of difference and represents a good faith effort for inclusion. It is precisely that argument which shows how the linguistic and information framing of such bodies could be discussed as a form of retrofit: they are included, but the manner of that inclusion is often forced and thereby construed as an afterthought.

Retrofitting—physically, socially, ideologically, or otherwise—holds a commitment to expediency. In other words, a retrofit application is executed quickly and efficiently, as a means to an end, to become code or regulation compliant or, in the case of the Susan G. Komen foundation work, to initiate political and social work that shores up the borders of dominant culture. In rhetoric and composition studies, the term *expediency* references the work of Katz (1992), who demonstrated how an ethic of expediency formed the "moral basis" of the Holocaust and thereby facilitated the mass murder of a myriad of non-normal populations. Crucial for my purposes here, Katz (1992) extends this argument into the

contemporary moment, suggesting that the ethic of expediency "gives impulse to most of our actions in technological capitalism" (p. 258). By implication, we implement technology in very specific and moralistic ways to dispense with a given problem (whether that problem be a term, an experience, a body, or whatever is being seen an as obstacle) that impinges the increase of capital. According to this logic, then, we expediently include non-normal bodies in our discussions out of fear that a failure to comply will compromise productivity and growth.

Katz's (1992) insights underscore how the field of technical communication and its roots in broader societal imperatives are committed to an ethic of an accommodation *as* expediency. As I've noted, this ethic does not value inclusivity because inclusion is a key component to more democratic societies; rather, it creates a veneer of investment in order to maximize the production of capital. The effects of this ethic are varied and cannot be adequately addressed in this forum; however, it is crucial to address the underlying logics of this ethic because doing so punctuates how non-normal bodies continue to remain on the margins of this conversation at the very moment they appear to be included as integral components within the larger group.

Extending Katz's work, Ward (2010) emphasizes how attention to information architecture "requires us to go beyond textual analysis to ask why a given arrangement of text and graphics has resonance for a particular culture" (p. 64). More specifically, Ward (2010) calls audiences to consider information architecture in terms of a collective ethics that endeavors to understand how particular rhetorical choices (in this case about information design) are authorized and accepted by the broader culture. Ward (2010) argues that "if we conceive that our inquiry is concerned not simply with single moments of decision but with the individual and cultural dynamics by which human actors shift the latitudinal boundaries of what they are willing to accept or reject, then we are opening ourselves to a constructionist approach rather than taking only a categorical approach" (p. 84). Using a 1935 Nazi propaganda poster as an example, Ward (2010) claims that if we see ethics not as a point on a line but rather in a band, we may then ask questions of our work such as "What cultural and institutional factors shifted

the designers' latitudes of acceptance so that persecution fell within their tolerable ethical thresholds?" What is important to note in both Katz's (1992) and Ward's (2010) articles is their focus on Nazi propaganda and rhetoric, which functioned to essentially eliminate various forms of difference from existence in acutely violent ways. This approach, I argue, is replicated in advocacy-based medical web-writing. While Komen may not be advocating the mass murder of individuals deemed societally different, in the next section I demonstrate how it uses ethics of accommodation, expediency, and exigence to blame particular non-normal bodies for having breast cancer *because* they are non-normal. The upshot of this logic is that the death of non-normal bodies at the expense of breast cancer can be considered as deserved or palatable because, unlike their normal-bodied counterparts, they consciously chose to become sick by belonging to certain categories.

Treading Lightly: Critiquing Komen

To study accommodation, expedience, and exigency from the framework of feminist disability studies, it is crucial to consider the images presented on the Komen website, the way in which the images and the text converge, and what text is presented to make particular arguments about particular bodies. During November 2011, on first entering the Komen website, users were inundated with large, rotating images. Often, these images depicted two hands, clasped in solidarity: the visual representation of one sister's promise to another's to fight the disease that killed her (see Figure 2). This emotionally poignant beginning shaped (and continues to shape) our reading of this website, asking us to think of this fight as a partnership, with a goal that we can attain only together. Additionally, both hands were clearly meant to be that of sisters, which placed the onus of responsibility onto other feminized bodies. While it is, of course, important to create a community of women who can share experiences (although Ehrenreich's work warns of some of the pitfalls of such collectives), more important, perhaps, is the sense of gendered responsibility that places the largest burden on the feminized, marginalized body to support the cause. Simultaneously, that sense of camaraderie, it would seem, presents the vision of altruism that would encourage viewers to think of this website uncritically and acceptingly. In addition to the

image, there are also staggering statistics that rotate with the image regarding how many women are stricken with breast cancer each year and how many people have joined the fight against breast cancer, compelling and guilting the reader into action or at least reading further.

