

Communication Design Quarterly

Published by the Association for Computing Machinery
Special Interest Group for Design of Communication
ISSN: 2166-1642

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Communication Design Quarterly

ACM SIGDOC (Special Interest Group Design of Communication) seeks to be the premier information source for industry, management, and academia in the multidisciplinary field of the design and communication of information. It contains a mix of peer-reviewed articles, columns, experience reports, and brief summaries of interesting research results. *Communication Design Quarterly* (CDQ) is archived in the ACM Digital Library.

We invite you to contribute in any of the following areas:

- Peer-reviewed articles. Articles that cross discipline boundaries as they focus on the effective and efficient methods of designing and communicating information; disciplines will include technical communication, information design, information architecture, interaction design, and human-computer interaction.
- Experience reports. Experience reports present project- or workplace-focused summaries of important technologies, techniques, or product processes.
- Interesting research results. Short reports on interesting research or usability results that lack the rigor for a full article. For example, pilot studies, graduate student projects, or corporate usability studies where full details can't be released.

We are also interested in proposals for guest editing special issues. As a guest editor, you would be responsible for providing two peer reviewed articles on a specific topic and, potentially, coordinating with the column editors so their columns can complement the issue's theme.

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Welcome to *Communication Design Quarterly* issue 3.4.

Be sure to read the Chair Notes, where Liza Potts (the SIGDOC chair) provides a wrap up of the 2015 SIGDOC conference and information about the 2016 conference in Arlington, VA. Plus, a call for volunteers for SIG officers. Please consider running for a position and helping the SIG grow.

This issue contains seven articles and one book review focused on the rhetorics of health and medicine and its importance in communication design, with guest editors Lisa Meloncon and Erin Frost. It's one of the longest issues of CDQ we have published and definitely one of the best.

The next issue, in November, will be guest edited by Kirk St. Amant. looks at international communication and the design of communication. In fact, we have several special issues lined up over the next year or so.

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

Notes from the Chair

Liza Potts

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Reflecting on the Conference

Wow! What a fantastic conference we had together in Limerick, Ireland. Thank you for joining us, sharing your research with us, and enjoying the banquet with us. It was great to see so many old and new faces come together this year.

It is no small feat to pull off a conference for 81 attendees, let alone one in another country where you are doing so much of the arranging long-distance. Booking space, locating lodging, working with different vendors, and finding us the perfect green swag. A special thank you to Kathie Gossett for creating such a memorable and welcoming conference! Thank you to Dawn Armfield for working on our program, shepherding the peer review, and making sure all of us turned in papers that were not only useful, but adhered to the glorious ACM template. Thank you to Claire Lauer, who had 21 attendees at the inaugural research network event. And thank you to Douglas Walls, for running a fantastic workshop on social justice and user experience.

As I mentioned at the conference, we had 34 students in attendance. This number is a testament to the hard work of our volunteers who helped launch our Microsoft student competition. It's also a testament to those of you who mentored, supported, and helped sponsor these students on their way to the conference and beyond. Thank you, Stephanie Vie, for leading these efforts. And thank you to all of our volunteers who spent part of their conference time judging the competition: Ben Lauren, Clay Spinuzzi, Sonia Stephens, Yvonne Cleary, Rudy McDaniel, Sarah Gunning, Kathryn Northcut, Marie Moeller, Brett Oppegaard, Claire Lauer, Emma Rose, Marjorie Rush Hovde, Joe Moxley, Kirk St. Amant, and Michael Trice.

I am glad that so many of you felt welcome at our conference, and I hope to see you again at next year's conference!

Planning for Next Year's Conference

Speaking of which, we are ready to launch the CFP for SIGDOC 2016. Held near Washington, D.C., next year's theme is Bridging (between disparate groups, different applications, industry and academia). Our conference chair, Dawn Armfield, will be collaborating with our colleagues at George Mason University.

Our conference will be hosted in Arlington, Virginia, a suburb of Washington, D.C. Arlington is in the center of communication design for the national government, with nearby headquarters for the National Science Foundation and the FDIC within walking distance from the conference hotel. Our location allows for easy access to three major airports, an excellent train system, and abundant parking. Similar to this year's conference, SIGDOC 2016 will be a family friendly event with several museums and other nearby attractions - many of which are free to the public.

For more information, check out our conference website as it evolves: <http://sigdoc.acm.org/conference/2016/>

Coming Soon: Elections!

We will be holding elections in 2016 for a new slate of SIGDOC Executive Committee Officers. I want to encourage all of you (yes, you!) to run for office if you are passionate about our SIG and want to help to us continuum our fantastic momentum.

As the elections committee chair, I want to give you a bit of background about the different roles and responsibilities of our officers:

Chair: Call and preside at SIGDOC executive committee and business meetings. Appoint any vacancies and set up the Board. In my case, I've also worked to be a good representative for SIGDOC at the other conferences I attend, and I've refocused the SIG to help with mentorship of young scholars and scholars who are transitioning into SIGDOC

kinds of research. I also write the annual report for ACM, but I do that work with the help of the rest of our Board.

Vice Chair: Assist the chair in leading and managing SIGDOC. Preside over meetings with the Chair is absent. The Vice Chair should also be a good represented of our SIG and help the chair make useful decisions. In my case, Claire is my go-to for help in decision-making for the SIG and appointing new board members.

Secretary/Treasurer: Maintain records and correspondence of SIGDOC. Keep the minutes of business and executive committee meetings of SIGDOC. Manage SIGDOC finances according to ACM policy. This role is super important, since we need our secretary to be a good historian for the SIG, and we need our treasurer to be a good financial manager for us. Right now, this position is united into one role. As we expand, we can think about revising our bylaws to split this position into two positions.

All of the other board positions are nominated by the Chair. Obviously, a strong and wise Chair does this in cooperation with the other officers. Benevolent leadership for the win, my friends! For the positions that help connect SIGDOC to our sister organizations (ATTW, CPTSC, etc.), I work with the leaders of these organizations to find the best fit. Then I chat with our officers and mentors to help make my decision. Then I talk to the new volunteer. We chat and talk about fit, goals, and needs. There isn't any magic here - I look for volunteers who I think would be a good fit for the SIG, show great leadership potential, and are passionate about what we do. That's it. So if you want to volunteer as a new board member, I highly recommend contacting the new chair when she or he is elected. Or start by volunteering to help with the conference or outreach. It's that simple.

Expect to see an email about elections this Fall and good luck to anyone who decides to run!

Special Issue Introduction

Charting an Emerging Field: The Rhetorics of Health and Medicine and Its Importance in Communication Design

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ABSTRACT

The introduction to this special issue on the rhetorics of health and medicine charts the formation of an emerging field and its importance to communication design.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design,

Keywords

Rhetorics of health and medicine, medical rhetoric, health communication, health communication design

The introduction to this special issue on the rhetorics of health and medicine charts the formation of an emerging field and its importance to communication design. In today's often bewildering world of scientific, technological, cultural, and political change, health and medicine faces human problems and possibilities that transcend traditional academic disciplines and boundaries. For many years, an often-overlooked aspect of health and medicine was the communicative dimension, that is the discourses—oral, written, visual, and technological. When we speak of discourses, we are thinking about lab notes, case reports, electronic medical records, patient notes, regulatory documents, insurance claims, online health information, patient education materials, and pharmaceutical advertisements, to name but a few. Because of its everydayness, the written and verbal exchanges between patients, doctors, providers, administrators, and other such stakeholders is

often overlooked. In large part, however, these exchanges and other forms of communication are one of the most important dimensions of health and medicine, particularly when considering how to improve patient care and to encourage greater participation in prevention and wellness programs.

In recent years, health communication has grown in visibility because of the proliferation of technologies and the ease at accessing information. The federal government finally recognized the importance of health communication “as a critical area,” in the renewal of Healthy People 2020 (U.S. Department of Health and Human Services, 2014). In addition, the formation of the non-profit, Patient-Centered Outcomes Research Institute (Patient-Centered Outcomes Research Institute, 2015), the continuation of the federal Agency for Healthcare Research and Quality (U.S. Department of Health and Human Services, 2015), and initiatives such as the Institute for Patient- and Family-Centered Care (Institute for Patient- and Family-Centered Care, 2015) all demonstrate the need for experts who work on the discourses produced in health and medicine.

The ongoing emphasis on communication at the national, governmental level mirrors an increasing interest at the academic level. Barton (2005) noted “the research literature of medicine is vast, even in the area of medical communication, with work in a wide variety of fields, including history, sociology, anthropology, linguistics, literature, communication studies, and behavioral science” (p. 245). In the ten years since Barton's statement, scholarly investigations have not only continued in these areas, they have grown in the areas directly related to the readership interests of CDQ. Scholars in communication, technical and professional communication, and rhetoric and composition have recognized that we have the potential to play increasingly important roles on interdisciplinary health research teams, to help improve patient-centered language and practices across a multitude of media and document types, and to contribute to solving such problems as the health literacy crisis that leaves some 90 million Americans unable to process the most basic health information (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011).

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Communication Design Quarterly. ACM SIGDOC, New York, USA.

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Part of our roles as scholars is to also bring into focus that health and medicine are an important aspect of culture because “[i]n establishing the power of the norm, medicine is a crucial discipline, because medical knowledge mediates between the order of the body and the order of society” (Mol, 2002, p. 60). This order is maintained through multiple types and kinds of communication practices and products. What rhetorical studies have taught us is that the discourses produced in health and medicine “not only deliver information, they structure it as well” (Derkatch & Segal, 2005, p. 139). As such, communication about health and medicine is ever more important in shaping our understandings of our cultures, our politics, and ourselves.

Because of its importance, we wanted to chart the current landscape and diversity of work being done around issues of health and medicine. We both knew of a lot of interesting work going on, but we wanted to craft a call that was inclusive of this diversity in theoretical or methodological orientation and to a diversity of method. We had few expectations of what we may or may not receive as far as submissions were concerned. But once the call closed and we started reading the submissions, we realized that this issue would help to broadly define an emerging research area.

RHETORICS OF HEALTH AND MEDICINE: A BRIEF HISTORY

In the 2013 commentary in Poiroi, Scott, Segal, and Keränen advocated for naming this emerging field: rhetorics of health and medicine (n.p.). They called on scholars to use this name to help identify and build a body of scholarship. While all names can inspire dialogues and strong opinions, we are situating this special issue under this larger umbrella. One of the binding approaches to the essays presented in this special issue and to a larger body of scholarship is the focus on “how specific symbolic patterns structure meaning and action in health and medical contexts and practices” (Keränen, 2012, p. 37). Moreover, scholars are attempting to understand how the discourses create situations and allow participants and users to act on them, as well as constitutive aspect as to how these discourses create and perpetuate situations.

What we, and Scott, Segal and Keränen, are referring to as the rhetorics of health and medicine has a longer history under different names. The longest traditions are found in Communication studies where “health communication” has had a scholarly publishing presence since the late 1980’s. The journal, *Health Communication*, started in 1989 and is now published 10 issues a year. But like many research areas health communication research is not a singular monolithic entity as evidenced by the analysis of the articles published in the journal (Kim, J.-N., Park, S.-C., Yoo, S.-W., & Shen, H, 2010).

Emerging areas of research can often be tracked through special issues of journals, much like this very one. In 2000, Hefferson and Brown guest edited an issue *Technical Communication Quarterly* and in 2005 Barton followed with one in the *Journal of Business and Technical Communication* and a topical focus in *Written Communication* in 2009. In 2014, Keränen edited an issue of the *Journal of Medical Humanities* on with an emphasis on publics. What helped to feed this work was a group of scholars who sought each other out. Scholars have continued to meet at special interest groups, pre-conferences, and other events, and in 2013 the first stand-alone conference was held at the University of Cincinnati, Discourses of Health and Medicine (<http://medicalrhetoric.com/>

symposium), which was an impetus for this journal issue.

It was also during the 2000s that the first monographs appeared (Bennett, 2009; Berkenkotter, 2008; Scott, 2003; Segal, 2005; Stormer, 2002). By 2010, the field was beginning to see a steady rise in the number of books across a range of subjects. For example, we have produced a handful of books looking at topics associated with gender such as depression (Emmons, 2010), breastfeeding (Hausman, 2011; Koerber, 2013), and childbirth (Seigel, 2013; Owens, 2015). We have added theoretical dimensions (Fountain, 2014; Graham, 2015), and we have examined genes and cells (Happe, 2013; Hyde & Herrick, 2013; Lynch, 2011); intercultural issues, (Ding, 2014), disability (Meloncon, 2013; Walters, 2014), and mental health (Johnson, 2014). Two edited collections that afford a range of approaches and topics also appeared which helps to frame the field to those unfamiliar with it (Hefferson & Brown, 2008; Leach & Dysart, 2010).

The field’s production is more impressive when the books are read alongside the growing number of articles. While rhetorical analysis can take on a number of forms, we have examined specific rhetorical features such as tropes and figures (Angeli, 2012; Jensen, 2015; Popham, 2014) and appeals (Kopelson, 2013; Molloy, 2015), as well as attention to narrative (Arduser, 2014; Segal, 2012; Teston et al., 2014). We continue to investigate genre (Schuster et al, 2013; Schryer et a. 2012; Skinner, 2012), to look at visual dimensions (Donovan, 2014; Welhausen, 2015), to reflect on methods (Angeli, 2015; Meloncon, 2013; Teston 2012), and to consider the public and political aspects of discourse (Arduser & Koerber, 2014; Derkatch & Spoel, forthcoming; Welhausen & Burnett, forthcoming; Lawrence, Hausman & Dannenberg, 2014).

We also have a growing body of work in online health communication (Arduser, 2011; De Hertogh, 2015; Grant, et al., 2015; Koerber & Still, 2008; Kopelson, 2009, Moeller, 2014, Owens, 2011, Segal, 2009). Finally, scholars are producing interesting case studies that interpret language and communication around specific topics, such as specialized providers (Burlson, 2014), obesity (Guthman, 2013), pain (Graham & Herndl, 2013), vaccines (Lawrence, 2014), patient use of information (Bellwoar, 2012), and literacy (Willerton, 2015).

The vitality of this scholarship underscores the vitality of the emerging field, but it also illustrates one of the problems. That is, scholarship is spread across numerous journals that in some cases aren’t well known outside of the narrow disciplines or specialties we sometimes inhabit. But, the importance of sketching out this bibliographic history is to set the stage for the importance of the articles collected here. This issue marks another moment in the scholarly history of this emerging field. In doing so, we openly acknowledge that there is not consensus on what to call this emerging field. We have chosen to advance the rhetorics of health and medicine simply because we—those of us involved in this enterprise—need to settle on some term that we can rally around and consistently use and mark what we do, even as we still debate it.

Unlike the debates happening between medical humanities and health humanities about boundaries and territories (see Crawford, Brown, Baker, Tischler, and Abrams, 2015), the rhetorics of health and medicine are comfortable navigating a myriad of sites and locations and texts to destabilize the paradigmatic privilege of doctor and patient. We are comfortable working with a host of actors within health care from patients to care givers and nurses

to policy makers. Moreover, rhetoricians of health and medicine understand that meaning and knowledge making can come from traditional (e.g., scientific studies) and non-traditional sources (e.g., online patient communities).

One of the reasons that we make this move is because we are comfortable with the humanistic emphasis implicitly, if not explicitly, associated with rhetoric. While some may argue that we need to only focus on “health,” the inclusion of both terms allows the field to prioritize the humanistic viewpoint, while also signifying the critical gaze we offer to the physician centric point of view and the influence of the biomedical institution and industrial complex. There is a driving need to better understand the human side of health care through a variety of disciplinary perspectives that are most notably humanistic and social science in orientation. “The knowledge the humanities offer us is like no other, and cannot be replaced by scientific breakthroughs or superseded by advances in material knowledge” (McClay, 2008, p. 38). For example, a patient with a terminal illness may rely on science through medications and treatments to help alleviate symptoms and discomfort. We have a long history of evidence that pain medications can educe discomfort in patients, but this is a distinctively scientific view. What the humanistic aspect of it can bring is an understanding of how a patient reacts to and experiences both the pain and the medication in her daily life and also how her experiences effect those around her. This understanding advances knowledge by providing insights into the human condition, its perseverance, its dignity in times of distress, and this knowledge can potentially improve end of life discussions as well as decisions and the types and kinds of medication used to prolong life. Issues of quality of life are distinctively humanistic is within the realms of the rhetoric of health and medicine.

There is also a capaciousness to rhetoric that affords scholars lots of room to maneuver and find their own voice, while still feeling as though they belong to a specific community. A variety of approaches can find their way under the tent of rhetoric of health and medicine including disability studies, feminist approaches, visual communication and rhetoric, theoretical approaches from science and technology studies, quantitative approaches, as well as textual and qualitative approaches from scholars in sociology, anthropology, literature, history, and art. Moreover, the capaciousness of rhetoric and the long standing belief that it is a useful tool in both creating and critiquing discourse helps us to mark the territory of the field.

This issue is a perfect example of this staking out a territory. The essays included (discussed in the next section) illustrate the wide variety of approaches that can be taken. However, what binds the diverse texts and approaches together is their emphasis on understanding the contextual situations of the discourse and understanding what those contexts (including language, place, people, and actions) mean for health and medicine.

When we speak of humanistic and rhetorical, one of the defining features of that orientation is the potential and possibility of affecting change. Rhetoric of health and medicine also has an applied component that appeals to many scholars who want to influence the delivery of care and potentially improve patient and community outcomes. Particularly in health and medical discourse, opportunities exist for research—such as that presented here—to make significant change. Take for example the ongoing emphasis in health literacy and the need to improve all sorts of communication

channels for patients. McNaughton, et. al., (2015) discovered that patients with low health literacy who had suffered acute heart failure were 35% more likely to have died within 21 months after hospitalization. To move to another example, research on poor information design of medication leaflets and labels (Dickinson, Teather, Gallina, & Newsom-Davis, 2010) has potential to enable improved health outcomes through increased health literacy. It is in this practical focus that the rhetorics of health and medicine most directly align with work occurring in communication design.

Rhetoricians of health and medicine can potentially expand the scope to how discourse is created, used, disseminated, and also critiqued. We offer a unique viewpoint on how to communicate and educate. We want to expand the sometimes myopic vision that generally plagues the current medical system where patients, families, care givers, and others views are often discounted in favor of a positivist hierarchical view that doctors and science are the only viewpoints that matter. By upsetting that paradigm, rhetoricians of health and medicine, and their scholarship, can directly intervene into many of the problems plaguing our health care system.

VISION FOR THE ISSUE: BREADTH OF AN EMERGING FIELD

We had few expectations when we sent out the call for the special issue. By that we mean, we did not have a preconceived idea of what types of kinds of essays that we would include. The one thing we did know as we were working through the task of selecting proposals was that we wanted to find a diverse range of voices and/or topics. We wanted to have representation from across the different disciplines and fields working in the rhetorics of health and medicine, as well as a diverse range of topics and approaches. Thus, we opted to go with the concept of breadth rather than depth around a specific topics, idea, or methodological approach.

In addition to deciding our broad approach, we made several other decisions that merit mentioning. As is a general standard, essays were blindly reviewed by two other scholars, one that was considered an expert in the subject matter of the essay and a more general reviewer from the CDQ reviewer pool. We took this approach because we wanted to present a collection of essays that would appeal to those who identify as working in the rhetorics of health and medicine, while also showing the importance of the breadth of the work in this area for broader audiences. As we discuss in the next section when we introduce the essays, we hope CDQ readers can see how the methodological choices and methods used in the rhetorics of health and medicine have much to offer back to the multiple audiences who read this journal.