At first glance, the ubiquity of an organization devoted solely to women and women's issues seems as if it would be a sign of a changing political and social climate, in particular on behalf of caring for and about women's bodies. In June, 2014, when I searched Google for "understanding breast cancer," a disease which strikes women 100 times more than men (Komen, "Being Female," n.d.), the Susan G. Komen for the Cure site was the first link that appeared. The Susan G. Komen link is tagged as an organization "Dedicated to education and research about causes, treatment, and the search for a cure. Headquartered in Dallas, Texas" and bills its page "Understanding Breast Cancer" as "…your one-stop resource on the latest information on breast cancer risk factors, early detection and screening, diagnosis and treatment. You will also find the latest on integrative and complementary therapies, follow-up care, support and much more" (Komen, "Understanding Breast Cancer," n.d.).

As discussed earlier in this article, in our current historical moment, Komen is a well-promoted and critiqued advocacy organization; I recognize the name, the branding of it, the sea of pink, the races for the cure, and so do my students. In a recent technical writing

course, I asked my students how many had heard of the Susan G. Komen foundation. Out of 22 students, 20 had heard of the organization, and all 20 knew to associate the color pink with the organization. In addition to their near-celebrity status (and, in fact, many celebrities and other companies do endorse this particular organization), Komen is also an organization that does substantial altruistic work with breast cancer awareness, funding, and support. According to their website, they are "working together to save lives, empower people, ensure quality care for all and energize science to find the cures" (Komen, "About Us," n.d.).

A closer look at the website reveals a more concerning dimension of its awareness raising agenda. As I argued earlier, advocacy websites are not just about the foundation or about raising money. The Susan G. Komen website also holds a vast amount of information about breast cancer, about the bodies who get breast cancer, and about what people, diagnosed or not, can do to prevent or manage it. In fact, one of the main imperatives of this organization is to promote early detection.

As the Komen foundation's major aim is to promote early detection and prevention, the section that is one of the most privileged and important is the section "Risk Factors and Prevention."[5] To reach the section on "Risk Factors and Prevention", a section designed for any individual to better understand breast cancer and what we can all do to become more proactive in our own health, one would click in the upper left hand of the screen on a button entitled "Understanding Breast Cancer." "Risk Factors and Prevention" is located on the left hand side of the screen and is the third button down.

In this section about risk factors and prevention, there are two lists (see Figure 3). This first image presents the list of factors that increase breast cancer risk. At the very top of the list is "being female" and "getting older," the top two risk factors. By listing these unchangeable and uncontrollable facts of life as risk factors, immediately the technical medical writing does the work of

[5] Though this article discusses pages from a website that have subsequently been revised (the nature of and potentially problematic work of online research), it is that ease of removal that makes a rhetorical analysis such as this one even more important. In other words, just because information is removed or revised online, it (and its impact) is not removed from our consciousness or cultural memory. Thus, it is imperative to pay attention to such past iterations that, at times, advocacy organizations would like to believe are forgotten with each revision. Secondly, though in analysis I critique information, the construction of information dissemination, and the treatment of bodies on this advocacy website, I am also aware that breast cancer is one of the leading causes of death among women and that it takes lives in ruthless and painful ways. Such a reality, also make rhetorical analyses (such as this one) that much more important.

creating anxiety about a process that is uncontrollable and creates an emotional need to control other aspects of our life since we cannot control the two major risk factors. However, as we click into the section about the risk factor of being female, it is first explained that that women have an almost 100 times higher risk of developing breast cancer than men (see Figure 4). The rest of the page, then, is devoted to a discussion of "women who partner with women and lesbians." If we look closely at the construction of this information, the first paragraph is focused solely on the absence of children from these women's lives, and how that makes their lives more susceptible to breast cancer. The way this paragraph is framed makes the absence of children sound almost exclusively as if it is a choice. There is no mention, for example, of the rising number of women who are actively choosing not to reproduce, regardless of sexual orientation, or of women who cannot conceive children because of various medical reasons, or any research that would indicate that lesbians or women who partner with women do, in fact, have fewer children. Also absent is any mention of the social and economic difficulties varying populations may encounter in trying to conceive children, or, perhaps most importantly, of the societal issues that nexus themselves within any given situation.

Risk Factors & Prevention

This section of About Breast Cancer describes the many known risk factors for breast cancer—from those that have a large effect on risk (such as getting older, having a strong family history and having carcinoma in situ) to those that have a small effect on risk (such as being tall and eating an unhealthy diet). Also included are tips for lowering risk, information on genetic mutations (including genetic testing) and options like tamoxifen for women at higher risk.

Factors that Increase Breast Cancer Risk

- Introduction
- Being female
- Getting older
- Inherited genetic mutations
- Carcinoma in situ
- Family history of breast, ovarian or prostate cancer
- High breast density on mammogram
- Radiation exposure in youth
- Benign breast conditions (benign breast disease, hyperplasia)
- High levels of estrogen in the blood
- Personal history of breast cancer
- Menopause at age 55 or older
- Not having children or having first child after age 35
- High bone density
- Overweight/ weight gain
- High socioeconomic status
- Ashkenazi Jewish heritage
- Drinking alcohol
- Lack of exercise
- Postmenopausal hormone use
- First period before age 12
- Current or recent use of birth control pills
- Being tall
- Not breastfeeding
- Risk factors summary table of relative risks

Other Issues Related to Breast Cancer Risk

- Understanding risk
- Breast cancer risk factors table
- Understanding breast cancer prevention
- Healthy behaviors
- Race and ethnicity
- Gene mutations and genetic testing
- Options for women at higher risk (tamoxifen and other choices)
- Emerging areas in estimating risk
- Factors under study
- Factors that do not increase risk
- Questions for your provider
- References

The normalizing work being done here, then, is that Komen writers are potentially claiming that if you are a lesbian, you put yourself at risk by "choosing" a lifestyle in which you may not continue to procreate as "normal" individuals do and that you should consider the ramifications of those "choices." Of course, then the problematic notion of "choosing" one's sexuality arises from this medical rhetoric, making it an option that one can then choose to prevent by normalizing oneself to the heteronormative expectation, which would, by association, then, lower the risk of breast cancer. As Kopelson (2013) articulates,

> …the pink ribbon culture of early detection historically has recruited through and…compelled its own audiences/subjects to forms of precautionary hypervigilance. As the idea of "early detection" makes plain, all women must be afraid of breast cancer and are obligated by this fear to self- and medical surveillance of their breasts as soon as

> possible and as often as possible…In sum, in pink ribbon rhetoric, fearful suspicion is directed inward, toward something we can 'detect'. (p.116-117)

Kopelson articulates "all women" must be afraid of breast cancer—and indeed, pink ribbon rhetoric articulates that as true. However, much like Kopelson's (2013) analysis of BCF (p. 123), not all women are articulated to have the same amount of risk, and thus some women, as Komen claims and shows by categorization of information, have obligation to be more fearful than others. This fear is not coupled with uncertainty for persuasion, as in the case of Kopelson's discussion of environmental breast cancer activism, but rather with certainty. Consider, for example, the certainty with which the first paragraph of that section is written, the section of course that places the responsibility of conformity, guilt, and shame, and responsibility, with the individual, and how the second paragraph, a paragraph that loosely implicates societal complications and oppressions, is much more tentative, stating that there may be a connection, perhaps, between doctors discriminating against women because of their sexuality. Or perhaps consider the implication that lesbians and women who partner with women have a higher rate of obesity and alcoholism (complete with limited research citations) and no in-depth discussion regarding any social or cultural factors that might impact such findings. The turn here for pink ribbon culture, then, is that yes, it is a turn inward, toward the individual, not because of the detection of breast cancer, but more so the detection of the normalization of seemingly non-normal bodies. To highlight the impact of such writing, of students I ask questions such as: "How is language framing bodies? What might be some possible effects of this construction? Is this type of writing ethical? To what ethic/s is this writing responding? How does including bodies that may be considered non-normal by dominant society but then writing in this manner shape cultural exigence?"

Being Female

Tell me more about RISK

Being female is the most important risk factor for breast cancer. Although men can develop this disease, it is about 100 times more common among women [3].

Breast cancer risk in women who partner with women and Lesbians

Although the data are somewhat limited, women who partner with women are believed to have a higher risk of breast cancer than other women. The reason? Women who partner with women tend to have more risk factors for the disease. For example, as a group, they are less likely to bear children or, if they do, are less likely to have them early in life. They may also have higher rates of obesity and alcohol use, both of which can increase the risk of breast cancer [4,5,6].

In addition to having more risk factors for breast cancer, women who partner with women may also be less likely to get routine mammograms and clinical breast exams. The reasons for this are not yet clear but may be due to issues like lack of insurance, financial hardship and past experiences of discrimination and insensitivity from health care providers [5,7]. For more on this, see "Women who Partner with Women and Lesbians".