The essays included here explicitly and implicitly point to different ways that ideas, texts, methods, practices, and technologies work in a variety of healthcare contexts, and more importantly, how that information is designed. The essays also bridge theory to practice. While often accused of being esoteric or disconnected, theory provides scholars the opportunity to view the world differently, and in doing so to offer ways to improve situations or to invoke action. In the case of health and medicine, the scholastic emphasis and unifying feature of looking at discourses—written, oral, visual, material—means that our theoretical orientations can work toward improving the function and use of those same examined discourses.

Finally, focusing on breadth of the emerging field enables us to emphasize the possibilities of the field and what it is capable of

doing. Most scholars working in this area would describe the work they do as being applicable to “real-world” contexts in ways that other scholarship may not be. In thinking through issues of what it is that we do and what our work is capable of doing, the essays in this issue provide a landscape of possibilities and potential.

INTRODUCTION TO THE ESSAYS

Health and medicine practice and care takes place in a variety of locations, but rhetoricians have been slow to take up the examination of actual places. “There is a rich and growing body of research across social, cultural, and health geographies that makes space for and foregrounds place in much more explicit ways and the situated nature of being and becoming urgently require the theoretical insights of those who specifically focus on the nature of space and place” (Atkinson, Foley, & Parr, 2015, p.2). In an answer to this need, we have the international perspective of Connellan (Art, Architecture, and Design), Riggs (Social Work and Social Planning), and Due (Psychology), who take us on a critical tour of a mental health facility in Australia by examining the mental health physical space from the perspective of glass. They ask the provocative question of whether glass can speak? After a short history of architecture, they offer insights from their ethnographic study and show how glass can be a medium for communication. In the call for papers for this issue, we encouraged submissions that were not traditional and pushed the limits to how we think about discourse. This essay does that, and we encourage readers to take their questions, insights, and analysis as a way to encourage innovative considerations of material aspects of spaces. More specifically, this essay can prompt (re)considerations of the materiality of the spaces and the impact those spaces have on the communication design of discourses in health and medicine.

Moving to a different kind of space, there are three essays that are inter-related—Lazard & Mackert, Mogul & Balzhiser, and Burleson—around issues of online space. These essays take up the issue of online health information from different, yet complementary perspectives. Lazard and Mackert provide a comprehensive review and synthesis of literature about how to design online health information. They only focused on the theory-driven and tested research, and they found that the design principles, which directly impact increased attention, favorable evaluations, and greater information processing abilities, include: web aesthetics, visual complexity, affordances, prototypicality, and persuasive imagery. Their discussion of these topics should be a starting place for online health communication design in the coming years.

Following Moeller’s (2014) call for more historical examinations of online information, Mogul and Balzhiser evaluate direct-to-consumer pharmaceutical advertisements, and their analysis provides an important case study on why rhetorical analysis is needed, while also pointing to how healthcare consumers are created. Burleson’s empirical study on 17 websites if top hospitals specifically takes on how they communicate with their patients through an in-depth look at the role of hospitalists. It will probably come as no surprise that Mogul and Balzhiser and Burleson find that there is much room for improvement, which opens up space and exigency for the work of communication designers.

In an entry written by a new scholar, Novotny offers the case study of reVITALize Gynecology infertility initiative, a health intervention project, to illustrate the expansion of the feminist research approaches. Novotny’s analysis of the reVITALize

initiative illustrates that public stakeholder input is vital to health intervention projects. By using a feminist approach, Novotny shows that while the initiative appeared to welcome public participation, it was in fact limiting their participation. A strength of Novotny’s essay is its ambitiousness in combining theoretical orientations to expand the way research is currently done.

While Novotny’s essay shows the limitations of health intervention, Kuehl and Anderson’s case study illustrates both successes and failures. In their essay, Kuehl and Anderson analyze how a hospital designed public communication through promotional efforts regarding their no-cost, volunteer doula program. Using the rhetorical concepts of presence and absence, their analysis found a number of communication design ideas that worked successfully, while also finding and recommending ways to improve the material. In some ways, this essay complements Lazard and Mackert by providing specific ways to improve communication design. Read together, Novotny and Kuehl and Anderson offer examples of ways to incorporate theoretical models into the analysis and design of health and medical discourse.

Finally, Atvgis et al. take us in another direction to the rural areas of West Virginia as they report on assessing the accuracy of a trauma patient protocol system, M.I.S.E.R (Mechanism of injury, Injury to the patient, vital Signs, Environment, and Response to treatment). Acronym based protocol systems are design to reduce error in a crisis communication situation, and Atvgis et al. set out to use M.I.S.E.R. to increase the efficiency of communication from field personnel (e.g., paramedics) to medical command (e.g., those at the receiving hospital). Their findings show that different combinations of technology and media do effect the transmission of information. As a data driven case study, this essay provides of model of field based research methods that improved the design of communication through detailed data analysis. While some may push back against quantitative studies, Atvgis et al. demonstrate the value of a different kind of humanistic approach.

All of the essays directly and indirectly implicate the importance of care. In a recent commentary, St.Amant (2015) declared, “in many ways, medical and health information connects to one central principle: care” (p. 39). Care is a great way to center and help contextualize what it is that we do, and the approach to care would be a distinctly humanistic enterprise, that is, in helping us understand the deeply human aspects of what it means to be a patient or care giver or any other person within the health care system and what those people experience in that system. “Care is integrated with and arises from relationship—in the knowing and feelings of others. Therefore, considerations of care are bound up in epistemological concerns and cannot be easily segregated from human experience” (Hamington, 2004, p. 33). This is what we do as researchers quite well. Connecting our work to care and empathy illustrates the importance of the rhetorics of health and medicine as key to understanding or to gaining insights into what it means to experience the healthcare system.

Care is an important concept that provides a unifying point across disciplines and approaches. Jones (2013), a designer, recently wrote a practiced based book, *Design for Care*, which argues that design practices and methods can improve healthcare. Jones claims that design and designers are essential to improving healthcare to enable “better communication, understanding, and knowledge transfer between healthcare fields and work experiences” (p. xvi), which is not so different than the aims of researchers and practitioners in

the rhetorics of health and medicine and in communication design. Jones' stance lacks an awareness of the writing and communication research that is essential to his achieving his own goals, but he does acknowledge that "design, in all of its disciplines and methods, is finally emerging in new and influential roles in all types of healthcare services" (p. xvi).

Thus, what is useful about Jones' work broadly is that it opens up a space for communication design to intervene in healthcare. These essays, as representatives of the rhetorics of health and medicine, are examples of the type of everyday communication design interventions that can impact patients directly. What communication design from a rhetorical perspective can offer healthcare is a focus on patient experience, which includes an empathic focus found through our methods. To talk of communication design as it relates to health and medicine is not a new or novel approach. But what is particularly important about the essays in this issue is how they intervene into existing conversations in design and in medicine.

Health information must be timely, accessible, accurate and understandable. The proliferation of information found online and accessed via mobile devices increases this demand. Thus, research at the intersection of communication design and the rhetorics of health and medicine, such as evidenced here, is focused on patient experience and improving the design of information. Improved communication design can help patients

- Better understand their own health and treatment
- Maintain their own health records
- Facilitate care options by participating in shared decision making

Patients who can understand, maintain, and facilitate their care more easily could potentially achieve two important goals in healthcare: getting better outcomes for patients through compliance, particularly for patients with chronic conditions, and reducing overall health care costs.

The rhetorics of health and medicine bring a unique viewpoint to bear on the numerous discourses—written, visual, verbal, technological, or material—produced in health and medicine and that viewpoint exposes how discourse helps and hinders the delivery and consumption of care.

LOOKING FORWARD

We hope that the essays here offer the opportunity for reflection on the breadth of the work being done in the rhetorics of health and medicine and how this emerging field is complementary to communication design. The essays in this issue are examples of the many directions that scholars can take to build on and to extend, and as we come to close this introduction, we leave you with additional thoughts on where we should go next.

While we were received a host of proposals for this issue and we are also aware of numerous ongoing projects, we were surprised and are surprised at the dearth of work that is specifically taking up the issues of ethics. It could be that we have an implicit ethical stance in all of our work, but our research allows us to intervene comfortably in ethical discussions, particularly the growing conversations about bioethics.

Another direction of new engagement that is critical and not yet receiving the attention it needs is technology and its

impact on and in health and medicine. Hausman (2014) merges together feminist approaches with critiques of technology in her examination of the visualization of fetuses, and it signals the ripe ground ready for exploration. Following sociology (see Lupton, 2014), scholars could examine areas such as wearables (there is an upcoming *Rhetoric Society Quarterly* issue on this topic that includes a rhetoric of health and medicine perspective), the impact of EHRs, big data, and the influence of technology on agency, to name but a few.

One area that the rhetorics of health and medicine can contribute back to other related fields and disciplines is in our work with methodologies and methods. The essays in this issue took on a number of methods and methodological orientations. However, potential also lies in thinking through our methodological approach of entering specific sites and locations by using the insights from Smith's (2012) work with indigenous peoples. While Novotny's essay gives us a take on feminist methods, we feel there is also an underexplored dimension to what a feminist orientation can offer to the way we research in the rhetorics of health and medicine. For example, feminist perspectives reveal insights into ideological perspectives of the other that are extremely important in a healthcare industry that maintains persistent hierarchies and classes.

Another area in need of additional work is with regard to theory. While there are some great models on what theory can bring to research in this area (see Scott, 2003), we could benefit from a closer alignment with critical theory (see Zoller, 2005), queer theory, and disability studies, as well invoking a theoretical stance to understand communication design in different ways. Kuehl and Anderson's use of presence and absence from rhetorical theory opened up new avenues in the way information could be designed more effectively. Looking to these theoretical approaches can help the emerging field be more critically aware and push against normative and hierarchical discourses found not only in the medical encounter but also found in community based research or locations of health disparities.

We also need to consider engagement with different types of evidence, communities, patients, and other active participants in healthcare, and we need to determine ways to move the work we do across disease domains. Both of these push the established boundaries, but if accomplished will allow the field to have an impact. For example, will our findings hold up when we use the same approach in another area? Can we port the approach to one particular subject to other areas? What are the stakes if we can or if we can't? These sorts of questions about the broader implications of our research are the logical next steps in research as our canon builds.

Many readers of this journal and those in the rhetorics of health and medicine will claim to be inter-, cross-, and trans-disciplinary, and we want to encourage a more active and critical engagement in both the practice (our teams and in authorship) and in scholarly orientation (reading across boundaries). This is not a call to end disciplines; it's actually the contrary. Collaborative work across disciplines brings insights that a single view cannot, which is something evident in Lazard and Mackert's cross-disciplinary investigation into "best practices" of online health communication design. We need to embrace this as we move forward and more importantly, to write about it—both the good and the bad and the ugly of the research process and the findings.

We need to focus specifically on what it means to work in the area of rhetorics of health and medicine and how those of us who may not take a completely “rhetorical” approach can still feel at home. The inclusion of the piece by Atvgis and colleagues illustrates that there are similarities in research methods and methodologies even when the authors themselves may not consider their work rhetorical. But what was striking about Atvgis et al. was their considerations of the final outcomes and how to improve patient care in rural settings, which is similar to approach and implications as Angeli’s (2012) work in emergency medical services. In other words, there is an approach and orientation that moves us past defining what we do through a singular term, but engaging in conversations about boundaries, definitions, and what it is that we really do keep a field vital and flourishing.

We want to encourage scholars in this area and considering working in this area to critically engage with the growing body of scholarship that already exists. Even though it may true that many specific sites and case studies are unique, it is likely that those sites and the findings do connect in some ways to existing scholarship. We would question the premise that there’s “nothing on my topic” in the literature. By taking the time to engage with and find the similarities with existing scholarship, we can grow a rich and rigorous body of work quicker, and that work will have a greater chance of having an impact across disciplines, within medical care, and potentially, on patient outcomes.

There are also rich opportunities to more explicitly merge together communication design and the rhetorics of health medicine. Not only through examining visuals (see citations in the “History” section), but a more involved examination of how user experience intersects with patient centered-care. For example, what would each field gain by invoking the scholarship of the other.

Ultimately, we hope that this special issue will inspire future conversations. Communication design can benefit from the perspective of the rhetorics of health and medicine, and health and medicine in general need communication design and the rhetorics of health and medicine. We want to encourage useful conversations and disagreements that lead to intellectual ambitiousness and that open detailed, critical dialogue about the work we do, but also, a critical and reflective approach to just doing the work we do. Scott, Keränen, and Segal (2013) called on scholars to name their work and advocate for defining a scope of research. This introduction and issue are an extension of their call. We would take it one step further to claim that there is a field of rhetorics of health and medicine and work toward building a meaningful, connected canon that has direct and relevant connections to communication design. This issue is a step in that direction.

REFERENCES

- Angeli, E. (2012). Metaphors in the Rhetoric of Pandemic Flu: Electronic Media Coverage of H1N1 and Swine Flu. *Journal of Technical Writing and Communication*, 42(3), 203-222. doi:10.2190/TW.42.3.b
- Angeli, E. L. (2015). Three Types of Memory in Emergency Medical Services Communication. *Written Communication*, 32 (1), 3-38.
- Arduser, L. (2011). Warp and Weft: Weaving the Discussion Threads of an Online Community. *Journal of Technical Writing and Communication*, 41(1), 5-31.
- Arduser, L. (2014). Agency in illness narratives: A pluralistic analysis. *Narrative Inquiry*, 24(1), 1-28.
- Arduser, L., & Koerber, A. (2014). Splitting women, producing biocitizens, and vilifying obamacare in the 2012 presidential campaign. *Women’s studies in communication*, 37(2), 117-137.
- Atkinson, S., Foley, R., & Parr, H. (2015). Introduction: Spatial Perspectives and medical humanities *Journal of Medical Humanities*, 36(1), 1-4.
- Barton, E. (Ed.) (2005). The Discourses of Medicine [Special issue]. *Journal of Business and Technical Communication*, 19(3), 245-248.
- Bellwoar, H. (2012). Everyday Matters: Reception and Use as Productive Design of Health-Related Texts. *Technical Communication Quarterly*, 21, 325-345.
- Bennett, J. (2009). *Banning queer blood: Rhetorics of citizenship, contagion, and resistance*. Tuscaloosa, AL: University of Alabama Press.
- Berkenkotter, C. (2008). *Patient tales: Case histories and the uses of narrative in psychiatry*. Columbia, SC: University of South Carolina Press.
- Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low Health Literacy and health outcomes: An updated systematic review. *Annals of Internal Medicine*, 155, 97-107.
- Burleson, D. (2014). Communication Challenges in the Hospital Setting: A Comparative Case Study of Hospitalists’ and Patients’ Perceptions. *Journal of Business and Technical Communication*, 28(2), 187-221.
- Crawford, P., Brown, B., Naker, C., Tishcler, V., & Abrams, B. (2015). *Health Humanities*. Basingstoke, Hampshire: Palgrave Macmillan.
- De Hertogh, L. B. (2015). Reinscribing a new normal: Pregnancy, disability, and health 2.0 in the online natural birthing community, Birth Without Fear. *Ada: A journal of gender, new media, and technology*, 7, n.p.
- Derkatch, C., & Segal, J. Z. (2005). Realms of rhetoric in health and medicine. *University of Toronto Medical Journal*, 82(2), 138-142.
- Derkatch, C., & Spoel, P. (in press). Public Health Promotion of Local Food’: Constituting the Self-Governing Citizen-Consumer. *Health: An interdisciplinary journal for the social study of health, illness, and medicine*, in press.
- Dickinson, D. P. S., Teather, J., Gallina, S., & Newsome-Davis, E. (2010). Medicine package leaflets: does good design matter? *Information Design Journal*, 18(3), 225.
- Ding, H. (2014). *Rhetoric of a global epidemic*. Carbondale, IL: Southern Illinois University Press.
- Donovan, C. (2014). Representations of health, embodiment, and experience in graphic memoir. *Configurations*, 22(2), 237-253.

- Emmons, K. (2010). *Black dogs and blue words: Depression and gender in the age of self-care*. New Brunswick, NJ: Rutgers University Press.
- Jones, P. H. (2013). *Design for care: Innovating healthcare experience*. Brooklyn, NY: Rosenfeld Media.
- Fountain, T. K. (2014). *Rhetoric in the flesh: Trained vision, technical expertise, and the gross anatomy lab*. New York: Routledge.
- Graham, S. S. (2015). *The politics of pain medicine: A rhetorical-ontological inquiry*. Chicago: University of Chicago Press.
- Graham, S. S., & Herndl, C. (2013). Multiple Ontologies in Pain Management: Toward a Postplural Rhetoric of Science. *Technical Communication Quarterly*, 22(2), 103-125.
- Grant, L., Hausman, B. L., Cashion, M., Lucchesi, N., Patel, K., & Roberts, J. (2015). Vaccination Persuasion Online: A Qualitative Study of Two Pro-vaccine and Two Vaccine-Skeptical Websites. *J Med Internet Res*, 17(5), e133.
- Guthman, J. (2013). Fatuous measures: the artifactual construction of the obesity epidemic. *Critical Public Health*, 23(3), 263-273.
- Haas, C. (Ed.) (2009). Writing and medicine [Special issue]. *Written Communication*, 26(3).
- Hamington, M. (2004). *Embodied care: Jane Addams, Maurice Merleau-Ponty, and Feminist Ethics*. Urbana, IL: University of Illinois Press.
- Happe, K. (2013). *The material gene: gender, race, and heredity after the Human Genome Project*. NY: New York University Press.
- Hausman, B. L. (2003). *Mother's milk: Breastfeeding controversies in American culture*. New York: Routledge.
- Hausman, B. L. (2010). *Viral mothers: Breastfeeding in the age of HIV/AIDS*. Rochester, MI: University of Michigan Press.
- Hausman, B. L. (2014). Public fetuses. In T. Jones, D. Wear, & L. D. Friedman (Eds.), *Health Humanities Reader*. New Brunswick, NJ: Rutgers University Press.
- Heiffron, B. (2014). A History of Medical Rhetoric in Technical and Professional Communication Programs. Paper presented at the *Council of Programs in Scientific and Technical Communication* Colorado Springs, CO.
- Heiffron, B., & Brown, S. (Eds.) (2000). Medical rhetoric [Special issue]. *Technical Communication Quarterly*, 9(3).
- Heiffron, B., & Brown, S. C. (Eds.). (2008). *Rhetoric of health-care: Essays toward a new disciplinary inquiry*. Cresskill, NJ: Hampton Press.
- Hyde, M., & Herrick, J. (Eds.). (2013). *After the genome: The language of our biotechnological future*. Waco, TX: Baylor University Press.
- Institute for Patient- and Family-Centered Care. (2015). Retrieved from <http://www.ipfcc.org/>
- Jensen, R. E. (2015). From barren to sterile: The evolution of a mixed metaphor. *Rhetoric Society Quarterly*, 45(1), 35-46.
- Johnson, J. (2014). *American Lobotomy: A rhetorical history*. Ann Arbor, MI: University of Michigan.
- Keranen, L. (2012). "This weird, incurable disease": Competing diagnoses in the rhetoric of Morgellons. In T. Jones, D. Wear, & L. D. Friedman (Eds.), *Health Humanities Reader* (pp. 36-49). New Brunswick, NY: Rutgers University Press.
- Keranen, L. (Ed.) (2014). Medicine, Health, and Publics [Special issue]. *Journal of Medical Humanities*, 35(2).
- Kim, J. N., Park, S. C., Yoo, S. W., & Shen, H. (2010). Mapping health communication scholarship: breadth, depth, and agenda of published research in Health Communication. *Health Communication*, 25(6-7), 487-503.
- Koerber, A., & Still, B. (Eds.) (2008). Online Health Communication [special issue]. *Technical Communication Quarterly*, 17(3), 259.
- Koerber, A. (2013). *Breast or bottle: Contemporary controversies in infant-feeding policy and practice*. Columbia, SC: University of South Carolina Press.
- Kopelson, K. (2009). Writing Patients' Wrongs: The Rhetoric and Reality of Information Age Medicine. *JAC: A Journal of Rhetoric, Culture, & Politics*, 29(1-2), 353-404.
- Kopelson, K. (2013). Risky Appeals: Recruiting to the Environmental Breast Cancer Movement in the Age of "Pink Fatigue". *Rhetoric Society Quarterly*, 43(2), 107-133.
- Lawrence, H. Y. (2014). Health bodies, toxic medicines: Vaccination beliefs and the rhetorics of health, illness and the body. *Yale Journal of Biology and Medicine*, 87(4), 423-437.
- Lawrence, H. Y., Hausman, B. L., & Dannenberg, C. J. (2014). Reframing medicine's publics: The local as a public of vaccine refusal. *Journal of Medical Humanities*, 35(2), 111-129.
- Leach, J., & Dysart-Gale, D. (Eds.). (2010). *Rhetorical questions of health and medicine*. Lanham, MD: Lexington Books.
- Lupton, D. (2014). Beyond Techno-Utopia: Critical Approaches to Digital Health Technologies. *Societies*, 4(4), 706-711.
- Lynch, J. (2011). *What are stem cells? Definitions at the intersection of science and politics*. Tuscaloosa, AL: University of Alabama Press.
- McClay, W. M. (2008). The burden of the humanities. *Wilson Quarterly*, 32(Summer), 34-41.
- McNaughton, C. D., Cawthon, C., Kripalani, S., Liu, D., Storrow, A. B., & Roumie, C. L. (2015). Health literacy and mortality: a cohort study of patients hospitalized for acute heart failure. *J Am Heart Assoc*, 4(5).
- Meloncon, L. (Ed.) (2013). *Rhetorical accessibility: At the intersection of technical communication and disability studies*. Amityville, NY: Baywood.
- Meloncon, L. (2013). Visual communication in environmental health: Methodological questions and compromises. *Communication Design Quarterly*, 1(2), 34-37.
- Moeller, M. (2014). Pushing boundaries of normalcy: Employing critical disability studies in analyzing medical advocacy websites. *Communication Design Quarterly*, 2(2).