Introduction Getting Older

In answering such questions, what students often find, and what I have found in my own analysis, is that by privileging expediency and normalizing exigence, such rhetoric is allowed to go unquestioned by viewers. By locating the information on a medical advocacy website, by using scientific information to support claims, and by having the pre-determined problem of breast cancer to solve, it is logical that this problem must be fixed, and quickly—such a call responds to our capitalistic sensibilities as well as our need to expediently solve problems.

And indeed, solving that problem is not problematic—the goal, to end cancer, itself is clearly important. And, in theory, getting to that goal quickly is not problematic, either—however, it's in the execution of scientific medical rhetoric to achieve that goal, specifically from altruistic websites such as the Susan G. Komen foundation where we might take issue. Rather than articulate social barriers to seeking early treatment for breast cancer [6], for example, the Komen website feminizes bodies that research deems "at risk" and asks the bodies, rather than the social systems at play that create risk for such bodies, to carry the responsibility of such

[6] Recent research has discussed that early detection and mammography might not be the best route for curing cancer. However, that is the premise of the Susan G. Komen foundation's work—my goal in this article is not to address that issue, but rather consider how certain bodies are normalized and othered by altruistic organizations.

problems. Therefore, on the Komen website, we see how research is used to persuade viewers that being a normal woman (according to dominant culture) is one significant way to reduce your risk of breast cancer. The solutions and preventions that the Komen website provides, in fact, center around having children, being thin, breastfeeding, not being female, getting older, loving who you love. Consider, for example, the section on birth control, and the connections being made between birth control and breast cancer (see Figure 5). Consider, then, as well, the high focus again on the importance of having children to preventing breast cancer. Also included in that risk is not breastfeeding (see Figure 6). So not only must a women have children to lower one's chances of developing breast cancer, but she must be able to breastfeed them as well, both for her own benefit and for the benefit of the child. Indeed, Komen's technical writers write that having two children is even better than having one, and being able to breastfeed all your children is the best option. Considering this information, we must ask—what kind of political and social work is this technical writing doing to real, material bodies, in particular women's bodies, bodies that are continually marginalized? How do we, as writers of and creators of knowledge, ethically and responsibly respond to this work? Why have we yet to pay attention to the kind of medical technical writing these medical advocacy websites promote?

Millions of women take birth control pills (oral contraceptives) and would like to know how this may affect their risk of breast cancer. Although evidence on the topic continues to mount, the overall conclusion has remained the same for a number of years: current or recent use of birth control pills slightly increases the risk of breast cancer.

A large analysis that combined the results of numerous studies found that while women were taking birth control pills (and shortly thereafter), their relative risk of breast cancer was 10 to 30 percent (or 1.1-1.3-fold) higher than that of women who had never used birth control pills [124]. Once women stopped taking the pill, however, their risk began to diminish and returned to normal within about 10 years. In most of the studies in this analysis, the women were taking older, higher-dose versions of the pill, and so one area under active study is how today's lower-dose pills might affect the risk of breast cancer. The evidence to date hasn't been able to answer this question confidently.

While recent results from a case-control study actually found no link between birth control pills and breast cancer [125], the findings from this single study are not compelling enough to change the general conclusions based on all the data to date. In fact, the findings in certain groups of women in this study actually support the conclusion of the combined analysis—that birth control pill use slightly elevates breast cancer risk.

While the increased breast cancer risk associated with pill use can be a little frightening for women, it is important to note that most women on the pill have a low risk of breast cancer to start with because they are typically young and premenopausal. So even with a slight increase in risk, they are still unlikely to develop breast cancer while they are on the pill.

Before making any decisions about birth control pills, women should weigh the pros and cons of using them. Though they have some risks associated with their use, birth control pills have a number of advantages as well, including preventing unwanted pregnancies and decreasing a woman's risk of both uterine and ovarian cancers [126,127].

For a summary of research studies on birth control pills and breast cancer, please visit the Breast Cancer Research section.

Not Breastfeeding

Tell me more about RISK

There has been much debate about the effects of breastfeeding on a woman's risk of breast cancer. Although the issue is still under investigation, there is now good evidence that breastfeeding protects against the disease, particularly in premenopausal women [132,133]. Breastfeeding appears to offer protection against both estrogen receptor-positive and estrogen receptor-negative tumors [134]. In an analysis that combined the results of 47 studies, mothers who breastfed for a lifetime total of one year (combined duration of breastfeeding for all children) were found to be slightly less likely to develop breast cancer than mothers who had not breastfed [135]. Those who breastfed for a lifetime total of two years got about twice the benefit of those who breastfed for a total of one year. Women who had a combined duration of more than two years of breastfeeding had even greater benefit. Although data are limited, breastfeeding feeding for less than one year may also offer some protection against breast cancer.

Add this reduced risk of breast cancer to the other benefits of breastfeeding—such as fewer childhood infections, fewer sick days used to care for an ill child, a quicker return to pre-pregnancy weight and possibly a lower risk of ovarian cancer—and there are compelling reasons for women to choose to breastfeed their children if they are able to do so [136].

The traditional expectations of femininity are not the only expectations derived from the Komen website. Also interesting to note is the section that Komen devotes to disabled women's bodies. Unbelievably, with all the categories discussed, there is no section to click that discusses the particular risk factors disabled women face in diagnosis and treatment of breast cancer. In fact, the one pamphlet on the Komen website that deals specifically with women with disabilities is a handout one has to actively search for, and there are no alternative formats for individuals with disabilities. Most disturbing, however, is the information within this pamphlet and the work that information does. The pamphlet states, "Some disabled women believe that they are less likely to have breast cancer than other women, since they are already coping with one disability. They may believe that 'lightning doesn't strike twice'" (see Figure 7). Not only, then, are women with disabilities not actively considered in the construction of this very website, but the writers of this site (hired/employed by Komen) frame women with disabilities as irrational and logic-deficient. Disability, in this case, is also framed solely as a physical problem and thus does not take into account other disabilities that may affect a woman's ability to seek medical attention.

Barriers to screening

Research has shown there are several reasons why women with disabilities may not receive breast cancer screening:

1. It is hard to access the place where the screening is offered:
   - Women may have a hard time making and keeping medical appointments. For example, a woman who is deaf may not be able to easily contact a clinic that does not have a TDD text telephone. Her doctor's office may not have a sign language interpreter that can be present at the appointment.
   - Facilities for breast cancer screening are not always accessible to some women, such as those who use a wheelchair. For example, there may be no ramp or dressing room that is large enough to accommodate her wheelchair.
   - The equipment used is not always accessible to some women, such as those who have trouble walking or standing still in one position. For example, mobile mammography vans are not always wheelchair accessible. Mammography equipment may not adjust enough to allow some women to easily position themselves or sit while being screened.
2. Some disabled women believe that they are less likely to have breast cancer than other women, since they are already coping with one disability. They may believe that "lightning doesn't strike twice."
3. Health care workers often don't know much about disabilities. They may focus on the disability and not screening for breast cancer. They may not know how to make sure that disabled patients get the breast cancer screening they need.

Conclusion

Taken alone, the commentary on the lesbian body or the non-mothering body or the disabled female body may seem like small points, but when considered in a nexus with one another, we can see how information has been manipulated to support a culture of normalcy. As technical writers, we must ask what are the implications of having one citation support a claim about a certain risk factor (see Figure 8). Also important to note is that the research on many of the more insidious risk factors are supported by the same group of individuals (see breastfeeding, having children, and birth control). Ethically, as technical writers we must push ourselves and our students to do better, to be more socially and culturally aware of how the work we do can impact lives in ways unimagined—because of the wide nature of the audience of the web and because of the nature of the information.

		McTieman et al., 2003 [89]
Drinking alcohol (2-4 drinks/day)	1.4	Smith-Warner et al., 1998 [85]
Postmenopausal hormone use-estrogen plus progestin current or recent use for 5 or more years)	1.3 - 2.0	WHI, 2002 [98] Beral et al., 2003 [99] Collins et al., 2005 [101]
Current or recent use of birth control pills	1.1 - 1.3	CGHFBC, 1996 [124]
First period before age 12	1.2-1.3	Kelsey et al. 1996 [122] Ma et al. 2006 [123]
Being tall	1.2	Van den Brandt et al., 2000 [128]
Not breastfeeding	1.1 - 1.2	CGHFBC, 2002 [135] Bernier et al., 2002 [133]
Ashkenazi Jewish heritage	1.1	Egan, et al., 1996 [81]

Having finished an analysis project, in which students not only analyze and critique the information dissemination process of this medical writing but then are charged with revising a section of the website to include in their final portfolio and present to the class, one student approached me with their project, handed it to me, and, laughing, said, "I want you to know I kept asking myself your favorite question—how is this framing real, material bodies?" And, while the student was making a joke about how many times I ask that question in class, it is my hope that we can ask all technical

communicators, including ourselves, the same kinds of questions. What kind of impact might my writing have on someone who needs this information to assist them in being healthier or to help them to understand their body in a way that works to resist objectifying, individualizing, and pathologizing the very body we inhabit? How can we bring to light issues with the way social systems work insidiously to normalize and construct bodies rather than individualizing and then pathologizing those individual bodies? And, perhaps most importantly, why have we not asked these questions already? What is keeping us from doing so?