- Molloy, C. (2015). Recuperative Ethos and Agile Epistemologies: Toward a Vernacular Engagement with Mental Illness Ontologies *Rhetoric Society Quarterly*, 45(2), 138-163.
- Owens, K. H. (2011). Rhetorics of e-Health and information age medicine: A risk-benefit analysis. *jac: A journal of rhetoric, culture, & politics*, 31(1-2), 225-234.
- Owens, K. H. (2015). *Writing childbirth: Women's rhetorical agency in labor and online*. Carbondale, IL: Southern Illinois University Press.
- Patient-Centered Outcomes Research Institute. (2015). *Home - PCORI*. Retrieved from <http://www.pcori.org/>
- Schryer, C., McDougall, A., Tait, A. R., & Lingard, L. (2012). Creating Discursive Order at the End of Life: The Role of Genres in Palliative Care Settings. *Written Communication*, 29(2), 111-141.
- Schuster, M. L., Russell, A. L. B., Bartels, D. M., & Kelly-Trombley, H. (2013). "Standing in Terri Schiavo's Shoes": The Role of Genre in End-of-Life Decision Making. *Technical Communication Quarterly*, 22(3), 195-218.
- Scott, J. B. (2003). *Risky rhetoric: AIDS and the cultural practices of HIV testing*. Carbondale, IL: Southern Illinois University Press.
- Scott, J. B., Segal, J. Z., & Keranen, L. (2013). The Rhetorics of Health and Medicine: Inventional Possibilities for Scholarship and Engaged Practice. *Poroi*, 9(1), Article 17.
- Segal, J. Z. (2005). *Health and the rhetoric of medicine*. Carbondale ILL: Southern Illinois University Press.
- Segal, J. Z. (2009). Internet Health and the 21st-Century Patient: A Rhetorical View. *Written Communication*, 26(4), 351-369.
- Segal, J. Z. (2012). Breast cancer and its narration: An accidental study. *Literature and Medicine*, 30(2), 268-294.
- Seigel, M. (2014). *The rhetoric of pregnancy*. Chicago: University of Chicago Press.
- Skinner, C. (2012). Incompatible Rhetorical Expectations: Julia W. Carpenter's Medical Society Papers, 1895-1899. *Technical Communication Quarterly*, 21(4), 307-324.
- Smith, L. T. (2012). *Decolonizing methodologies: Research and indigenous peoples* (Second ed.). London: Zed Books.
- St.Amant, K. (2015). Culture and the contextualization of care: A prototype-based approach to developing health and medical visuals for international audiences. *Communication Design Quarterly*, 3(2), 38-47.
- Stormer, N. (2002). *Articulating life's memory: US medical rhetoric about abortion in nineteenth century*: Lexington Books.
- Teston, C. (2012). Considering confidentiality in research design: Developing heuristics to chart the un-chartable. In K. Powell & P. Takayoshi (Eds.), *Practicing research in writing studies: Reflexive and ethically responsible research* (pp. 307-330). Cresskill, NJ: Hampton Press.
- Teston, C., Graham, S. S., Baldwinson, R., Li, A., & Swift, J. (2014). Definitional multiplicity: Negotiating 'clinical benefit' in the FDA's Avastin hearing. *Journal of Medical Humanities*, 35, 149-170.
- U.S. Department of Health and Human Services. (2014). Health Communication and Health Information Technology. In *Healthy People 2020*. Retrieved from <http://www.healthypeople.gov/2020/topics-objectives/topic/health-communication-and-health-information-technology>
- U.S. Department of Health and Human Services. (2015). *Agency for healthcare research and quality*. Retrieved from <http://www.ahrq.gov/>
- Walters, S. (2014). *Rhetorical touch: Disability, identification, haptics*. Columbia, SC: University of South Carolina Press.
- Welhausen, C. A. (2015). Power and Authority in Disease Maps: Visualizing Medical Cartography Through Yellow Fever Mapping. *Journal of Business and Technical Communication*, 29(3), 257-283.
- Welhausen, C., & Burnett, R. E. (in press). Visualizing Public Health Risks: Graphical Representations of Smallpox in the Seventeenth, Eighteenth, and Nineteenth Centuries. In C. Kostelnick & M. Kimball (Eds.), *Visible numbers: The history of statistical graphics*. Farnham: Ashgate.
- Willerton, R. (2015). *Plain language and ethical action: A dialogic approach to technical content in the 21st century*. New York: Routledge.
- Zoller, H. M. (2005). Health activism: communication theory and action for social change. *Communication Theory*, 15(4), 341-364.

Light Lies: How Glass Speaks

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ABSTRACT

Light illuminates but also reflects, and when the medium of glass is a dominant design material it communicates within the architectural space. In this paper we suggest that the transience of light and transparencies of glass posit a duplicity that is aesthetically seductive but communicatively misleading. Specifically, the central aim of the paper is to address where truth sits between reflections and reason in the glass surfaces of a mental health environment. To provide a framework the paper first covers a brief history of glass, engages with its technological properties, its language(s) of the inner and outer, its aesthetic effects in an architectural poetry of light, and the messages conveyed to vulnerable clients and careful clinicians. Then, using a detailed case study of a purpose built mental health ward in Australia, we explore how glass engenders visibility, security, surveillance and power, concluding with recommendations for future builds.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

Mental health; Architecture; Visibility; Truth; material space

INTRODUCTION

How can something inanimate, such as glass, speak? And if it does, does it speak honestly? This paper assumes that glass does have a voice, one that speaks of light and transparency. But it also speaks of fragility and fear with its potential to break into sharpness. It is the veracity of glass as a communicator that we consider at stake in the often fraught environment of the mental health ward. In this paper we extend upon a previous paper in which we suggested that the use of glass in design for mental health sends simultaneous messages of freedom and its lack (Connellan, Due, & Riggs, 2011a). In this paper we specifically engage with communication design issues in space and place in the context of a mental health ward. We do this by exploring how glass works semiotically to communicate the themes of visibility, security, surveillance, and power. The transience of light and the transparencies of glass, we posit, suggest a duplicity that is aesthetically seductive but communicatively misleading. We begin with a brief history of glass in western architecture, then move to foregrounding visibility and security in the mental health setting, which leads into conversations about glass between interior and exterior spaces in a case study of a purpose-built mental health unit. In the final section we return to the key issue of where truth sits between reflection and reason in the glass surfaces of mental health. We consider this topic important because whilst the aesthetics of ambiguity might be beautiful to behold on the facades and interiors of many buildings, people residing and working in a mental health ward need to believe what they see.

GLASS IN WESTERN ARCHITECTURE

Glass and light are synonymous in the language of architecture and light in western imaginaries (emerging as they do from the Judaeo-Christian tradition) and carry promises of redemption through the pathway of “purity” (Connellan, 2009; Dyer, 1997; Wigley, 2001). Light in these contexts is the harbinger of a promised freedom. When natural light is harnessed by architects, it can bring life into

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Communication Design Quarterly. ACM SIGDOC, New York, USA.

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1 Mental health is the term used in the Australian media and also in health discourses in Australia. The authors are aware that this term is euphemised in some other countries.

an otherwise stultified interior space which might be deadened by fluorescents or simply gloomy in the absence of adequate light. The way in which natural light most obviously moves in and through interior spaces is through glass and openings. Glass only began to be used in pieces larger than the lead light method of Gothic Cathedrals (c.1400 – 1500) in nineteenth-century England. The first large-piece glass architecture was known as the Crystal Palace, and it was designed and built by Sir Joseph Paxton (who learnt this technique in his role as Royal gardener) in 1851 for the first trade exposition in the world—the “Great Exhibition” in Hyde Park, London. Following this innovation of panelled glass strengthened and sectioned by rolled iron, the technology improved and soon iron was replaced by steel so that glass panels could be even larger than those made for the Crystal Palace.

Modernism was the time of the “curtain wall,” the dictum of “form follows function,” (Sullivan, 1896) and of “less is more” (Illinois Institute of Technology, 2012). The “curtain wall” literally means a wall of glass. This is now referred to as the “skin” or “envelope” of the building. This was achieved by overcoming the need for load-bearing brick walls through the new ferro-concrete, which was reinforced by steel, allowing glass to wrap around buildings. In this way “more” became “less” as heavy opaque walls were replaced by light transparent glass. Sheet glass, picture windows, glass screens and panels were all used to bring the outside inside. Modernist architects feted the interior-exterior flow of sunlight and space. This was a move away from the solid barriers that the brick or stone wall presented to the outside world or indeed to the inside world of inhabitants.

Yet whilst this brought many glistening jewels to city skylines (and continues to do so), the extensive use of glass has also had its critics. Advocates call it an “intelligent” material (Addington & Schodek, 2005; Compagno, 2002) and applaud its strength, beauty, and versatility (Bell & Kim, 2009), whilst environmentalists warn of the problems of heating, glare, and reflection and therefore suggest that glass must be used intelligently (Abaza, 2000; Bally, 2002; Gissen, 2003; Guy, 2001; Thibaud, 2001). Work has also been done on the politics of glass in particular architectural settings such as courts of justice, which has a bearing on mental health units (Resnik & Curtis, 2011). Resnik and Curtis write that the connection between glass and access to justice is “simplistic,” presenting the contradiction of “opaque transparency” (p. 341). As researchers seeking to examine the relationship between architecture and mental health, we add our voice to all these discussions in relation to our key issue for this paper, namely: Does glass tell the truth?

GLASS IN THE CONTEXT OF MENTAL HEALTH: THEORY, VISIBILITY AND SECURITY

Glass technologies are closely aligned with historical and contemporary theories on seeing and being seen. Surfaces have long been used to communicate to those who look upon them; in the discipline of art theory for example, Krauss (Foster, 1988; Krause, 1988) engages with “the impulse to see” into the flat surface of the picture plane. She writes of the “rhythm” and “pulse” involved in looking [at a painting] which “in itself, acts against the stability of visual space in a way that is destructive and devolutionary” (p. 51). The threat (or joy) of seeing oneself as other or the other as self is always present in the contemplation of an image, and there is always potential for this recognition to evolve and grow. An everyday and

literal example of recognising oneself as self on a surface is that of the mirror; here the function of the surface is designed to offer an honest replica of our own image. However, glass in contemporary architectural design provides a surface for both the still and moving image that invites much more: it invites the gaze. And, as Foucault (2007) writes, “the gaze is never neutral; it gives the impression of leaving things there where they are; [but] in fact, it ‘removes’ them, virtually detaching them from their depths and layers ” (p. 166). Similarly, Elkadi (2006) notes that “we can now look through glass to observe other dimensions of virtual reality” and that as a result of glass technologies “we are on the threshold of creating the architecture of mental images” (p. 82). It is the power of this type of looking and seeing that forms a crucial meeting point between architectural aesthetics and cultures of control in a contemporary society. Elkadi (2006) also points out that an increase in the number of glass skyscrapers in a city’s skyline is often taken as a sign of peace and stability; however he later notes that whilst such glass facades apparently offer transformation, any real interaction between people is denied (p. 48). As such, glass has become intrinsic to contemporary interior designed spaces and the language of this space is one of power. Foucault (2007) notes that language has become “a thing of space” (p. 163). This is important for the potential that glass has to communicate in this space because glass becomes part of the language that “keeps watch” (Foucault, 2007, p. 164).

French cultural theorist Baudrillard (2009) points out that aesthetics in a “harmonized interior ... is thus not a value of style or of content; it no longer refers to anything but to communication and sign exchange. It is an idealized semiology, or a semiological idealism” (p. 156). Baudrillard reminds us that forms and materials in space are part of the meta-language of a large signifying system. And although Berger (1972) asserts that “We only see what we look at. [And that] To look is an act of choice” (p. 8), things and people that are visible in the designed space of a mental health unit are in a controlled visual environment and don’t necessarily have the choice to look or not to look at something, to be seen or not to be seen. To this end Foucault (1995) notes that “visibility is a trap” (p. 200), and here Foucault expands upon the complexities of seeing and watching in a space designed for surveillance.

The environment of the mental health unit is specifically regulatory; it is the placement of “bodies in a meticulous analytical space” (Foucault, 2003, p. 227). One question presented to designers and mental health practitioners is whether to communicate this regulatory aspect through glass, which performs a clearly controlling function, or to disguise the function of surveillance and protection through the transparency of glass? The view that glass is “designing its own disappearance”—as Bell and Kim (2009) suggest—alerts us to the increasing technological advancements, ones that bring about a material which denies itself. The effects of ostensible transparency rendered by glass in an analytical space such as a mental health unit are always already uncanny.

2 *Clients is the predominant term used in mental health practice in Australia and thus it is the term we use in this paper. Yet despite this, the majority of the literature still uses the term ‘patients’. As such, when we discuss the literature, we adopt the term used by each particular author. Terminology also varies for ‘nurses’ station’ as opposed to ‘duty station’, and ‘clinicians’ which is the broad term for all mental health practitioners, as opposed to nurses and doctors.*

The unique problems that arise from designing an interior that must at once seem bright and free but also prevent escape (for acute clients) and conform to the many requirements of the health system must at times be discouraging for architects. The popularity of glass and its technological advancement has arguably presented a way to design mental health spaces (such as psychiatric units) that allow for the bridging of these two requirements (i.e. constraint and aesthetic appeal). The design of spaces for mental health, however, presents ongoing challenges because the model of care in most developed countries has moved to one that is community-based. This has meant that the old asylum-style facilities are no longer suitable and architects have to provide a whole new set of solutions to the more varied services such as locked and open wards, short-term stay, and community-based care. Designing anew for these requirements in public health is tied up with government initiatives, architects' reputations in a competitive market, and the politics of healthcare funding systems. There is usually only one chance to get a purpose-built unit right, given that retrofitting is expensive and disruptive to clients. However, despite the importance of design within mental health wards, there is an almost total lack of adequate post occupancy evaluations in this sector (Connellan et al., 2013). Moreover, despite the close relationship between mental health and the design of space and the challenges that it presents, most of the research into this relationship has been published in health journals and is not led by design and communication researchers. Perhaps that is the reason for scant attention to the communicative effects of particular architectural materials such as glass in a mental health unit.

Yet despite this gap in the literature from a design and communication perspective, health researchers continue to examine the real world effects of design upon consumers. Daykin et al. (2008), for example, conducted a systematic review of the literature on "the impact of art, design and environment in mental healthcare" (p. 85). This was a review of over 600 papers published from 1985 to 2005. The study identified a number of recurring environmental features that impacted mental health outcomes. Some of these features include natural conditions and lighting (pp. 88, 91); more physical amenities, and "comfort, privacy and normality" (p. 90). Mental health clients appeared to have more definitive and polarised reactions to their environment than other groups, such as aged care and dementia groups (p. 92).

Two other literature reviews (Ulrich, 2008 and Dobrohotoff Llewellyn-Jones, 2010) open up the breadth of research that is necessary to develop architectural and spatial design in relation to healthcare. Dobrohotoff and Llewellyn-Jones' (2010) study concentrates on psychogeriatric unit (PGU) design and these authors note that the few existing studies on the relationship between mental health and architecture appear to be more generalist and dedicated to dementia patients. In most cases evidence is sought for changes and improvements for clients and clinicians using "old" and "new" designed spaces. Notably, none of these reviews identify glass as a topic that has been given attention in previous research. The most recent literature review on mental health and architecture is the one we published in HERD in 2013 (Connellan et al., 2013) which identifies the following 12 key themes as highlighted in previous literature: Security; Light; Therapeutic milieu; Gardens; Impact of

architecture on health outcomes; Interior Design; Psychogeriatric; Post-occupancy evaluations; Nursing stations; Model of Care; Art; Adolescents; Forensic Psychiatric Facilities.

A CASE STUDY OF A PURPOSE-BUILT MENTAL HEALTH UNIT

Description

The buildings that comprise the mental health unit in this case study are part of a large public hospital in South Australia, completed in stages between 2009 and 2010. We selected this building for our study upon the advice of a stakeholder involved in the research project, in response to concern about the appropriateness and efficacy of this building. Furthermore, the building was purpose-built and therefore offered an interesting case study in relation to the design of such spaces.

The unit contains two main wards for clients. The secure or "locked" ward has a total of six beds (all single rooms), three bathrooms, and one accessible bathroom. The open ward contains 20 beds, 10 bathrooms, one disabled bathroom, and one assisted bathroom. Both these wards were typically full throughout our study (as described in the Method section below). Ethical clearance was provided by the University of South Australia's Human Research Ethics Committee and the Ethics Committee of the hospital involved in the study. Procedures regarding information and consent were strictly adhered to.

Method

Ethnography was chosen as the methodology for this study due to the fact that the literature has identified it to be appropriate for use in healthcare settings, and it has been used in previous research in this area (Johansson, Skärsäter, & Danielson, 2006; Savage, 2000). For example, ethnography has been used successfully in psychiatric wards in Europe similar to the one in our study (Johansson, Skärsäter, & Danielson, 2006). Furthermore, ethnographic observations are typically unobtrusive and allow the researcher to develop a flexible approach to both understanding an environment and to gaining insight into the relationships between that environment and the behaviour of the people within it. This study is based on 34 hours of observations during both mornings and afternoons over a ten-week period. To ensure rigour in the consistency of space-use, the time was split evenly between the locked ward and the open ward. Field notes were taken during observations focusing on space usage and movements, and where necessary immediately after leaving the hospital premises.

Once the observations were finalized, the field notes were analyzed using thematic analysis, following the approach laid out by Braun and Clarke (2006). In their paper, Braun and Clarke (2006) provide rigorous guidelines for conducting thematic analysis in qualitative research within the broad study of psychology, and these guidelines were followed in each stage of the analysis of the field note data. Braun and Clarke outline a six-phase guide for identifying, analysing, and reporting patterns (themes) within the data, which includes a non-linear familiarization with the data, coding, theme identification, review, defining/ naming and reporting (p. 87). This approach does not move away from the celebrated flexible nature of thematic analysis but does tighten the approach for more rigour.

Analysis of the entire corpus revealed a number of themes that we have published on. These include (in order of significance): security (Due, Connellan, & Riggs, 2012); the use of the duty station by

3 Indeed many of the Victorian styled asylums with large grounds are being sold to property developers.

both staff and clients (Riggs, Due, & Connellan, 2013); doors and passages; the use of glass in both wards (Connellan, Due, & Riggs, 2011a); the use and effects of gardens and plants (Connellan, Due, & Riggs, 2011b); the choice and positioning of visual art in the wards; and the use of colour (Connellan, 2013). Cultural considerations were something additional that were peripheral but were the subject of a later comparative reflection (Connellan, 2012).

Details

This mental health unit does not disguise itself from the outside. It is highly visible due to clear and obvious signage (Figure 1). It is a facility whose clients are experiencing poor mental health that requires short or longer term stay at the hospital. Whilst in the past mental health facilities have typically hidden or minimised their signage out of concern for the potentially negative effects of stigma upon clients, this assumption did not appear evident in the mental health unit examined for this research, with the unit clearly identifiable through a sign saying “Mental Health.” The signage is there for all to see and specifically for those in need to know precisely where to come and ask for support if the occasion demands it. Whilst the reception area is not the admission section, it is a portal of information on mental health services. A senior clinical practice consultant and a member of our research team was instrumental in liaising with the architects to ensure the sign was clear and that it did not disguise/euphemise mental health by (for example) substituting “mental health ward” in the writing on the sign with the name of flower or famous person. Signs for other units in the large hospital of which this mental health unit is a part all have similar signage, meaning that visibility and truth are right up front in terms of the function of the mental health and the function of other units in the hospital. Glass, however, does not play an obvious role in the clarity of the message about the mental health unit. The public entrance to the facility is not encased with glass (despite the large glass sliding doors); instead the laminated

walls and grey cantilever canopy shadow the doorway, but this does result in a welcoming entrance. It’s a strong beginning but this is not the entrance used to admit mental health clients, as they are brought through an interior (un-glassed) corridor from the main hospital (which is situated behind the mental health unit) and then admitted straight into the ward.

Despite this relatively low-level use of glass in the entrances to the facility, there is extensive use of glass in the interior of both open and locked wards in the unit. Natural light floods into shared eating and entertainment areas, communicating a feeling of lightness and airiness (Figure 2). It is well documented that light, and specifically daylight, is immensely important to the mental health of clients and clinicians (Huffcut & Asid, 2010; Schweitzer et al. 2004; Ulrich et al., 2008). Florence Nightingale was one of the first to insist that the rising and setting of the sun should be absolutely evident to patients and that they should, if possible, have direct sunlight in their ward at all times of the day (Edwards, 2011, p. 155). Ulrich et al.’s 2008 review of literature on evidence-based healthcare design (in non-mental healthcare settings) shows the reduction of stress as a result of daylighting and appropriate lighting. From these findings Ulrich et al. (2008) developed a “restoration theory,” which they suggest

implies that modern humans, as a genetic carryover of evolution, have a capacity to derive stress-reducing responses from certain nature settings and content (e.g. vegetation and water), but have no such disposition toward most built or artefact-dominated environments and materials (e.g. concrete, glass, and metal). (Ulrich et al., 2008, p. 128)

If the stress- reduction responses are specific to elements of nature, then we ask: What is the effect of glass on glass in a mental health unit specifically? In the locked ward of our study, glass offers views of a landscaped garden area that is accessible to those visiting the



Figure 1. Mental Health signage (photograph taken by first author, 2010).

general hospital outside the mental health unit. In the open ward, views to the garden are accessible within a closed and monitored courtyard on one side but inaccessible on the other side. In other words, glass is there as a literal window to the world outside, whilst simultaneously acting as a constant reminder of the barrier between clients and the outside spaces around them. The following excerpt is from field notes taken by Connellan in the open ward and then in the locked ward.

As I sit down at the dining area again I am very aware of the reflections of glass on glass and glass to glass. This causes an ambiguous space and spatial movement. Illusionary.

Connellan noted the following when taking notes from inside the duty station for the locked ward:

I notice reflections on glass quite clearly – especially from a distance. The busyness of the reflections could be distracting. (see Figure 5)

These reflections create an illusion of people in spaces. In addition, when the glass windows have a combination of objects, features and people behind them in the receding space, there are layers of reflections upon reflections. This creates duplications of overlapping and interpenetrating imagery. And whilst being aesthetically pleasing, such visibility presents a confused sense of who and what is where. It was observed that there were times when the clients seemed to look at the glass for periods of time, and this could have been because of the patterns and movements created within the reflections. In the High Dependency Unit there is a glass panel acting as a divider that drew the attention of the clients, which could be a product of clients being visually entertained by the lively images captured by light and reflection. However, Schweitzer, Gilpin, and Frampton (2004) note that “too much stimulation will

have the negative impact of raising anxiety levels” (p. 76).

The use of glass, then, has several purposes. Besides allowing enough natural light to flow into the interiors and to light up the interior, it is also used to facilitate seeing and being seen when necessary. The third author noted the following:

I am sitting inside the closed ward in the corner. Two clients are talking to a carer- (senior nurse) – other carer goes off to do the washing. One male client goes away. Female client stays and chats to (reads palm) of senior nurse. One client is lying on a couch / bed with covers, this is full view of the duty station. It's an overcast day but the reflections of glass upon the glass create layered spaces from across the ward eating and living area.

The duty station forms a central core between the open and locked wards and is encased by glass which looks out onto the wards themselves. The station is the focus of a paper written by these authors (Riggs, Due, & Connellan, 2013). The glass window of the duty station in the locked ward is fixed and cannot open whilst there are two sections of glass that can slide up in the open ward. The staff in the duty station of the open ward are more visible than staff in the locked ward section of the duty station, both due to the larger amount of glass and the fact that the duty station itself is bigger in the open ward. However, this increased visibility may also be because the open ward itself is larger and with the emphasis upon glass all spaces are well lit thus increasing the light across to the duty station. However, during our study, in addition to the bright surrounding natural light, the open ward interior electric lights were all on in the duty station, thus lighting up the station even more and also creating more reflections. The ethnographic note below (Connellan) is written from outside of the duty station in the open ward (i.e. a client's view), indicating how far across the ward reflections appear in the glass (Figures 3,4 and 5).



Figure 2. Open ward dining and recreation area (photograph taken by first author, 2010).

The duty station appears lit up and it reflects and is reflected upon other reflections. e.g. trees and brick wall from the outdoor area. Reflections also change with the light on all the glass panels.

The adjoining locked ward duty station is smaller and darker, electric lights do not always seem to be turned on or be as effective in this station. The darker duty station thus becomes less visible which inadvertently communicates inaccessibility from the outside. It is easier to see out of the locked ward duty station than it is to see into it because one is looking from dark into light (Figure 5).

INSIDE/OUTSIDE

When the above aspects of seeing and being seen are considered in an environment that is dependent upon power relationships between the role of client and the role of clinician, it is most likely that the extensive use of interior glass is worked into the design as a security measure for all. Increased visibility is often regarded as providing greater safety for occupants of interior space. As mentioned, the centralised duty station is glass-encased and the glass allows vision both out and in. There are no computer-controlled false windows that mimic scenes or scenery (Biley, 1996) and no one-way glass



Figure 3. View from inside the open ward, showing the reflection of the duty station (Photograph taken by the first author, 2010).



Figure 4. View through locked ward eating and recreation area (Photograph taken by the first author, 2010).

interior panels (also sometimes referred to as mirror glass) anywhere in either unit. The reason for the absence of one-way glass may be that there is sufficient security through the use of the ceiling-fitted convex directional mirrors (Figure 6) and the numerous security cameras, also ceiling-fitted. On the surface it would appear that the use of glass is therefore an open approach to communication with the glass hiding no one nor deliberately suggesting something that is not there.

Yet, the third author, sitting in the locked ward duty station, noted the following:

One male client wanders back up corridor and punches glass wall at end and nurse goes out to have conversation with him and then takes him outside with his smokes.

The above extract is salient in terms of the glass in this instance forming a barrier, but also a surface upon which to vent frustrations upon. Therefore whilst security and safety are optimal in any mental health unit, clients also need to know they are safe from harming themselves. The third author noted that clients wandered around the locked ward a lot. Below is one excerpt from the third author's ethnographic notes:

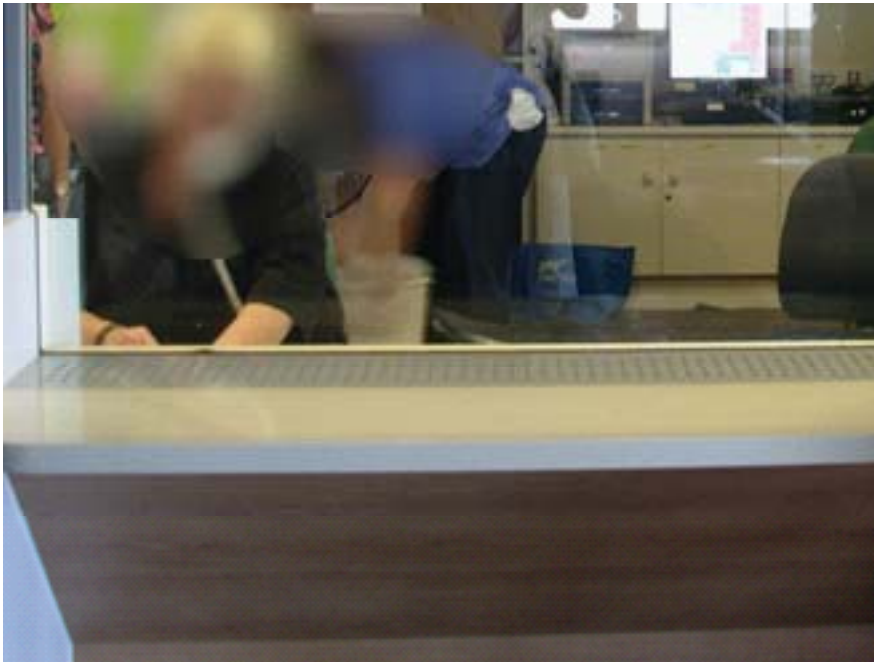


Figure 5. From inside the locked ward duty station, (Photograph taken by the first author, 2010).



Figure 6. Convex directional mirror. (Photograph taken by the first author, 2010).

S walks down corridor and goes into bedroom or toilet. J gets up and walks around dividing glass panel, then back to TV room, then back around again – holding his drink. He does this several times.

The pacing and wandering may have more to do with the clients' mental condition than with the glass, but it is nonetheless important to consider the effects that glass might have upon the movements of clients. Glass can give the appearance of openness but it can also provide a perceptible transparent barrier to close physical communication. As such it is used to separate people from people. Stichler (2008) makes five recommendations, two of which focus upon security:

For the staff, designs should address (1) the work flow process of care giving and minimize the steps necessary to secure supplies and equipment; (2) safety features that reduce employee injuries resulting from repetitive movement, patient lifting, mobilization, and transfers; (3) visual access of patients from nursing stations or documentation alcoves; (4) security designs that enhance protection of the staff from hostile visitors; and (5) staff stress reduction with the design of respite rooms (quiet, meditative environments) in high-stress areas (Stichler, 2008, p. 507).

With (3) and (4) above in mind, it is likely that the glass is used to counter any unsolicited contact and we fully acknowledge that protection is extremely important in any stress filled environment. The question remains, though, as to how much glass is too much?

The structural feature of the sliding window in the open ward duty station of our study is a point of closer communication. The third author noted the following:

In this ward the nurses' station has a window which lifts up, and clients can lift it up too. This window appears to be a more central part of communication than the door(s) although clients appear to come up to the nurses' station much less in this ward than in the locked one.

Our study also revealed that clients in the locked ward preferred to knock on the door (not made of glass, but with a small glass panel at head-height) of the duty station and have it opened by a staff member, rather than to converse through the closed glass of the window. See ethnographic excerpt from the third author below:

I notice that sometimes when a client comes to the door to the nurses' station other people come and hang around too, other times they just ignore what is going on.

Overall the door to the nurses' station in the locked ward appears to be a central part of interaction between staff and clients—also worth noting that it is the door and not the window. People rarely seem to go to the window in the locked ward.

It is also significant that whilst staff could open the door to the clients, they could also ask them to go around to the window. At this opened door staff frequently stood and chatted to clients, and clients rarely tried to touch a member of staff. Importantly, if a client did try to point at something in the duty station—thereby putting their arm into the room a bit—they were frequently asked to step back by staff. As such, whilst the door in the locked ward was not designed as a point of contact (it was located out of the way, around the side of the duty station), it did offer more physical communication than the glass window. Staff allocated to the locked ward generally

returned to their tasks within the duty station after interacting at the door. However, the observations also indicated that staff spent what time they could sitting and chatting with clients inside the locked ward, suggesting that they felt some degree of safety in this space. This may have been facilitated by the fact that all staff members had alarms and swipe/key cards to open doors hanging around their necks at all times.

Schweitzer et al. (2004) write that, "Centrally located nursing stations and glass partitions may limit patients' access to staff" (pp. 78-79). We suggest that the use of glass as a signifier of simultaneous communication and security may be disingenuous to clients and visitors and similarly these mixed messages might also affect the behaviour of the staff. Schweitzer et al. (2004) also note

it is not uncommon to find large centralized nursing stations on a typical patient unit, set apart from patients by half-walls or glass partitions and at significant distances from most patient rooms. These elements clearly distance staff members from patients, sending the message that they are busy and inaccessible (p. 78).

Schweitzer et al. (2004), Gross et al. (1998), and Karlin and Zeiss (2006) all recommend the use of open, non-glassed or partitioned duty stations. Messages are sent visually more often than verbally, and therefore the role of glass as a visual communicator needs to be taken more seriously. For example, Berger (1972) writes

We never look at just one thing, we are always looking at the relation between things and ourselves. ... Soon after we can see, we are aware that we can also be seen. ... The reciprocal nature of vision is more fundamental than that of spoken dialogue (p. 9).

With the above considerations of being inside and/or outside with glass used as a spatial and psychological boundary, and the means of communicating security and safety in an honestly visible way, we move to our conclusions on where truth sits between reflection and rationality in a glassed in interior.

CONCLUSIONS: GLASS TRUTHS

We began this paper by situating glass in its architectural history and moved to considerations of cross-disciplinary theory on the crucial issues of visibility and security. The title of the paper, "Light Lies: How Glass Speaks," posits a duplicity based on the transience of light and the transparencies of glass. But lies are not always intentional and truths are rarely singular, which is why glass sits at the cusp of reflection and reason, of ambiguity and structure. Glass was always going to be a substance that conjured up the artificial; it is artifice itself. Since its ancient inception, it could pretend to be a jewel that it was not (Whitehouse, 2011) and very soon it could create an environment that it was not. This was most useful for horticulture but then it became useful for people too. Glass truths will always be as fragile as their surface and as permanent as the engineered properties of that glass. The billions of crushed shells and stones that constitute the particles at the heart of this substance each have their own story, their own truth.

Glass is no longer a singular material but a highly complex one that can be engineered to perform more complex tasks than being a lightweight building material and a conduit of sunlight. As architects and designers we should not be seduced by the properties of beauty, as health practitioners we should not undermine their propensity to heal, and as communicators we should be aware

that ambiguous messages—whilst captivating in glass—are often dangerously misleading. Achieving a balance requires a rational blending of aesthetics and functionality.

Aesthetically, glass can speak beyond the visible and communicate its qualities with potent auditory capacity. For example, one crystal glass tapped lightly against another will ring out as a pure stream of sound. Alternatively, the same crystal glasses dropped onto a hard tiled floor will shatter with sharp splintering sounds. So, too, will an unstable unreinforced glass panel shatter and, depending on its weight and height, its crash could be loud and fatal. There is a danger in glass that may be part its allure; it is sharp enough to sever arteries and its reflective qualities can light a terrifying bush fire.

Glass, in Baudrillardian terms, contributes to the simulacra of the everyday world outside the mental health institution. Its busy duplications are disconcerting for the “normal” individual. The question that must be asked, then, is whether glass is responsible for replicating the seductive qualities of aesthetic reflections (play of light and the ambiguous imagery) in an environment of heightened emotional responses to all sorts of stimuli? Questions such as this cannot be answered simply on the basis on one ethnographic observational study, and as such more targeted empirical studies need to be done to measure the effects of particular materials in mental health units. Nonetheless, the present study gives some preliminary support for the assertion that glass does indeed play a role, both in terms of visibility and security, potentially with adverse effects.

It is clear from existing studies and specifically the work of Ulrich (1991; 2000; 2001) that natural light is essential to healing. In terms of our findings and observations relating to the use of glass, we do not recommend a reduction in natural light but rather encourage alternative methods of capturing natural light—for example, through skylights. At this point, based on the observations we conducted, we recommend that glass is not used for interior partitions unless those partitions are absolutely necessary, and then such glass should be non-reflective. For example, the duty station might not require any partition above the counter if the station is used for client and clinician relationships and if administration is done elsewhere (Riggs et al., 2013). We advise against reflective glass in all light-filled areas that result in deceptive imagery that might be understood as real. We also suggest that if glass is for looking through and seeing the other side at a natural height, (excluding clerestory windows of the sky), then that other side should be accessible to the viewer. Windows wherever possible should be able to be opened; if glass is not meant to be seen through, it should be opaque. In other words, glass should not be a reminder of a lack of freedom.

The mental health unit is a highly regulated environment, and glass as an architectural material is also subject to stringent regulations. Its wonderful qualities of emitting natural light have not lost the magic of the middle ages when darkened interiors were turned to light and the liturgy in churches was persuaded to move from hell and damnation to heaven and salvation (Torevell, 2007, p. 72). Light as lumen must remain, but glass should not be the vehicle of duplicity. Let it continue to be a material of hope.

Glass is discussed in this paper as a medium for communication. And this communication would be expected to be supportive and clear in the context of desired mental health outcomes. Glass has been shown to flood the interiors with light, to bring

moving imagery and reflective visual patterns that communicate a liveliness but also an ambiguous reality. Glass can therefore miscommunicate, beguile, and tease. The various glass structures included in the architectural design of this purpose-built unit—such as windows, panels, dividers, and doors—are part of the language of this particular mental health architecture. It is a well-meaning language that sets out to lift the spirits of the clients and clinicians with the poetry of light, but it may be that a more prosaic approach that still incorporates light and glass would be more effective and result in more honest communication than the proliferation of layered visual meanings.

REFERENCES

- Abaza, H. (2000). Integrating solar radiation, thermal mass, thermal insulation, and natural ventilation in buildings. *Proceedings of Roomvent, International Conference of Air Distribution in Rooms* (pp. 135-16). Reading, United Kingdom.
- Addington, M. & Schodek, D.L. (2005). *Smart materials and new technologies: for the architecture and design professions*. Oxford: Architectural Press.
- Bally, M. A. (2002). Energy efficiency breakthroughs for commercial glazing. *Construction Specifier*, 55(11) 71-82.
- Baudrillard, J. (2009). Design and environment or how political economy escalates into cyberblitz. In H. Clark & D. Brody (Eds.), *Design Studies: A Reader*. (pp. 154-159). Oxford, England: Berg.
- Bell, M. & Kim, J. (2009). *Engineered transparency: The technical, visual, and spatial effects of glass*. New York: Princeton Architectural Press.
- Berger, J. (1972). *Ways of Seeing*. London, England: Penguin.
- Biley, F. (1996). Hospitals: Healing environments? *Complementary Therapies in Nursing and Midwifery*, 2(4), 110-115.
- Braun, V. & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.
- Compagno, A. (2002). *Intelligent glass facades: Material, practice, design*. London: Ellipsis.
- Connellan, K. (2009). Washing white. In B. Baird & D. W. Riggs (Eds.), *The Racial Politics of Bodies, Nations and Knowledge* (pp. 28-46). Newcastle upon Tyne: Cambridge Scholars Press.
- Connellan, K. (2012). Parrësia: between principles and practices in design. *International Journal of Design Principles and Practices*, 6, 11-22.
- Connellan, K. (2013). The psychic life of white: Power and space. *Organization Studies*, 34(10), 1529-1549.
- Connellan, K., Due, C., & Riggs, D.W. (2011a). Light lies: How does glass communicate in a mental health unit? *Australian and New Zealand Communication Conference*, July 6-8, Hamilton, New Zealand.
- Connellan, K., Due, C., & Riggs, D.W. (2011b). Gardens of the mind: Nature, power and design for mental health. *Proceedings of IASDR 2011, 4th World Conference on Design Research*. Delft, Netherlands.