As Porter (2004) points outs, technical communicators have an ethical obligation to consider the impact we have on users, intended or not. Included in this call for an ethical approach to considering the impact of technical communication is the role of the teacher and practitioner—we must, as participants in the field, challenge ourselves to be critical, both of information being disseminated by others and especially of technical medical communication being written by us. As disability scholars have reminded us, it is not if but when with regards to disability and illness. We are all keenly aware of that. So are medical advocacy organizations. Employing a feminist disability studies lens will provide a way in which students can further deepen critical engagement with cultural texts—and thus recognize how they, and others, construct and are constructed by varying notions and in particular altruistic, web-based articulations of medical health and well-being.

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Book reviews

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***Topsight: A guide to studying, diagnosing, and fixing information flow in organizations* by Clay Spinuzzi. Amazon CreateSpace, 2013. ISBN#: 978-1481960069**

In *Topsight*, Clay Spinuzzi demonstrates an approach to solving complex problems he has been using to "achiev[e] topsight into organizations for the last 15 years" in a book he describes as friendly, accessible, and easy to use (4-5). By analyzing a field study where he used this method, he encourages readers to try it. Spinuzzi clearly illustrates how he discovers contradictions, discoordinations, and breakdowns that disrupt communication and knowledge-related work flow within an organization, providing readers with both theoretical and practical tools to effectively identify and analyze disruptions and then to recommend solutions. Throughout tool and process descriptions, he advocates for "think[ing] about organizations systematically, like doctors think about illnesses or detectives think about cases" (6).

Spinuzzi's conversational, occasionally playful, tone demonstrates commitment to his goal of reaching a range of audiences (iv). In a few places, though, the tone becomes a little disruptive. For instance, Spinuzzi sounds less like a friendly guide and more like a defensive teacher turned motivational speaker near the close of the foreword: "Along the way, I provide a lot of advice, but I also provide examples, worksheets, and exercises that will help you make your field study happen" (v). Though the idea is appreciated, fellow recovering public school educators might cringe at the language "worksheets and exercises." And many standardized-tested-to-death students may cringe at it, too. Might we find more friendly ways to describe these amazing tools?

In Chapter 1, Spinuzzi defines wicked problems and explains how they function within organizations to make "see[ing] the big

picture" - key for identifying, diagnosing, defining, and addressing them - particularly challenging. Here he also develops the two key metaphors of researcher as doctor and detective introduced earlier. This seemingly linear process may raise two burning questions for readers, however: how can Spinuzzi represent and address (1) messiness in analyzing information flow and (2) disruptions to a field study?

Following the foreword and first chapter, Spinuzzi divides the text into five phases: planning a study, conducting the study, navigating the data, analyzing the data, and reporting the results. While his treatment of each is both concise and detailed, he elaborates most on analysis, to which he allots almost double the space of other phases. He also includes two appendices: a thematically sorted textual reference list and a brief guide for developing a free qualitative data analysis tool. In Phase 1, Spinuzzi outlines, describes, and justifies a complex but replicable and adaptable field study design. He follows with recommendations for taking field notes and collecting data in Phase 2. Smoothly integrating the sample case, he provides clear and concise explanations for concepts and processes.

In Phases 3 and 4, Spinuzzi explores three levels of analytical models: the meso (human); the micro (habit); and the macro (organization, culture). At the meso level, he recommends analyzing communicative events to discover relationships and discoordinations among goals, resources, and practices (186-192). To delve deeper, Spinuzzi encourages us “to dive down to... the level of keystrokes and mouse clicks" (205). At the macro level, researchers examine contradictions within, between, among activities to discover organizational development, values, goals, and contradiction-inspired innovations (227, 211). Readers may discover as they read through these sections that they focus one of these levels to the detriment of others. Identifying those disruptions may drive readers to innovate.

In Phase 5, Spinuzzi effectively explains how to turn data and analysis into claims, reasons, and evidence (247-254) and "descriptive findings into prescriptive recommendations" (256-261). Fellow researches may feel that they have long been aware, but unable to adequately articulate and address, needs and challenges

within research design. Now they can use quick charting methods from these chapters to ensure they discover the causes of breakdowns, discoordinations, and contradictions. Following this phase, Spinuzzi appends two last tools to guide readers in the development of skills useful for interdisciplinary and discipline-specific research-based writing. Many of the wicked problems he discusses are common topics at conferences such as SIGDOC, whose proceedings Spinuzzi directs readers to throughout Appendix A.

In his quest to bring accessible organizational research methods to the 21st century researcher, Spinuzzi exposes the practical elements and messiness of research design and implementation, along with a process for effectively communicating results. Not only does Spinuzzi encourage readers to try this research method, but also to teach it. As a companion site to the book, Spinnuzzi shares on his blog PDFs of all figures, a concise slide show summary, a full course design for "Designing Text Ecologies," a 13-week suggested guide for reading that Spinuzzi recommends for both the undergraduate and graduate level, and reader feedback from both academic and industry professionals using the book (v). Spinuzzi's process has the potential to inspire revisions in the research, writing, and teaching methods employed in the field of technical and professional communication. Balancing theoretical, practical, economic, and ethical concerns when developing a research methodology is a challenging endeavor, but Spinuzzi rises to this challenge by developing a workflow for balancing all these factors and communicating this workflow clearly and effectively.

Book reviews

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Knoblauch, Hubert. *PowerPoint, Communication, and the Knowledge Society*. New York: Cambridge University Press, 2013.

Many of us are familiar with the presentation software PowerPoint. This Microsoft Office program, whether we like to admit it or not, informs the practices of our everyday life. We use PowerPoint to communicate with colleagues about budgetary concerns, to teach our students usage of effective rhetorical strategies, and we even use it to create mock prototypes for web-based applications. And while some of us believe PowerPoint to "weaken verbal and spatial reasoning and almost always corrupt statistical analysis" (see Edward Tufte's *The Cognitive Style of PowerPoint*, 2003), still others have adhered to the 'less is more' adage, by using PowerPoint to support audience interaction and connection via simple visual techniques in a slide format (see Lawrence Lessig's the "Lessig Method" of presentation, and also www.lessig.org). Regardless of our views on the presentation software, *PowerPoint, Communication, and the Knowledge Society* by Hubert Knoblauch asks readers to consider the impact powerpoint (and PowerPoint, this distinction is explained below) has had and will continue to have on Western society.

The book begins with a discussion on the often-mixed meaning of powerpoint and PowerPoint. On the one hand, PowerPoint refers to the presentation software, complete with slides produced by it, which is usually synonymous with Microsoft Office. On the other hand, powerpoint means using software to project slides to a live audience; in this second sense, according to Knoblauch, powerpoint is an event, "a communicative action by a presenter, attended by an audience, involving technologies, such as a computer screen, a projector, or a slide, as well as activities performed in relation to both audiences and technologies" (3-4).

Through a brief discussion of communication culture, and large-scale social developments (i.e., information and knowledge societies), Knoblauch presents his first argument—powerpoint is an activity or action that is performed by an embodied actor in a particular time and place. This activity is sustained by objects and technologies (5). Moreover, a powerpoint presentation is a communicative event that not only reflects the aspects of society that most influence the presenter, but also the positionalities of the presenter and participants in the event. What's more, the communicative event, or powerpoint presentation, is indicative of larger cultural signifiers and values. A communicative culture, for Knoblauch, constitutes "the forms of communicative action, their patterns, and [their] genres," not simply the static objects, signs and technologies that we often equate to a powerpoint presentation (6). Thus, powerpoint presentations are rendered meaningful in the embodied performance of the presentation; they transform information into knowledge, and quite literally, according to Knoblauch, are the convergence of both the "information society" and "knowledge society" where the "corporeality and sociality" of the performance add "new meaning to the information" (18, 20).

Knoblauch further situates his main argument in a detailed discussion of the socio-cultural history of powerpoint. Powerpoint, as Knoblauch begins, is to Western society as moving pictures and a screen are to film (26). Additionally, Knoblauch points out the double invention of PowerPoint (the presentation software) by both Macintosh and Microsoft, and the contribution the software made to standardization and integration procedures within Microsoft Office (including PowerPoint, Excel, and Word) (32). The second chapter ends with Knoblauch recalling PowerPoint's tremendous, global success, and also the many assessments (both negative and positive) PowerPoint has endured over the last fifteen years (see Lowry 1999; Lobin 2009; Stark 2008; Tufte 2003 & 2006; and Yates and Orlikowski 2008).