- Connellan, K., Gaardboe, M., Riggs, D., Due, C., Reinschmidt, A., & Mustillo, L. (2013). Stressed spaces: Mental health and architecture, a review of the literature. *Health Environments Research and Design Journal (HERD)*, 6(4) 127–168.
- Daykin, N., Byrne, E., Soteriou, T., O'Connor, S. (2008). The impact of art, design and environment in mental healthcare: a systematic review of the literature. *The Journal of the Royal Society for the Promotion of Health*. 128 (2), 85-94
- Due, C., Connellan, K & Riggs, D.W. (2012). Surveillance, security, and violence in a mental health ward: An ethnographic case-study of an Australian purpose-built unit, *Surveillance & Society*, 10(3/4), 292 – 302.
- Dyer, R. (1997). *White*. New York: Routledge.
- Edwards, C. (2011). *Interior design: a critical introduction*. Oxford, England: Berg.
- Elkadi, H. (2006). *Cultures of Glass Architecture*. Aldershot: Ashgate.
- Foster, H. (1988). *Vision and Visuality*. Michigan: Bay Press.
- Foucault, M. (1995). *Discipline and punish: The birth of the prison*. New York: Vintage.
- Foucault, M. (2007). The Language of space. In J.W. Crampton & S. Elden (Eds.), *Space, Knowledge and Power: Foucault and Geography* (pp. 153-167). Surrey: Ashgate.
- Gissen, D. (2003). *Big and Green: Towards sustainable architecture in the 21st century*. New York: Princeton Architectural Press.
- Gross, R., Sasson, Y., Zarhy, M., Zohar, J. (1998). Healing environment in psychiatric hospital design. *General hospital psychiatry*, 20(2), 108-114.
- Guy, S. (2001). Reinterpreting sustainable architecture: The place of technology. *Journal of Architectural Education*, 54(3) 140-148.
- Huffcut, J. & Asid, E. (2010). Can design promote healing? *Behavioral Healthcare*, 30(9), 33-35.
- Illinois Institute of Technology. (2012). Mies van der Rohe Society. Retrieved from <http://www.miessociety.org/>.
- Johansson, I. M., Skärsäter, I., & Danielson, E. (2006). The health-care environment on a locked psychiatric ward: An ethnographic study. *International Journal of Mental Health Nursing*, 15, 242-250.
- Karlin, B.E. & Zeiss, R.A. (2006). Environmental and therapeutic issues in psychiatric hospital design: Toward best practices. *Psychiatric Services*, 57(10), 1376 -1378.
- Krauss, R. (1988). The Im/pulse to see. In H. Foster (Ed.), *Vision and Visuality*. (pp. 1-79). Michigan: Bay Press.
- Resnik, J. & Curtis, D. (2011). *Representing justice: Invention, controversy, and rights in city-states and democratic court-rooms*. New York: Yale University Press.
- Riggs, D.W., Due, C., & Connellan, K. (2013). Duty stations and the regulation of space in mental health wards. *Australian Community Psychologist*, 25(1), 97 -112.
- Savage, J. (2000). Ethnography and health care. *BMJ*, 321(1400).
- Schweitzer, M., Gilpin, L., Frampton, S. (2004). Healing Spaces: Elements of environment design that make an impact on health. *The journal of alternative and complementary medicine*, 10 (1), S-71-83.
- Stichler, J. F. (2008). Healing by design. *Journal of Nursing Administration*, 38(12), 505- 509.
- Sullivan, L. (1896). The tall office building artistically considered. *Lippincott's Magazine*, 403-409.
- Thibaud, J. P.(2001). Frames of visibility in public places. *eScholarship*, 14(1).
- Torevell, D. (2007). *Liturgy and the beauty of the unknown: Another place*. Hampshire: Ashgate.
- Ulrich, R. S., Zimring, C., Zhu, X., DuBose, J., Seo, H.B., Choi, Y.S., Quan, X., & Joseph, A. (2008). A review of the research literature on evidence-based healthcare design. *Health Environments Research & Design Journal* 1(3), 101-165.
- Ulrich, R. S. (1991). Effects of interior design on wellness: theory and recent scientific research. *Journal of Health Care Interior Design*, 3(3), 97-109.
- Ulrich, R. S. (2000). Evidence based environmental design for improving medical outcomes. *Healing by Design, Building for Healthcare in the 21st Century*. Montreal, Quebec: McGill University Health Centre.
- Ulrich, R. S. (2001). Effects of healthcare environmental design on medical outcomes. *International Academy for Design and Health*, 49-59.
- Whitehouse, D. (2011). *Glass: A Short History*. Washington: Smithsonian.
- Wigley, M. (2001). *White walls, designer dresses: The fashioning of modern architecture*. Cambridge, Massachusetts: MIT Press.

E-Health First Impressions and Visual Evaluations: Key Design Principles for Attention and Appeal

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ABSTRACT

Design plays a critical role in the development of e-health, greatly impacting the outreach potential for pertinent health communication. Design influences viewers' initial evaluations of electronic displays of health information, as well as directly impacting the likelihood one will attend to and favorably evaluate the information, essential actions for processing the health concepts presented. Individuals with low health literacy, representing a hard-to-reach audience susceptible to worsened health outcomes, will benefit greatly from the application of theory-based design principles. Design principles that have been shown to appeal and engage audiences are the necessary first step for effective message delivery. Design principles, which directly impact increased attention, favorable evaluations, and greater information processing abilities, include: web aesthetics, visual complexity, affordances, prototypicality, and persuasive imagery. These areas of theory-driven design research should guide scholars in e-health investigation with research goals of broader outreach, reduction of disparities, and potential avenues for reduced health care costs. Improving design by working with this hard-to-reach audience will simultaneously improve practice, as the applications of key design principles through theory-driven design research will allow practitioners to create effective e-health that will benefit people more broadly.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design, Human factors

Keywords

e-health, design, health literacy, web aesthetics, visual complexity

INTRODUCTION

Visual design is largely influential for health information and services delivered via a digital device or the Internet, known as e-health (Eysenbach, 2001). This is especially true for first impressions that rely on perceptions of visual design that are inherent in screen-based communication. Evaluations of online information are made quickly, with some studies showing that the first 50 milliseconds, or less, greatly impacts how positively or negatively the viewer will judge the information presented (Lindgaard, Fernandes, Dudek, & Brown, 2006). Not only are these judgments made almost instantaneously, they have been shown to be held consistently over time (Lindgaard et al., 2006). Despite the importance of first impressions, a user's initial exposure to an interface design is often overlooked as a critical phase in the design of e-health promotion, creating situations where health information is discredited or dismissed immediately by the viewer (Sillence, Briggs, Harris, & Fishwick, 2007a).

Visual design, through intentionally constructed displays of color, form, and value, govern a consumer's access and ability to interpret meaning of health information (Cyr, Head, & Ivanov, 2006). The influence of visual design during impression formation is an especially important consideration for e-health users with low health literacy, as these users represent a vulnerable population. One's health literacy, the ability to obtain, process, understand, and communicate about health information to be able to apply to one's behavior (Berkman, Davis, & McCormack, 2010; Nielsen-Bohlman, Panzer, & Kindig, 2004), has a great influence over health outcomes. Low health literacy is correlated with worsened or compromised health outcomes for individuals (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011). Between one third and one half of adults have low health literacy, with a variety of risk factors—lower socioeconomic status, speaking English as a second language, and being elderly—making this a pressing public health concern (Ad Hoc Committee on Health Literacy, 1999; Manning & Dickens, 2006; Nielsen-Bohlman et al., 2004). Placing a greater emphasis on visual design for health communication and health literacy research and practice has the potential to improve these health outcomes with effective message design.

E-health interventions are an approach to educate, change behavior, and potentially improve health outcomes in low health

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Communication Design Quarterly. ACM SIGDOC, New York, USA.

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literate audiences (Block et al., 2004; Mackert, Love, & Whitten, 2009; McKay, King, Eakin, Seeley, & Glasgow, 2001; Tessaro, Rye, Parker, Mangone, & McCrone, 2007). Currently, 80% of Americans with Internet access are searching for health information electronically (Kuehn, 2011), making digital communication an instrumental technique for spreading valuable health information. Technological advances allowing for dynamic displays of health information are especially important for individuals faced with greater barriers in comprehending and applying health information to their personal lives. Design considerations, undertaken early in the development process, will positively impact the outcomes of health interventions (Mackert et al., 2009). Visual design functions as the entrance to e-health resources. Design has been shown to be largely influential on one's willingness to attend to or obtain health information (Sillence et al., 2007a; Sillence, Briggs, Harris, & Fishwick, 2007b). This is particularly important if interventions designed for lower health literate audiences prove acceptable to broader audiences of all ranges of health literacy (Mackert, Whitten, & Garcia, 2008), suggesting lessons learned by focusing on lower health literate audiences can translate to improved health interventions for all.

While there are numerous scholars working to advancing e-health through simplification strategies and investigations of interactivity perceptions, there is a gap in the literature. Investigations focused on content simplification and interactivity, while fruitful areas of research, usually 'gloss over' the initial first encounter and the role of visual evaluations. Design guidelines that are limited to message simplification (Doak, Doak, Friedell, & Meade, 1998; International Organization for Standardization, 1999; National Cancer Institute, 2003), assume the reader is already attending to and investing resources to read the information. Similarly, investigations of interactivity and usability perception assume the consumer is using the intervention (Morrison, Yardley, Powell, & Michie, 2012). Health literacy begins with the ability to obtain information, followed by abilities to process, understand and use this information. Failure to fully consider the role of visual design in obtainment of information is a missed opportunity, disrupting the health literacy process at its initial stage.

A design focus is imperative for e-health messages to effectively reach various audiences, including low health literacy populations, and can lead to better health outcomes. This paper is a call for scholars and practitioners to rethink how they are approaching designed communication strategies by including the largely influential role of visual design. There is a rich, although fragmented, body of literature that should guide health literacy scholars in their research for effective visual elements or design strategies. Much insight can be gained from the visual design research of visual communication, technical communication, and human computer interaction scholars, with their studies of visual perception and persuasion for applied message design (Peak, Prybutok, Wu, & Xu, 2011). Research on the impact of specific visual elements or the holistic presentation is directly applicable to health literacy studies focused on improving e-health. The following five theory-based design principles are highlighted for their evidence-based, influential role in visual evaluations: web aesthetics, visual complexity, prototypicality, affordances, and visual persuasion. Utilizing an integrative review of visual design literature, the remainder of this paper provides theoretical background for these key principles, presents empirical evidence for their role in perceptions of online information, and discusses how these principles should be considered when

designing and developing e-health interventions for both research and practice. While the advent of e-health has revolutionized the entry point for health information and services, these changes in access and outreach come with a great responsibility to design for the needs of the healthcare consumer.

KEY PRINCIPLES

E-health interventions have much to gain from applications of visual design theories and models. Acknowledging the role of design in e-health is essential, as screen-based applications do not exist in the absence of visual design. Furthermore, theory-based designs are advantageous for improving effectiveness by building on accumulated design knowledge and empirical evidence, which are learned by users and used as guides for accessing information. Many current design strategies, often focused on the simplifications of content, are falling short in improving health literacy goals (Jensen, 2012). To broaden our understanding and ability to reach consumers and aid in the understanding of critical health information, design must be considered as a hypothesis that directly influences communication (Aakhus, 2007; Aakhus & Jackson, 2005). Visual design must be conceptually applied as both an object and a communication process to guide e-health research and intervention outreach by acknowledging the role of the following principles early in the development of e-health (Aakhus, 2007). Application of these theory-based principles allows for useful extensions of the literature by building knowledge about effective e-health strategies, while simultaneously working towards an improved digital landscape that alleviates barriers for health literacy that are currently present in much of the available online health content.

Web Aesthetics: Viewing Pleasure Based on Object and Interpretation

Theory. Aesthetics theory has a rich history that has recently been applied to screen designs as a factor of satisfaction in the user experience (Hassenzahl, 2004; Lavie & Tractinsky, 2004; Tractinsky, Katz, & Ikar, 2000). Aesthetics, often referred to as evaluations of beauty, and usefulness have been strongly linked since ancient times and continue to have a mutually beneficial relationship in the digital environment (Lavie & Tractinsky, 2004). Web aesthetics are increasingly identified as an influential factor in the assessment of online information during one's initial exposure and throughout the user experience, which may improve the processing and understanding of the presented content (Lavie & Tractinsky, 2004). Aesthetic evaluations widely influence social judgments for personal interactions (Dion, Berscheid, & Walster, 1972), product evaluations (Bloch, 1995), and contribute to the assessment of online information, which functions as both social interaction and product (Lavie & Tractinsky, 2004; Reeves & Nass, 1996). Classical studies of aesthetics have often taken an objective stance, with aesthetic qualities seen as properties of the object's form, albeit against criticism of this view for its reductionist approach (Lavie & Tractinsky, 2004). Current theories and studies, taking an interactionist perspective to be able to consider both the objective design and the subjective evaluation aesthetics, have countered these criticisms with attempts to include insight from viewers' aesthetic preferences and evaluations (Lavie & Tractinsky, 2004; Moshagen & Thielsch, 2010).

While aesthetic values are widely used as an assessment tool in a variety of disciplines, web aesthetics is a new field of research for

online communication. Objective measures, which include balance, unity, and sequence (Altaboli & Lin, 2011), are complemented by emergent properties of simplicity, diversity, colorfulness, and craftsmanship (Moshagen & Thielsch, 2010). Furthermore, exploratory research has given scholars the foundation for classifying the subjective evaluations of aesthetics for websites through ‘classical aesthetics’ or ‘expressive aesthetics’ (Lavie & Tractinsky, 2004). Classical aesthetics refers to the principles that have been associated with aesthetic values since antiquity that highlight the use of clear design and orderly displays (Feagin & Maynard, 1997; Lavie & Tractinsky, 2004). Classical aesthetic serve to establish order, reduce ambiguity, and increase familiarity, which are all instrumental in information seeking behavior online (van Schaik & Ling, 2009). On the other hand, expressive aesthetics are represented through designs distinctly expressing originality or novelty, often in terms of the designers’ innovation or creativity (Lavie & Tractinsky, 2004). Expressive aesthetics are preferred when users are in action mode, as they generally lead to increased arousal and excitement (van Schaik & Ling, 2009).

Empirical Evidence. There is increasing recognition and empirical evidence for information systems design to consider visual aesthetics, as poor design is linked with negative performance and cognitive consequences for the user experience (Hassenzahl, 2004; Tractinsky et al., 2000). The reverse appears to be true as well; increased appeal through positive aesthetic evaluations has been correlated with increased perceived ease of use (Altaboli & Lin, 2011; Lindgaard et al., 2006; Tractinsky et al., 2000). Additionally, favorable aesthetic evaluations have been shown to increase speed of search task completion (Moshagen, Muscha, & Göritz, 2009), reduce errors during use (Sonderegger & Sauer, 2010), increase trustworthiness (Kim & Moon, 1998), and perhaps most importantly for the communication of health information, increase favorable evaluations of content (Aladwani & Palvia, 2002; Palmer, 2002).

Next Steps and Translation. Evidence for benefits of positive aesthetic evaluations illustrates the need for e-health designers to consider objective aesthetic principles and testing of subjective evaluations during the development of e-health interventions. Given that evaluations of the aesthetics are made quickly and are generally stable, understanding the influence of classical and expressive aesthetics on perceptions of online health information is critical for improved e-health outreach (Lindgaard et al., 2006; Tractinsky, Cokhavi, Kirschenbaum, & Sharfi, 2006). Positive initial evaluations are critical factors to keep users on the site and potentially allow for return visits, especially when individuals are information seeking (Tractinsky et al., 2006; van Schaik & Ling, 2009). Future research that investigates how low health literate audiences evaluate e-health aesthetics could increase communication effectiveness and improve perceived usability.

Visual Complexity: The Right Amount of Visual Information

Theory. Visual complexity theory is closely associated with aesthetics theory, but differs in its treatment of the theoretical underpinnings. Visual complexity is a marker of cognitive load through implicit visual cues, which greatly impact perceptions of online information (Harper, Michailidou, & Stevens, 2009). Based primarily on Gestalt psychology, along with heavy reliance on Berlyne’s aesthetic theory, visual complexity theory hones in on perceived variation, expressed through a lack of redundancy (Berlyne, 1974; Donderi, 2006; Pieters, Wedel, & Batra, 2010).

Visual complexity theorists have traditionally focused on algorithm-based principles to determine high- versus low-complexity with calculations of edge detection and varying degrees of color, shading, and texture (Donderi, 2006; Donderi & McFadden, 2005; Pieters et al., 2010; Tuch, Bargas-Avila, Opwis, & Wilhelm, 2009; Wu, Hu, & Shi, 2013). The amount of visual variation correlates with favorable viewer responses in an inverted U-curve, as depicted in Berlyne’s aesthetic theory (Berlyne, 1974; Pieters et al., 2010; Tuch, Presslauer, Stocklin, Opwis, & Bargas-Avila, 2012). Although not always evidenced in an exact inverted-U, this relationship illustrates when there is too little visual information, there is little arousal potential and risk of not gaining the viewers attention (Berlyne, 1974; Pandir & Knight, 2006). Conversely, if there is an overwhelming amount of visual information, viewers will have high arousal potential but negative hedonic values leading to aversion or negative reactions to the information (Berlyne, 1974; Tuch et al., 2012). The amount of visual information that falls into the sweet spot for achieving the highest appeal is shown as a combination of heightened arousal potential accompanied by perceptions of pleasure and reward (Berlyne, 1974).

Visual complexity is determined through varying levels of complexity, novelty and ambiguity in visual design (Tuch et al., 2009). Recently, visual complexity has been demonstrated to be a more nuanced concept, comprised of feature complexity and design complexity (Pieters et al., 2010). Feature complexity captures the unstructured amount of variation traditionally attributed with visual complexity studies with comparable results for perception arousal and valance. However, design complexity is a more integrative measure of structural variations of shapes, objects, and layout that comprise creative design (Pieters et al., 2010). Design complexity is a summation of the following six design principles: quantity of objects, irregularity of objects, dissimilarity of objects, detail of objects, asymmetry of object arrangement, and irregularity of object arrangement (Berlyne, 1958; Donderi, 2006; Geissler, Zinkhan, & Watson, 2006; Kosslyn, 1975; Pieters et al., 2010).