The other major sections of the book (chapters 3, 4 and 5) analyze powerpoint via the three levels of genre analysis and communication culture: the internal level (e.g., slides and speech), the intermediate/situative level (e.g., body formation), and the external level (e.g., meetings). To explain, Knoblauch performs a

rhetorical analysis of the visual and communicative components of powerpoint software that exemplify the multimodal and linguistic characteristics that make up knowledge. These knowledge "objects" are not determined by technology but rather are "co-constructed by the way that speech and slides are enacted by communicative action" (101). Further, the presenter's body and the bodies of the audience, the space in which the presentation takes place, and the technology itself make up the second or intermediate level. This level most notably considers the activities in and surrounding the presentation. The communicative actions of the presenter and audience members bring to life the objects, signs, and information that comprise the powerpoint presentation; the technology, too, takes on an active role in this level by "doing the showing" of the presentation. The triadic structure of powerpoint, that is the presenter, audience, and technology, convert data to information, and information to knowledge (151). We can say, then, that powerpoint is ever-present and, at least somewhat, responsible for the institutionalization of academic and non-academic meetings and even group projects within our classrooms.

As we see by the end of the book, the communicative culture in which we live is anything but uniform. More than a history of powerpoint or PowerPoint, or a 'how-to' book for novice presentation software users, *PowerPoint, Communication, and the Knowledge Society* asks us to not only consider the differences between information and knowledge, and between the presentation as a document and as an event, but also the implications of using powerpoint (and PowerPoint) as a gate-keeping device, one that allows certain kinds of socially-acceptable knowledge to pass *as knowledge* in our offices, businesses, and classrooms.

Book reviews

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Buley, L. *The user experience team of one: A research and design survival guide.* Brooklyn, NY: Rosenfeld Media, 2013. ISBN #: 978-1-933820-18-7

Explaining user experience is often a challenge, especially when dealing with an audience who is unfamiliar with it. Professional communicators who don't have a UX background often don't fully understand the concept of UX or what the importance of its practice is to their specific industry. In *The user experience team of one*, Leah Buley offers a guide for training new UX teams, or those lone professionals indicated by her title, on why this field is important and how its tools can be beneficial if used properly. Using this book will allow members of any design or communication-based industry to find their footing within the world of UX from starting their first project to building their future career.

The book also enables experienced audience members to build on what they know. The core audience for the book is individuals already working in digital product teams (web designers, software developers, mobile developers, etc.) and those wanting to transition into the UX field. A secondary audience would be those already working in UX who wish to work more competently with cross-functional teams (or teams from different departments within the same organization). The book may also be beneficial to students who are interested in the field of UX, as it contains a variety of methods that can be used while working on projects. It's a book that can be used by anyone who wants to learn more about the field of user experience.

The book is short and thus appears to have been designed to be used when working. Buley doesn't waste time trying to describe every in and out of the field. She gives a brief overview and leads

the readers into real scenarios that will be helpful when working on projects. One of the most helpful aspects of the book are blue boxes that contain tips and tricks for designers to use, such as remembering to follow up with clients and keeping information brief. The book also contains visual examples of deliverables such as questionnaires, project plans, and storyboards, which are rarely seen by those new to UX. Keeping information in lists and easy-to-read method overviews allows the reader to find information quickly. This book is useful as a checklist on projects, as a refresher when starting a project, for comparing and contrasting individual methods, and as a guide for explaining confusing UX topics to audiences who are unfamiliar with it.

The user experience team of one is split into two parts, titled "philosophy" (chapters 1-4) and "practice" (chapters 5-10). The first four chapters were created for an audience that is just crossing over into the field. Experienced UX designers would already know most of the information located in these four chapters. In the philosophy section, she establishes how to have a successful foundation, how to build support, and how to involve others in a UX project. One of the best of these sections is "Building Support for Your Work," which offers an overview of working with teams to bring about change within an organization.

Part two is the meat of the book, and focuses on the core of user experience work. This section contains practical methods that can be used in UX. For example, Chapter Five, "Planning and Discovery Methods," includes six different methods: UX questionnaires, UX project plans, listen tours, opportunity workshops, project briefs, and strategy workshops. Each method contains sections that spell out a brief overview, average time to complete, and when to use the method. There are also sections within each method called "try it out." These sections prompt the reader with questions ranging from goals to risks to strategy.

In Section II of the book readers will find chapters on research methods, design methods, testing and validation methods, and evangelism methods. The book concludes with a chapter on what is next for the UX field. In this final chapter, Chapter 10, Buley reflects: "While this book is focused heavily on methods, ultimately, winning the hearts and minds of the non-UX would

require more than method-by-method or project-by-project thinking. It requires you to get clear with yourself on your own master plan" (228). Throughout the book readers are challenged to learn more about their own positions in the field of UX and to try out new methods to gain new results through their work. However, one of the main things to pull from this book is a "master plan," or what the reader wants to gain through doing UX work and how they can go about doing so. Using this book may help readers find a better footing in the field of UX and in the long run may allow them to learn how to promote the importance of user experience within their specific industry.