Empirical Evidence. Visual complexity of websites impacts attention, appeal, arousal, pleasure, attitudes, and intentions for online messages on initial impressions (Geissler, Zinkhan, & Watson, 2001; Geissler et al., 2006; Tuch et al., 2009; Tuch et al., 2012). Furthermore, first exposure evaluations lead to carry-over effects for subsequent behavior (Deng & Poole, 2010). While lower levels of visual complexity are associated with pleasure and increased memory, even in cases where arousal isn’t at its peak (Tuch et al., 2009), users generally prefer mid-range levels of visual complexity theory (Donderi & McFadden, 2005; Geissler et al., 2006; Hsiu-Feng, 2013). Motivations and user needs have also been shown to influence evaluations of visual complexity; information seeking behavior is associated with preferences for lower visual complexity, while individuals that are internet surfing tend to prefer higher visual complexity (Stanaland & Tan, 2010). Increased visual complexity negatively impacts search completion performances (Donderi & McFadden, 2005; Rosenholtz, Li, & Nakano, 2007), providing further rationale for why visual complexity is an important consideration for audiences performing specific health information searches (e.g., searching for information on macular degeneration).

The distinct categorization of visual complexity, feature complexity versus design complexity, allows for more interpretable results for future research and practice. After a peak, increased feature complexity results in negative reactions to messages, mirroring the

findings of traditional visual complexity investigations (Pieters et al., 2010). Design complexity however, is indicated to have a positive linear relationship with attention, comprehensibility, and attitude as design complexity increases (Pieters et al., 2010). One of the six principles of design complexity, detail of an object, is influential for icon design in digital communication, where increasing levels of detail lead to greater likelihood of interpretations of the intended meaning and search efficacy (McDougall, de Bruijn, & Curry, 2000; Pappachan & Ziefle, 2008). Beyond appeal, principles of design complexity, such as amount of objects and object arrangement, are key for information processing and understanding. Specifically, greater design complexity leads to increased perceptions of message comprehensibility, ease of use, usefulness, message quality, informativeness, and visual informativeness for first impressions of health websites - all critical antecedent variables for actual use (Davis, 1989; King, Jensen, Davis, & Carcioppolo, 2014; Lazard & Mackert, in press; Venkatesh & Bala, 2008). Additionally, when messages follow visual design guidelines that inform layout and structure, likelihood for comprehension of text-based information increases (Jin, 2013).

Next Steps and Translation. Visual complexity is associated with increased attention, which is the instrumental first step for audiences to benefit from e-health intervention efforts. Visual complexity is instrumental in finding the right balance among interest, pleasure, and usability (Harper et al., 2009). There is likely a range of visual complexity that is perceived as most pleasurable, as these evaluations are highly subjective (Pandir & Knight, 2006), indicating a need to better understand low health literacy audiences and their visual complexity preferences. Visual complexity levels that meet the ideal combination of arousal and pleasure, thus leading to positive responses, are also likely to be context dependent. Individual's expectations of a medium and motivations should be considered when investigating the appropriate level of visual complexity.

Visual complexity arousal potentials may be amplified for e-health and the communication of complex health concept, another important consideration for designers and developers. Tailoring design features, such as menus and toolbars, to consumer needs has been demonstrated as one method to reduce visual complexity (Findlater & McGrenere, 2010). Although a tailored approach may have the negative effect of reducing awareness of all communication possibilities, this is a viable strategy that should be considered for the customization of e-health for individual consumption (Findlater & McGrenere, 2010). Visual complexity should be considered in overall design layout, as well with regard to specific design features (e.g., navigational icons, images). Investigations are needed to determine design complexity guidelines for improved user experiences when communicating health information online, with continued efforts to parse out the elements that influence visual complexity and better understand the impact for e-health research and practice. Design complexity, with its specific focus on structural design instead of simply amount of variation, is an especially promising area for e-health as technological advances help to eliminate visual design restrictions for screen-based communication. By investigating the effects of visual complexity, through a variety of methods, developers and designers of e-health will be able establish a threshold of acceptable amounts of visual variations and visual complexity guidelines for low health literate individuals. Investigations of the impact of visual complexity on health literacy, will inform cognitive load expectancies, arousal potential, and likelihood for positive evaluations of online health content.

Affordances: Revealing Action Possibilities

Theory. Affordances are cues for meaning in visual design, revealing behaviors or action possibilities an object may have for the user (Gibson, 1986; Norman, 2002). Introduced by Gibson in his theory of affordances, this theory recognizes affordances are neither objective nor subjective, but rather they are both at once. An object's design inherently reveals action possibilities, but there is no existence of an affordance until this is perceived and attended to by a viewer (Gibson, 1986). The study of affordances involves the physical and the psychical, investigating the bidirectional relationship between the structure and the perceived action possibilities for the viewer (Donderi, 2006; Gibson, 1986). Gibson's conceptual framework for affordances differed greatly from his contemporaries by acknowledging the visual relationship between the object and the observer. The application of affordance thinking in the theory of visual perception recognized that visual complexity alone is not enough to measure the value or meaning of an object (Donderi, 2006; Gibson, 1986). Designed communication messages can fail if their complex design obscures necessary cues to function or if they are too simple, as they may not have all the necessary information revealed that a viewer requires (Donderi, 2006).

Much of what an object affords is perceived by its physical surface in a glance (Gibson, 1986). Vision allows for the innate ability to determine dimension, color, and texture almost instantaneously (Marr, 1982). A button in the physical world affords depression through its visual height and its obstruction of light to reveal shadows, along with the viewer's learned behavior towards the object. While this example is fairly benign in the physical world, an understanding of the role of affordances becomes critical as health information is increasingly presented in a virtual world, where affordances, which lead to information access, are primarily controlled by the visual design. E-health interventions and outreach strategies are innately inhibited from communicating their affordances through physical properties, due to their consistent screen-based communication method. Consequently, the role of affordances lays entirely to the visual design through perceived affordances (Norman, 1999). There are likely two levels of consideration truly necessary to understand this concept. One is looking at the entire design as an affordance, giving clues for future possibilities. The second is drilling down to the salient cues that are likely influential in the formation of that holistic opinion.

Empirical Evidence. While literature on actual evaluations of affordances for online interaction is scarce, there is evidence that there are five major perceived affordance factors that influence a user's acceptance of an e-reader (Seet & Goh, 2012). These include: mobility affordance, support affordance, connectivity affordance, immediacy affordance, and collaborative affordance (Seet & Goh, 2012). Additionally, results suggest prototyping is critical to the design process to identify user experience preferences (Seet & Goh, 2012). Additionally, the method for displaying pictorial affordances has been shown to greatly impact perception and retention of steps in an activity (Lowe, Schnotz, & Rasch, 2011). Showing static, successive depictions improved viewer's abilities to reconstruct a dynamic activity (Lowe et al., 2011), a useful consideration when needing to convey health information or instructions that are sequential in nature.

Next Steps and Translation. Virtual objects necessitate features that function as visual references for action possibilities or behavioral invitations (Withagen, de Poel, Araújo, & Pepping, 2012). Without these, it is hard for users to identify and assign

meaning to the displayed objects (Norman, 2002). Visual design has the unique ability to alter shapes and surface features that comprise the visual presentation, changing what the presentation affords. Imagery and visual displays can be adjusted to accentuate the elements that afford meaning (Barry, 1997; Norman, 2002). Investigations of design features that afford action without violating visual complexity are necessary for e-health development. By considering the intersection of usability with design perceptions of individuals with low health literacy, communication delivery devices that are perceived as easy to use, and health communicators' intentions, researchers will gain insight on how best to design to match these cues (Xenakis & Arnellos, 2013). Piloting theoretically based designs, with opportunity for feedback from users and true revisions, will be crucial moving forward.

Prototypicality: Matching Audiences' Mental Models

Theory. Viewers have selective attention; making the placement of visual cues an imperative area of focus for e-health designers to be able to gain attention during the initial visual encounter. Beyond the holistic visual perception and attention-grabbing visuals, design research should highlight elements individuals identify as salient cues at first glance (Tuch et al., 2012). Salient cues indicate the level of prototypicality, defined as the degree to which an object resembles others in its class, and is influential in the viewer's level of familiarity (Leder, Belke, Oeberst, & Augustin, 2004; Tuch et al., 2012). The placement of salient cues in expected locations is crucial for initial evaluations of the e-health (Roth, Tuch, Mekler, Bargas-Avila, & Opwis, 2013). Typical objects of recognition, such as search fields, navigational menus, and home buttons, are considered common items that are quickly identified (Oulasvirta, Karkkainen, & Laarni, 2005; Roth, Schmutz, Pauwels, Bargas-Avila, & Opwis, 2010). Prototypicality is one of the concepts influential to heuristic processing when encountering the expanse of visual information presented online.

When encountering information online, expectations for form and function vary greatly in differing populations, indicating that prototypicality is not a consistent concept among audiences. Expectations for online information presentations form one's mental model, which include placement of navigation cues, search field options, and home button placement (Roth et al., 2010). If something does not look or act as one thinks it should, errors are more likely, which can decrease efficiency (Roth et al., 2010). Furthermore, users are unlikely to continue their focused attention, let alone believe or apply the information in a meaningful way, if errors lead to frustration or confusion. Conversely, matching one's mental model with high levels of prototypicality could potentially increase the use of an e-health website or application, regardless of health literacy levels.

Empirical Evidence. The placement of navigational areas is especially important, as search boxes, menus, and return to homepage links are some of the key items viewers have well-defined expectations for placement (Roth et al., 2010). For example, back to homepage links are often expected to be found in the top left corner on a website (Roth et al., 2010). A simple expectation, but vital to a viewer that relies on this navigational tool for orientation with the website. Search boxes have a high expectation of top right corner placement and navigational menus on the left edge below the logo at the top of the screen; representing two additional variables where placement outside the expectation may lead to error, reduced ease of use, and frustration (Goldberg, Stimson, Lewenstein, Scott, & Wichansky, 2002; Roth et al., 2010).

While creativity and novelty are appreciated to a certain degree, too much divergence from the populations' mental model can prove to be a fatal flaw for online messages.

One's mental model is often derived from past experiences; therefore designers must know the target audiences' past online and health information presentation experiences. Visual recognition of objects, information, and navigation placement in familiar areas will allow viewers to orient with the website more quickly (Oulasvirta et al., 2005; Roth et al., 2013; Tuch et al., 2012). This is of even greater importance for low health literate individuals that may have limited abilities to process the health information in addition to other barriers for e-health intervention use. Initial research is needed to ensure there is a match between the e-health design and the audience's mental model. Research that isolates the needs of a specific demographic or community will allow designers to better answer key questions in designing successful e-health interventions.

Next Steps and Translation. All designed objects become obsolete if they do not meet the needs of the target audience. Prototypicality research can guide online communication design to go beyond simply visual pleasure, and perhaps even functioning uniquely, resulting in designs that are desired and utilized by the intended audience. Determining the characteristics and features of the screen's interface and the website's functionality should not be done without an understanding of how individuals expect to receive the information. By collecting initial data about the target audiences' mental models of e-health, basic health knowledge, and health literacy, one can avoid the common failure of an online communication that lacks true understanding of users' needs, thus creating a website or application that will not be used. This is often seen when there is a lack of user-centered design practices, leading to innovations that never progress past their initial phase of introduction and become obsolete. Additionally, as e-health interactions increasingly occur on a variety of devices, there is a need to better understand prototypicality for other devices, such as tablets and mobile phones.

Persuasive Imagery: The Impact of Imagery Selection

Theory. Visual presentations utilizing persuasive imagery have unique capability to implicitly express analogies, comparisons, relationships, and associations (Messaris, 1997). Imagery also has empowering advantages for emotional connections with consumers (Barry, 1997; Joffe, 2008). While text-based designs require the viewer to cognitively process information, visuals can be directly experienced through perceptual processes (Barry, 1997). This unique asset allows for visuals to elicit emotional connections beyond the cognitive abilities of the viewer (Barry, 1997). Image processing is first dictated by the "visual based reasoning and interpretation of the perceived message" (Dake, 2005). Visually presented messages are perceived holistically through the entire visual display, before any textual information can be analyzed one word at a time (Barry, 1997; Dake, 2005). However, it is no longer acceptable to dismiss imagery as simple "affect laden or information devoid" cues, as imagery is often information dense with the potential to increase cognitive processing (Scott, 1994).

Persuasive imagery literature covers an array of visual presentation topics, ranging from imagery content to style or artistic technique. Imagery is very influential on attention and appeal. Indeed, visually rich social marketing approaches are increasingly in use in place of text-based education (Joffe, 2008). Certain types of photographs,

especially images of faces and humans, attract attention and are associated with higher levels of brain activity. In fact, an area of the brain dedicated to facial recognition gives priority to this information through our biological programming, so individuals often spend the majority of their attention on faces compared to other visual stimuli on screen (Hill, 2010; Kanwisher, McDermott, & Chun, 1997). Images of the human body function in a similar way, increasing the likelihood that the viewer will attend to the visuals with the human form (Downing, Bray, Rogers, & Childs, 2004). Furthermore, direct eye contact and gaze direction of an image's subject each influence directions of attention and engagement (Allison, Puce, & McCarthy, 2000).

Inseparable from imagery content, the visual techniques used to create images are another dimension of influence that must be considered in the persuasive power of images. The theory of visual persuasion posits that imagery style greatly influences perception of visual information through a style's capability to express higher levels of iconicity, indexicality, or symbolism (Messaris, 1997). For example, images that appear to be artifacts of the real world, e.g., fingerprints, photographs, and ultrasounds, are often processed as evidence of truth, while illustrated images can benefit comprehension by conveying information that is beyond the bounds of the visible world, i.e., biological illustrations (Messaris, 1997). Considering their persuasive capabilities, comics are gaining recognition in the medical field as unique instruments for communicating complex information in a condensed space (Green & Myers, 2010). By utilizing varying visual tactics and the combination of illustration and text, comics are able to relay messages beyond the capabilities of text alone (Abraham, 2009; Green & Myers, 2010). Comics or graphic stories have the ability to display implicit, and likely visceral, information in the illustration that viewers can connect with directly and then process textual information for further explanation and meaning (Barry, 1997; Green & Myers, 2010).

Empirical Evidence. Pictorial aids shown in conjunction with written or oral instruction improve understanding of medical instructions (Katz, Kripalani, & Weiss, 2006) and retention of health concepts (Frisch, Camerini, & Schulz, 2013). Visuals congruent with text-based information, depicting medical risks and benefits, increase understanding and satisfaction, especially when visual displays match individual learning preference (Tait, Voepel-Lewis, Brennan-Martinez, McGonegal, & Levine, 2012). Visuals that aid complex language increase viewers' satisfaction when searching for disease state information (van Weert et al., 2011), as well as increasing both satisfaction and comprehension of website messages (van Weert et al., 2011) and electronic displays of medical treatment risks and benefits (Tait et al., 2012). Web design ratios of graphics to text is another important aspect impacting users' feelings and is linked to visual aesthetics (Lin, Yeh, & Wei, 2013). For example, image maps can serve as functional solutions to guide navigation when cognitive processing resources are low or the content is complex (Meloncon, Haynes, Varelmann, & Groh, 2010). Visual information to text ratios that are clear to follow can increase perceived ease-of-use and should be considered when designing e-health interventions.

Next Steps and Translation. User-centered design processes for developing visual communication imagery for low health literate audiences should serve as exemplars for e-health research and application. As illustrated through antiretroviral therapy communication efforts, collaboration among the target audience, designers, and healthcare providers, found concrete imagery,

which referenced the human body, and contextualized information in familiar experiences were the most successful communication tools for individuals with lower health literacy (Dowse, Ramela, Barford, & Browne, 2010).

Imagery, often accompanied with some text, is a powerful influence on emotion and judgment (Joffe, 2008). As multimodal communication is increasingly used in health messaging (Joffe, 2008), it is of great importance to consider how the use of persuasive imagery in e-health influences the perceptions of health information for low health literate individuals, as well as broader audiences. Imagery has the potential to capture attention and stimulate brain activation and should be one of the key factors for consideration in health information message outreach. Additionally, there is a need for literature that examines various types of visual styles to understand how they influence perceived relevance, identification, and comprehension of health information, as well as specific investigations for the influence of content and imagery of style for perceptions of health information.

DISCUSSION

A more substantial focus on visual design research for e-health interventions is critical. As electronic platforms and presentation abilities abound, the increased amount of available information creates an environment of distraction and confusion (Nan & Faber, 2004). Visual perception is a primary factor influencing first impressions (Roth et al., 2013; Thielsch, Blotenberg, & Jaron, 2013), attention (Pieters et al., 2010), appeal (Tuch et al., 2012), aesthetics (Lavie & Tractinsky, 2004; Thielsch et al., 2013), orientation (Roth et al., 2013), trust (Cyr, Head, Larios, & Pan, 2009; Sillence et al., 2007a), and credibility of health information (Robins, Holmes, & Stansbury, 2010). When viewers reject a website, their rationale is attributed to the look and feel of the site; however, the content quality is often the rationale for e-health acceptance (Sillence et al., 2007a). This evidence further suggests the interfaces' visual design may be the gateway determining if a viewer will potentially accept, trust, and take time to evaluate the informational content.

Design research has the potential to improve e-health effectiveness through engaging, simple, and effective message outreach. These key design principles will inform communication approaches that are necessary to improve health outcomes for low health literate individuals, while improving health communication for all populations (Doak et al., 1998). Low health literacy burdens individuals with poor health outcomes and society with increased healthcare costs (Zarcadoolas, Pleasant, & Greer, 2006). Theory-based design research that directly addresses strategic development for attention deficiencies, aesthetic evaluations, and information processing barriers is a critical step in eliminating disparities that arise due to lower health literacy levels. Recognizing these additional barriers for individuals with low health literacy will guide health communication design practices for improved outreach for those susceptible to worsened health outcomes, and in turn improve access for everyone.

Given the limited amount of theory-based work focusing on the role of interface design in health communication (Mackert, Champlin, Holton, Munoz, & Damásio, in press), research that ranges from analysis of current trends to experimental testing of design approaches would be of great benefit. Graphical elements, images, and structures should be designed and tested for increased interest and appeal without introducing clutter. Visual design

elements, such as icons to visually reinforce a text-based concept or shading to differentiate topics into balanced, digestible parts, may increase the ease of processing for health information at-a-glance and beyond. Research, which considers these key design principles that are based in objective and subjective inquiry, is needed to truly approach design as a hypothesis for e-health. Evaluating the role of web aesthetics, visual complexity, affordances, prototypicality, and persuasive imagery through objective changes to design and subjective evaluations will be key for improving online health communication methods.

Design research that uses multidisciplinary approaches to e-health will help solve a widespread health problem while simultaneously advancing design research. As the visual gateway and functional access for health information, visual design is a critical area for concern in e-health development. Research that furthers the understanding of the impact of visual design for e-health and health literacy provides great benefit to scholars and practitioners. Scholars investigating design techniques that best serve low health literate audiences, through empirically based research, will further the goals of e-health while also closing the disparity of health outcomes and potentially reduce healthcare costs. The discovery of visual design strategies that can be best utilized for hard-to-reach populations, defined by low health literacy, will serve practitioners and health care professionals with the ability to apply better design practices for health communication targeting all populations.

REFERENCES

- Aakhus, M. (2007). Communication as Design. *Communication Monographs*, 74(1), 112-117.
- Aakhus, M., & Jackson, S. (2005). Technology, Interaction, and Design. In K. L. Fitch & R. E. Sanders (Eds.), *Handbook of Language and Social Interaction*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Abraham, L. (2009). Effectiveness of Cartoons as a Uniquely Visual Medium for Orienting Social Issues. *Journalism & Communication Monographs*, 11(2), 117-165.
- Ad Hoc Committee on Health Literacy. (1999). Health Literacy: Report of the Council on Scientific Affairs. *Journal of the American Medical Association*, 281, 552-557.
- Aladwani, A. M., & Palvia, P. C. (2002). Developing and Validating an Instrument for Measuring User-perceived Web Quality. *Information & Management*, 39(6), 467-476.
- Allison, T., Puce, A., & McCarthy, G. (2000). Social perception from visual cues: role of the STS region. *Trends in Cognitive Sciences*, 4(7), 267-278.
- Altaboli, A., & Lin, Y. (2011). Investigating effects of screen layout elements on interface and screen design aesthetics. *Advances in Human-Computer Interaction*, 2011(5), 1-10.
- Barry, A. M. (1997). *Visual Intelligence: Perception, Image, and Manipulation in Visual Communication*. Albany, NY: State University of New York Press.
- Berkman, N. D., Davis, T. C., & McCormack, L. (2010). Health literacy: What is it? *Journal of Health Communication: International Perspectives*, 15(S2), 9-19.
- Berkman, N. D., Sheridan, S. L., Donahue, K. E., Halpern, D. J., & Crotty, K. (2011). Low Health Literacy and Health Outcomes: An Updated Systematic Review. *Annals of Internal Medicine*, 155(2), 97-107.
- Berlyne, D. E. (1958). The influence of complexity and novelty in visual figures on orienting responses. *Journal of Experimental Psychology*, 55(3), 289-296.
- Berlyne, D. E. (1974). *Studies in the new experimental aesthetics: steps toward an objective psychology of aesthetic appreciation*. Washington: Hemisphere Pub. Corp.
- Bloch, P. H. (1995). Seeking the Ideal Form: Product Design and Consumer Response. *Journal of Marketing*, 59(3), 16-29.
- Block, G., Wakimoto, P., Metz, D., Fujii, M. L., Feldman, N., Mandel, R., & Sutherland, B. (2004). A Randomized Trial of the Little by Little CD-ROM: Demonstrated Effectiveness in Increasing Fruit and Vegetable Intake in a Low-Income Population. *Preventing Chronic Disease*, 1(3), 1-12.
- Cyr, D., Head, M., & Ivanov, A. (2006). Design aesthetics leading to m-loyalty in mobile commerce. *Information & Management*, 43(8), 950-963.
- Cyr, D., Head, M., Larios, H., & Pan, B. (2009). Exploring Human Images in Website Design: A Multi-Method Approach. *MIS Quarterly*, 33(2), 539-566.
- Dake, D. (2005). Aesthetics Theory. In K. Smith, S. Moriarty, G. Barbatsis, & K. Kenney (Eds.), *Handbook of Visual Communication: Theory, Methods, and Media*. Mahwah, New Jersey: Lawrence Erlbaum Associates, Inc.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13, 319-340.
- Deng, L., & Poole, M. S. (2010). Affect in Web Interfaces: A Study of the Impacts of Web Page Visual Complexity and Order. *MIS Quarterly*, 34(4), 711-730.
- Dion, K., Berscheid, E., & Walster, E. (1972). What is beautiful is good. *Journal of Personality and Social Psychology*, 24(3), 285-290.
- Doak, C., Doak, L., Friedell, G., & Meade, C. (1998). Improving Comprehension for Cancer Patients with Low Literacy Skills: Strategies for Clinicians. *CA: A Cancer Journal for Clinicians*, 48, 151-162.
- Donderi, D. C. (2006). Visual Complexity: A Review. *Psychological Bulletin*, 132(1), 73-97.
- Donderi, D. C., & McFadden, S. (2005). Compressed file length predicts search time and errors on visual displays. *Displays*, 26(2), 71-78.
- Downing, P. E., Bray, D., Rogers, J., & Childs, C. (2004). Bodies Capture Attention When Nothing Is Expected. *Cognition*, 93(1), B27-B38.
- Dowse, R., Ramela, T., Barford, K.-L., & Browne, S. (2010). Developing visual images for communicating information about antiretroviral side effects to a low-literate population. *African Journal of AIDS Research*, 9(3), 213-224.

- Eysenbach, G. (2001). What is e-health? *Journal of Medical Internet Research*, 3(2), e20.
- Feagin, S. L., & Maynard, P. (1997). *Aesthetics*. Oxford: Oxford University Press.
- Findlater, L., & McGrenere, J. (2010). Beyond performance: Feature awareness in personalized interfaces. *International Journal of Human-Computer Studies*, 68(3), 121-137.
- Frisch, A.-L., Camerini, L., & Schulz, P. J. (2013). The Impact of Presentation Style on the Retention of Online Health Information: A Randomized-Controlled Experiment. *Health Communication*, 28(3), 286-293.
- Geissler, G. L., Zinkhan, G. M., & Watson, R. T. (2001). Web Home Page Complexity and Communication Effectiveness. *Journal of Association for Information Systems*, 2(2), 1-46.
- Geissler, G. L., Zinkhan, G. M., & Watson, R. T. (2006). The Influence of Home Page Complexity on Consumer Attention, Attitudes, and Purchase Intent. *Journal of Advertising*, 35(2), 69-80.
- Gibson, J. J. (1986). *The ecological approach to visual perception*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Goldberg, J. H., Stimson, M. J., Lewenstein, M., Scott, N., & Wichansky, A. M. (2002). Eye Tracking in Web Search Tasks: Design Implications. Paper presented at the ACM. *Proceedings of the 2002 symposium on Eye tracking research & applications*.
- Green, M. J., & Myers, K. R. (2010). Graphic Medicine: Use of Comics in Medical Education and Patient Care. *British Medical Journal*, 340, 574-577.
- Harper, S., Michailidou, E., & Stevens, R. (2009). Toward a Definition of Visual Complexity as an Implicit Measure of Cognitive Load. *ACM Transactions on Applied Perception*, 6(2), 10:11-10:18.
- Hassenzahl, M. (2004). The Interplay of Beauty, Goodness, and Usability in Interactive Products. *Human-Computer Interaction*, 19(4), 319-349.
- Hill, D. (2010). *About Face: The Secrets of Emotionally Effective Advertising*. Philadelphia: Kogan Page Limited.
- Hsiu-Feng, W. (2013). Picture perfect: Girls' and boys' preferences towards visual complexity in children's websites. *Computers in Human Behavior*, 31, 551-557.
- International Organization for Standardization. (1999). *ISO 13407: Human-centred design processes for interactive systems*. Retrieved March 11, 2013, from <http://www.ash-consulting.com/ISO13407.pdf>
- Jensen, J. D. (2012). Addressing Health Literacy in the Design of Health Messages. In H. Cho (Ed.), *Health Communication Message Design* (pp. 171-189). Thousand Oaks, CA: Sage.
- Jin, S.-H. (2013). Visual design guidelines for improving learning from dynamic and interactive digital text. *Computers & Education*, 63, 248-258.
- Joffe, H. (2008). The Power of Visual Material: Persuasion, Emotion and Identification. *Diogenes*, 55(1), 84-93.
- Kanwisher, N., McDermott, J., & Chun, M. M. (1997). The Fusiform Face Area: A Module in Human Extrastriate Cortex Specialized for Face Perception. *The Journal of Neuroscience*, 17(11), 4302-4311.
- Katz, M. G., Kripalani, S., & Weiss, B. D. (2006). Use of Pictorial Aids in Medication Instructions: A Review of the Literature. *American Journal of Health-System Pharmacy*, 63(23), 2391-2397.
- Kim, J., & Moon, J. Y. (1998). Designing towards emotional usability in customer interfaces-trustworthiness of cyber-banking system interfaces. *Interacting with Computers*, 10(1), 1-29.
- King, A. J., Jensen, J. D., Davis, L. A., & Carcioppolo, N. (2014). Perceived Visual Informativeness (PVI): Construct and Scale Development to Assess Visual Information in Printed Materials. *Journal of Health Communication*, (ahead-of-print), 1-17.
- Kosslyn, S. M. (1975). Information Representation in Visual Images. *Cognitive Psychology*, 7(3), 341-370.
- Kuehn, B. M. (2011). Patients go online seeking support, practical advice on health conditions. *JAMA*, 205(16), 1644-1645.
- Lavie, T., & Tractinsky, N. (2004). Assessing dimensions of perceived visual aesthetics of web sites. *International Journal of Human-Computer Studies*, 60(3), 269-298.
- Lazard, A. & Mackert, M. (2014) User evaluations of design complexity: The impact of visual perceptions for effective online health communication. *International Journal of Medical Informatics*. 83(10), 726-735. DOI: 10.1016/j.ijmedinf.2014.06.010
- Leder, H., Belke, B., Oeberst, A., & Augustin, D. (2004). A Model of Aesthetic Appreciation and Aesthetic Judgments. *British Journal of Psychology*, 95(4), 489-508.
- Lin, Y.-C., Yeh, C.-H., & Wei, C.-C. (2013). How will the use of graphics affect visual aesthetics? A user-centered approach for web page design. *International Journal of Human-Computer Studies*, 71(3), 217-227.
- Lindgaard, G., Fernandes, G., Dudek, C., & Brown, J. (2006). Attention Web Designers: You Have 50 Milliseconds to Make a Good First Impression! *Behaviour and Information Technology*, 25(2), 115-126.
- Lowe, R., Schnotz, W., & Rasch, T. (2011). Aligning Affordances of Graphics with Learning Task Requirements. *Applied Cognitive Psychology*, 25(3), 452-459.
- Mackert, M., Champlin, S., Holton, A., Munoz, I., & Damásio, M. (in press). e-Health and Health Literacy: A Research Methodology Review. *Journal of Computer-Mediated Communication*.
- Mackert, M., Love, B., & Whitten, P. (2009). Patient Education on Mobile Devices: An e-Health Intervention for Low Health Literate Audiences. *Journal of Information Science*, 35(1), 82-93. doi: 10.1177/0165551508092258
- Mackert, M., Whitten, P., & Garcia, A. (2008). Evaluating e-Health Interventions Designed for Low Health Literate Audiences. *Journal of Computer-Mediated Communication*, 13(2), 504-515.

- Manning, D. L., & Dickens, C. (2006). Health literacy: more choice, but do cancer patients have the skills to decide? *European Journal of Cancer Care*, 15(5), 448-452.
- Marr, D. (1982). *Vision: A Computational Investigation into the Human Representation and Processing of Visual Information*. New York: W. H. Freeman.
- McDougall, S., de Bruijin, O., & Curry, M. B. (2000). Exploring the Effects of Icon Characteristics on User Performance: The Role of Concreteness, Complexity, and Distinctiveness. *Journal of Experimental Psychology: Applied*, 6(4), 291-306.
- McKay, H. G., King, D., Eakin, E. G., Seeley, J. R., & Glasgow, R. E. (2001). The Diabetes Network Internet-Based Physical Activity Intervention. *Diabetes Care*, 24(8), 1328-1334.
- Meloncon, L., Haynes, E., Varelmann, M., & Groh, L. (2010). Building a playground: General guidelines for creating educational web sites for children. *Technical Communication*, 57(4), 398-415.
- Messaris, P. (1997). *Visual Persuasion: The Role of Images in Advertising*. Thousand Oaks, CA: Sage.
- Morrison, L. G., Yardley, L., Powell, J., & Michie, S. D. (2012). What Design Features are Used in Effective e-Health Interventions? A Review Using Techniques from Critical Interpretive Synthesis. *Telemedicine and e-Health*, 18(2), 137-144.
- Moshagen, M., Muscha, J., & Göritz, A. (2009). A blessing, not a curse: Experimental evidence for beneficial effects of visual aesthetics on performance. *Ergonomics*, 52(10), 1311-1320.
- Moshagen, M., & Thielsch, M. T. (2010). Facets of Visual Aesthetics. *International Journal of Human-Computer Studies*, 68(10), 689-709.
- Nan, X., & Faber, R. J. (2004). Advertising Theory: Reconceptualizing the Building Blocks. *Marketing Theory*, 4, 7-30. doi: 10.1177/1470593104044085
- National Cancer Institute. (2003). Clear & Simple: Developing Effective Print Materials for Low-Literate Readers. Retrieved March 11, 2013, from <http://www.cancer.gov/cancertopics/cancerlibrary/clear-and-simple/AllPages>
- Nielsen-Bohlman, L., Panzer, A., & Kindig, D. (Eds.). (2004). *Health Literacy: A Prescription to End Confusion*. Washington, D.C.: National Academy of Sciences.
- Norman, D. A. (1999). Affordance, Conventions, and Design. *Interactions*, 6(3), 38-42.
- Norman, D. A. (2002). *The Design of Everyday Things*. New York: Basic Books.
- Oulasvirta, A., Karkkainen, L., & Laarni, J. (2005). Expectations and memory in link search. *Computers in Human Behavior*, 21(5), 773-789.
- Palmer, J. W. (2002). Web Site Usability, Design, and Performance Metrics. *Information Systems Research*, 13(2), 151-167.
- Pandir, M., & Knight, J. (2006). Homepage Aesthetics: The Search for Preference Factors and the Challenges of Subjectivity. *Interacting with Computers*, 18(6), 1351-1370.
- Pappachan, P., & Ziefle, M. (2008). Cultural influences on the comprehensibility of icons in mobile-computer interaction. *Behaviour and Information Technology*, 27(4), 331-337.
- Peak, D. A., Prybutok, V. R., Wu, Y., & Xu, C. (2011). Integrating the Visual Design Discipline with Information Systems Research. *Informing Science: the International Journal of Emerging Transdiscipline*, 14, 161-179.
- Pieters, R., Wedel, M., & Batra, R. (2010). The Stopping Power of Advertising: Measures and Effects of Visual Complexity. *Journal of Marketing*, 74(5), 48-60.
- Reeves, B., & Nass, C. (1996). *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places*. Cambridge, UK: Cambridge University Press.
- Robins, D., Holmes, J., & Stansbury, M. (2010). Consumer health information on the Web: The relationship of visual design and perceptions of credibility. *Journal of the American Society for Information Science & Technology*, 61(1), 13-29.
- Rosenholtz, R., Li, Y., & Nakano, L. (2007). Measuring Visual Clutter. *Journal of Vision*, 7(2), 1-22.
- Roth, S. P., Schmutz, P., Pauwels, S. L., Bargas-Avila, J. A., & Opwis, K. (2010). Mental models for web objects: Where do users expect to find the most frequent objects in online shops, news portals, and company web pages? *Interacting with Computers*, 22(2), 140-152.
- Roth, S. P., Tuch, A. N., Mekler, E. D., Bargas-Avila, J. A., & Opwis, K. (2013). Location matters, especially for non-salient features-An eye-tracking study on the effects of web object placement on different types of websites. *International Journal of Human-Computer Studies*, 71(3), 228-235.
- Scott, L. M. (1994). Images in Advertising: The Need for a Theory of Visual Rhetoric. *Journal of Consumer Research*, 21(2), 252-273.
- Seet, B.-C., & Goh, T.-T. (2012). Exploring the affordance and acceptance of an e-reader device as a collaborative learning system. *Electronic Library*, 30(4), 516-542.
- Sillence, E., Briggs, P., Harris, P., & Fishwick, L. (2007a). Health Websites that people can trust - the case of hypertension. *Interacting with Computers*, 19(1), 32-42.
- Sillence, E., Briggs, P., Harris, P., & Fishwick, L. (2007b). How do patients evaluate and make use of online health information? *Social Science & Medicine*, 64, 1853-1862.
- Sonderegger, A., & Sauer, J. (2010). The influence of design aesthetics in usability testing: Effects on user performance and perceived usability. *Applied Ergonomics*, 41(3), 403-410.
- Stanaland, A. J. S., & Tan, J. (2010). The Impact of Surfer/Seeker Mode on the Effectiveness of Website Characteristics. *International Journal of Advertising*, 29(4), 569-595.
- Tait, A. R., Voepel-Lewis, T., Brennan-Martinez, C., McGonegal, M., & Levine, R. (2012). Using Animated Computer-generated Text and Graphics to Depict the Risks and Benefits of Medical Treatment. *American Journal of Medicine*, 125(11), 1103-1110.

- Tessaro, I., Rye, S., Parker, L., Mangone, C., & McCrone, S. (2007). Effectiveness of a Nutrition Intervention with Rural Income Women. *American Journal of Health Behavior*, 31(1), 35-43.
- Thielsch, M. T., Blotenberg, I., & Jaron, R. (2013). User Evaluation of Websites: From First Impression to Recommendation. *Interacting with Computers*.
- Tractinsky, N., Cokhavi, A., Kirschenbaum, M., & Sharfi, T. (2006). Evaluating the Consistency of Immediate Aesthetic Perceptions of Web Pages. *International Journal of Human-Computer Studies*, 64(11), 1071-1083.
- Tractinsky, N., Katz, A. S., & Ikar, D. (2000). What is beautiful is usable. *Interacting with Computers*, 13(2), 127-145.
- Tuch, A. N., Bargas-Avila, J. A., Opwis, K., & Wilhelm, F. H. (2009). Visual complexity of websites: Effects on users' experience, physiology, performance, and memory. *International Journal of Human-Computer Studies*, 67(9), 703-715.
- Tuch, A. N., Presslauer, E. E., Stocklin, M., Opwis, K., & Bargas-Avila, J. A. (2012). The Role of Visual Complexity and Prototypicality Regarding First Impression of Websites: Working Towards Understanding Aesthetic Judgments. *International Journal of Human-Computer Studies*, 70, 794-811.
- van Schaik, P., & Ling, J. (2009). The role of context in perceptions of the aesthetics of web pages over time. *International Journal of Human-Computer Studies*, 67(1), 79-89.
- van Weert, J. C. M., van Noort, G., Bol, N., van Dijk, L., Tates, K., & Jansen, J. (2011). Tailored information for cancer patients on the Internet: Effects of visual cues and language complexity on information recall and satisfaction. *Patient Education and Counseling*, 84(3), 368-378.
- Venkatesh, V., & Bala, H. (2008). Technology Acceptance Model 3 and a Research Agenda on Interventions. *Decision Sciences*, 39(2), 273-315.
- Withagen, R., de Poel, H. J., Araújo, D., & Pepping, G.-J. (2012). Affordances can invite behavior: Reconsidering the relationship between affordances and agency. *New Ideas in Psychology*, 30(2), 250-258.
- Wu, O., Hu, W., & Shi, L. (2013). Measuring the Visual Complexities of Web Pages. *ACM Transactions on the Web*, 7(1), 1:1-1:34.
- Xenakis, I., & Arnello, A. (2013). The relation between interaction aesthetics and affordances. *Design Studies*, 34(1), 57-73.
- Zarcadoolas, C., Pleasant, A., & Greer, D. (2006). *Advancing health literacy: A framework for understanding and action*. San Francisco, CA: Jossey-Bass.

Pharmaceutical Companies are Writing the Script for Health Consumerism

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ABSTRACT

In this rhetorical analysis based on the Foucaultian constructs of power in medicine, specifically the docile body, the medical gaze, and health consumerism, the authors examine ways the pharmaceutical industry used web-based direct-to-consumer advertising, from 2007-2010, to craft interactions between U.S. consumers and physicians in ways that changed the traditional patient-physician relationship in order to drive sales of brand-name therapeutic drugs. We demonstrate how the pharmaceutical industry uses its websites to script power relationships between patients and physicians in order to undermine physician authority and empower patients to become healthcare consumers. We speculate that this shift minimizes or even erases dialogue, diagnosis, and consideration of medical expertise. We suggest that if it is important to uphold values of the modern version of the hippocratic oath, it may be necessary to provide physicians and patients additional parts in the script so that medical decisions are made based on sound science, knowledge, and experience.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

direct-to-consumer advertising; direct-to-physician advertising; patient-physician relationship; healthcare consumer; healthcare consumerism

INTRODUCTION

Given contemporary economics of medicine, we explored decision-making power in the patient-physician relationship as it was shaped by direct-to-consumer (DTC) advertising—technical marketing communications wherein the pharmaceutical industry promotes therapeutic drugs to the public. The purpose of our study was to investigate ways the pharmaceutical industry used web-based DTC advertising to craft interactions between U.S. consumers and physicians in ways that influenced the traditional patient-physician relationship in order to increase sales of brand-name therapeutic drugs. We were particularly interested in the transition to web-based DTC advertising because it leveraged the role of the Internet as situated in participatory culture in dissemination of healthcare information by pharmaceutical companies and it changed the disposition of patients in conversations with physicians. Indeed, it reworked the patient-physician script and transformed patients into empowered healthcare consumers.

To focus on how this change in the patient-physician relationship began to occur, we limited our study to pharmaceutical company advertising from 2007–2010, which coincided with more permissive advertising laws and the ubiquity of the Internet. As explicated, here, web-based DTC advertising may have appeared to empower patients to be active agents in their wellness, but we found that it functions more as a script for what healthcare consumers read, think, and say. Our investigation showed how pharmaceutical companies disrupted the traditional patient-physician relationship to create healthcare consumers that were (a) narrowly informed about a medical condition, (b) minimally informed about particular pharmaceutical therapies, (c) encouraged to visit a physician, (d) active initiators of discussion about a particular condition, and (e) confident guides of conversation specific to the advertised drug therapy. In this multistep process, healthcare consumers were scripted to carefully negotiate power relationships in which they actively pursued particular therapies yet remained subordinate enough so as not to overly threaten physician power, knowledge, or authority.

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Communication Design Quarterly. ACM SIGDOC, New York, USA.
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Through a rhetorical analysis of archival websites for migraine therapeutic drugs, we explored the rapid evolution of the pharmaceutical industry's primary message to U.S. patients. As discussed in detail, the rhetoric of DTC advertising and its affect on the patient-physician relationship were based on an interdependence of the controversial informative versus persuasive nature of the content, rhetorical strategies of the messages themselves, especially how they guide patient-physician interaction, their delivery mode, and consumerism as pushed by the pharmaceutical industry.

This research contributes to the medical rhetoric literature by illuminating the pharmaceutical industry's creation of healthcare consumers and develops previous scholarly research into the rhetorical study of migraines (Segal, 2005; 2010). The conclusion that the pharmaceutical industry functions as a capitalist industry, in the U.S., was precisely the point of concern as capitalist healthcare deviated from mainstream, socialized Western medicine and contradicted industry claims.

HISTORICAL LOOK AT THE IMPACT OF DTC ADVERTISING ON THE PATIENT-PHYSICIAN RELATIONSHIP

Pharmaceutical companies re-wrote the script of the patient-physician relationship in a way that undermined physician authority and empowered patients as consumers of healthcare. This change was part of a trajectory that began with the docile patient body and led to empowered healthcare consumers.

The Docile Patient Body

From the 1800s until the mid 1990s, the traditional patient-physician relationship was an example of extreme inequality of power between two individuals in which the physician had nearly ultimate power over the patient's docile body (Foucault, 1963/1973; 1975/1977, p. 136). In the traditional patient-physician relationship, the patient's body was viewed as the "space filled with the forms of composition of the organs" (Foucault, 1963/1973, p. 191), and it was simply an object to be treated or worked upon. Foucault (1963/1973) described this as the medical gaze, the unique power of physicians to see and diagnose patients as a locus of disease that lacked decision-making authority. The medical gaze was not "the gaze of any observer, but that of a doctor [which was] supported and justified by an institution" (p. 89). In this institutionalization of Western medicine, only the physician could diagnose disease and prescribe therapy.

Auton (2004) presented a model of the relationship between the patient and physician, which spanned through the mid-1990s, in which medical knowledge—specifically information regarding pharmaceutical drug treatment—reinforced the authority of a physician over patients. In the traditional medical context, professionals only provided certain interpretations or opinions, limited information regarding treatment options, and specified a treatment regimen to which they expected patients to adhere (Harrison, Waite, & Hunter, 2006).

The Rise of the Empowered Healthcare Consumer through Web-Based DTC Advertising

As pharmaceutical companies began actively targeting the public through DTC advertising in the late 1990s (Mogull, 2008), the pharmaceutical industry systematically renegotiated and influenced

the patient-physician relationship from a traditional paternalistic relationship between physician and patient to a shared decision or collaborative model between physician and an "empowered" healthcare consumer (Deshpande, Menon, Perri, & Zinkhan, 2004; Kim, 2008; Segal 2005). DTC advertising is argued to educate healthcare consumers, or what they frame as individuals taking personal responsibility for their own medical care, about medical conditions, treatment options, and medical advances, and, argued further, that without DTC advertising, these individuals might not otherwise realize that particular medical conditions existed, were treatable, and, therefore, would not seek treatment (Auton, 2004; Huh, DeLorme, & Reid, 2004; Peyrot, Alperstein, Van Doren, & Poli, 1998). DTC advertising has since shifted attitudes that certain conditions being advertised could be serious and towards medicalization as the primary treatment (Payton & Thoits, 2011).

At the same time that DTC advertising was becoming prominent, the Internet was increasingly becoming a source for online health care information (PEW, 2003; 2005; FDA, 2004). The Internet in its own right had been educating the patient and making them into what some considered to be an agent, and, therefore, it was integral in changing the dynamic of the traditional patient-physician relationship (Kopelson, 2009; Segal, 2011). Medical information on the Internet was provided to the public within the context of developing participatory media, mediated communication spaces where amateurs could write and contribute on the Internet. While discussion boards where people could inquire about medical conditions already existed, LiveJournal, a popular blog site, that gave amateurs authorial power by providing a space for individuals to write and others to read and comment, began in 1999 just after the restrictions on DTC were relaxed. Wikipedia, where "anyone can edit" rather than only experts can edit, began in 2001, and social media sites where everyone had a voice exploded (MySpace in 2003, Facebook in 2004, and YouTube in 2005). The rise of these media correlated with the development of participatory culture, which Jenkins (2006) defines according to five criteria, including low barriers to artistic expression and civic engagement, strong support for sharing one's creations, informal mentorship, belief that their contributions matter even if it doesn't, and connection with others (p. 7). As demonstrated in the analysis in this article, the pharmaceutical companies used participatory culture to get individuals to substitute the pharmaceutical companies patient-physician script for the traditional one. The helped patients overcome barriers to engagement in conversations with their physicians by mentoring them about their conditions and treatments, emphasizing that their relief matters, and then pointing them to treatment provided by the pharmaceutical companies. In sum, pharmaceutical companies provided patients with a false sense of agency and of being fully informed.

Individuals used this sense of participation and agency in part to search for healthcare information. The main type of healthcare information that individuals search for online is for a specific diagnosis or medical condition and treatment (Fox & Fallows, 2003; Fox, 2005). Healthcare consumers seeking information online relied heavily on authoritative sites, many of which were sponsored by the pharmaceutical industry (Powell, Inglis, Ronnie, & Large, 2011). In a sense, the Internet expanded the reach of DTC advertising to a global audience (Liang & Mackey, 2011). These DTC advertising websites are a dominant source of online healthcare information (Liang & Mackey, 2011; Powell, Inglis, Ronnie, & Large, 2011). Although therapeutic drug websites are

the most information-rich genre of DTC advertising, such sites are selectively informative and not comprehensive medical resources (Ahn, Park, and Harley 2014; Liang & Mackey, 2011; Macias and Lewis, 2004). As such, the new empowered healthcare consumer is serving the medical power structure (Kopelson, 2009).

For some, the empowerment messages from the pharmaceutical industry contributed to constructing an active agent involved in one's own healthcare (Harker & Harker, 2007; Krezmien, Wanzer, Servoss, & LaBelle, 2001; Rubin, 2001). Consumer empowerment is centered on knowledge and choice that enables to self determination (Shankar, Cherrier, & Canniford, 2006). Yet, healthcare consumer empowerment was somewhat of a "paradoxical identity" (Stokes, 2008, p. 336) that emphasized narrow treatment option and leads to objectify and commodify individuals.

One major concern about DTC advertising is how it influences the patient-physician relationship. Scholars have argued that DTC advertising threatened physicians' authority over patients and results in a loss of physician control over treatment options (Wilkes, Bell, & Kravitz 2000). The traditional, unidirectional flow of information from physician to patient is, again, proposed to be replaced by a newer model of healthcare consumer empowerment that included bidirectional exchange of information and collaboration between the patient and physician. This model ostensibly recognizes the healthcare consumer's role in the decision-making process for one's own treatment and in drug therapy compliance (Deshpande, Menon, Perri, & Zinkhan, 2004).

Consistent with the literature critical on the informative and persuasive role of DTC advertising, we assert that the power relationship between healthcare consumers and physicians is being manipulated by the pharmaceutical industry and that the dialogue between patient and physician during the medical encounter might, in some cases, be a pharmaceutical industry-guided rhetorical encounter during which both the patient and physician adopt given advertised roles with both individuals carefully monitoring the information they share during the conversation. We see these scripts as an extension of the self-diagnostic quizzes that pharmaceutical companies place online (Emmons, 2010). While this proposed position does not necessarily completely negate the shared decision model presented above, we question the degree of autonomy of both the patient and physician as the pharmaceutical industry is writing the script for both individuals. Throughout this article, this position is further supported by the data analyzed.

Consumerism and Capitalism

Almost 40 years ago, Foucault identified the rise of the pharmaceutical industry as a major source of medical power that would transform health into a consumer object for economic profit of an industry. In a 1976 lecture entitled "The Crisis of Medicine or the Crisis of Antimedicine," Foucault (1976/2004) described what he saw as the contemporary economics of medicine: Whereas medicine was once an instrument used to maintain and reproduce a workforce that was necessary to modern society, it became a set of consumable goods and services, such as pharmaceutical therapies, that could be used to achieve a state of health. To follow Foucault's argument, once people viewed health as achievable via what "can be produced by pharmaceutical laboratories, doctors, etc." to be "consumed by both potential and actual patients" (p. 16), those goods and services could be marketed. Once those goods and services were marketed as a means for promoting health, and, as the prime example, people could visit physicians to receive

prescriptions to purchase them, those goods and services actually "acquired economic and market value" (p. 16) as healthcare. As such, health itself became a "consumer object" (p. 16).

Foucault (1976/2004) explained that in the contemporary economics of medicine, the physician, whom we traditionally associated with medical authority and wealth, actually lost both. In Foucault's words, the physician "represents only a minor proportion of the economic benefits derived from illness and health. Those who make the biggest profits from health are the major pharmaceutical companies" (p. 18). Second, medical professionals were "being turned into almost mechanized intermediaries between the pharmaceutical industry and client demand, that is, into simple distributors of medicine and medication" (Foucault, p. 18). When health became a consumer object, it raised concerns about the driving forces of medical decisions, creating an imperative to ensure that they were directed by the values expressed in the modern version of the hippocratic oath, including science, shared knowledge, benefits to the sick, and "warmth, sympathy, and understanding" that "may outweigh the surgeon's knife or the chemist's drug" (Lasagna, 1964). Concerns were heightened when pharmaceutical companies advertised to physicians and offered them incentives. Under such conditions, physicians were potentially inclined to overprescribe or overlook alternative therapies, even when their decisions were still primarily in the interest of health. Concerns were further heightened when pharmaceutical companies advertised directly to those healthcare consumers who lacked the science, knowledge, and experience to fully consider medical decisions, especially when these patients argued from what they believed was scientifically grounded information but may have been at best persuasive marketing and incomplete information that could have lead to misdiagnosis, overtreatment, or other violations of the hippocratic oath.

ANALYTICAL FRAMEWORK

In this study, we used Foucault's constructs of power in medicine, specifically the docile body, medical gaze, and health consumerism, to analyze effects of the pharmaceutical industry sponsored web-based migraine therapeutic drug DTC advertising on the patient-physician relationship in the time period 2007–2010. This timeframe was purposefully selected for the rise of DTC advertising, the emerging context of an Internet-informed participatory culture, and in relation to DTP advertising. For purposes of this study, we called upon Scott's (2003) notion of rhetoric "as the situated, persuasive use of language" that "assumes that all language use is persuasive" and stems from "both verbal and visual discourse" in "both explicit and implicit arguments" (p. 3).

Generally speaking, rhetorical analysis of online media (Spoel, 2008) was considered similar to that of print media (Guthrie, 1995; Marsh, 2007; Motes, Hilton, & Fielden, 1992; Scott, 2003; Zdenek, 2007) as a method, which included text and visuals, and was applied to artifacts similar to those analyzed in this research. For example, Spoel (2008) employed rhetorical analysis to explore how two Canadian midwifery website reflect and shape the relationships, values, and community of the midwifery profession. Similarly, Zdenek (2007) used rhetorical analysis to critique the persuasive messages conveyed in the visual images of cochlear implant users in printed marketing materials.

After selecting our sites, we called upon knowledge from user attention studies of website and information design to identify the prominent message in migraine therapeutic drug websites. User

attention studies (Spyridakis, 2000; Williams, 2000; Williams, Mulligan, Koprowics, Miller, Reimann, & Da-Shin, 2005) predicted that audiences were initially drawn to a primary message because of design choices and strategies such as color, contrast, size, imagery, and isolation. These design strategies were found to overlap in the middle to upper left region of the therapeutic drug Web pages, which was the region of home pages where the majority of users first directed their attention, as tracked in Cooke's (2008) eye-tracking study. The combination of these strategies was used to identify the primary communicative purpose of the pharmaceutical companies in each website home page analyzed.

Selection of Migraine Web-Based DTC Advertising

For this research, we purposely selected to study web-based DTC related to migraines because, as Segal (2005) explains, they represented a category of medical conditions, including other neurological diseases such as depression (Emmons 2010), which could not be diagnosed through signs—observable, measurable traits or existing biochemical medical tests—but rather needed to be diagnosed through a rhetorically constructed communication between patients' description of symptoms, the connection in the physician's mind to the diagnostic information from medical information resources, personal experience with other patients, and even the belief that migraines exist (or not) as a "real" disease. The patient needed to describe the pain and discomfort associated with the headaches and was dependent on physician evaluation for a diagnosis of migraine: Physicians *had* the unique authority to "diagnose" migraines.

We wanted to examine the potential role of web-based DTC advertising related to migraines in relationship to the patient-

physician relationship given the shift from the traditional patient-physician relationship of patient as docile body and physician as authority to empowered healthcare consumer. Additionally, we wanted to consider the place of the Internet in this the changing nature of the patient-physician relationship. The availability of therapeutic drugs for the treatment of migraines coincided with the rise in DTC advertising and increased use of the Internet in the U.S. (FDA, 2004; USC Annenberg School Center for the Digital Future, 2009) (see Table 1 and Figure 1). Further, the rise of the empowered patient coincided with the rise of participatory culture, and we believed an analysis of web-based DTC for migraines might provide insights into how pharmaceutical companies stage participatory engagement for their own benefit.

Selection of Migraine Therapeutic Drug Websites

We selected our DTC websites using an approach reportedly used by individuals to find information online (Bates, 1989; Bates, 1990; Broom, 2005; Morville, 2005; Pan, Hembrooke, Joachims, Lorigo, Gay, & Granka, 2007; Pirolli & Card, 1999): For our search, we used the general keywords "migraine" and "migraine headaches." We chose Google as the Internet search engine because, at the beginning of this research, Google had the leading market share of online searches in the U.S. (58.4% in December 2007). For comparison purposes, the next closest competitor, Yahoo, had 22.3% of the U.S. search market in December 2007, followed by Windows Live Search with 9.8% (comScore, 2008). We used data from the U.S. search market, rather than global market, because DTC advertising was legal in only two industrialized nations (the U.S. and New Zealand), the U.S. represented the largest therapeutic drug market, with

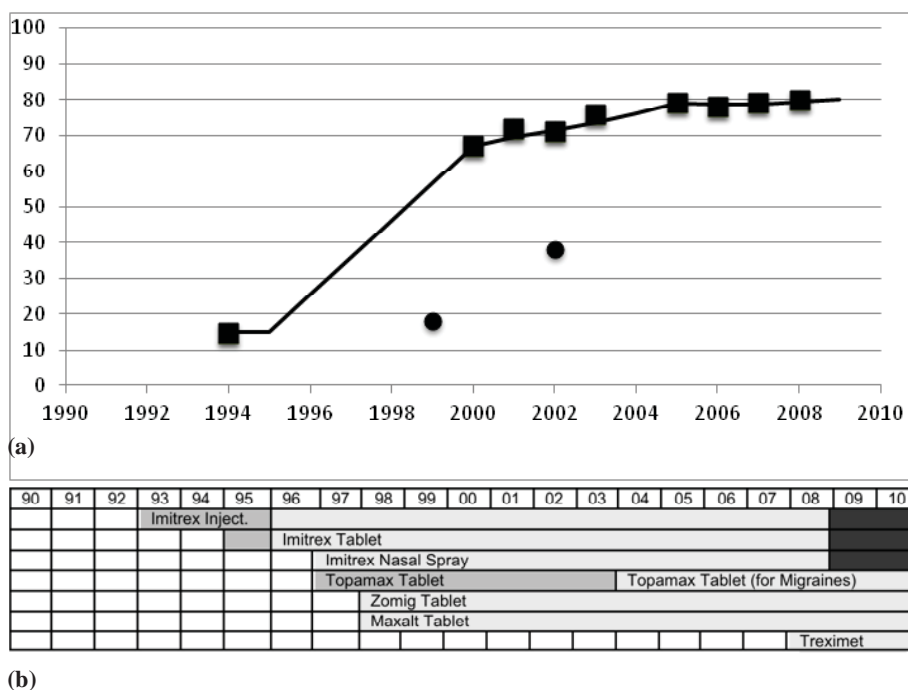


Figure 1. (a) Rise in internet access in the U.S. (squares) and use of internet to find health care information (circles) corresponds with (b) online DTC advertising for migraine therapeutics (in light gray). Migraine therapeutics in medium gray shading were commercially available but not advertised online. Dark gray shading for Imitrex in 2009–2010 shows an internet site that was removed and redirected to the Treximet site.

Table 1. Source of Exposure to DTC Advertising (U.S. Food and Drug Administration. (2004))

Genre	1991	2002	Growth
Television	94%	97%	+3%
Radio	28%	31%	+10%
Magazine	66%	75%	+12%
Newspaper	29%	32%	+9%
Internet	9%	16%	+44%

revenue in the U.S. exceeding 50% of global sales (Auton, 2004), and it was the geographical location for this study.

To select the particular sites to study, we conducted multiple Google searches for “migraine” and “migraine headaches” periodically over 12 months. Although this returned from 300,000 to 3 million results, four migraine therapeutic brands (table 2)—Imitrex (manufactured by GlaxoSmithKline), Maxalt (manufactured by Merck), Topamax (manufactured by Ortho-McNeil Neurologics, Inc.), and Zomig (manufactured by AstraZeneca)—appeared almost exclusively in comparison to any other website in the advertising section of the search results that appear on the top of the page. We added a fifth website, that for Treximet (manufactured by GlaxoSmithKline), during the study because it became available during this investigation and began to be advertised on Google by GlaxoSmithKline in lieu of Imitrex.

There are several reasons we decided to rely on the advertising section of search engine results. Studies report that many search engine users are biased towards these advertising links (Kalyanaraman & Ivory, 2007; Pan, Hembrooke, Joachims, Lorigo, Gay, & Granka, 2007). Furthermore, Google (2007) reported that 99% of their revenue is from this form of advertising, which suggested that a large group of Internet healthcare consumers using Google were likely

to be visiting pharmaceutical-sponsored website. Additionally, we analyzed the top 200 non-advertising Google search results to ensure that a readily available migraine therapeutic drug website were not overlooked. In a search of “migraines,” the vast majority of websites, 58%, were resources for technical information (such as disease symptoms). The next prominent category, 12% of sites, were for treatment (such as the therapeutic drug websites mentioned above, but also included nondrug, alternative therapies), 11% for public awareness organizations and/or websites, followed by 9% from news media, and 7% for book sales. The remaining 3% of sites were a combination of sites containing the keyword, but unrelated to this investigation (such as a YouTube music video that had migraines in the lyrics). Among the treatment results, 12% of the top 100 non-advertising sites, pharmaceutical-sponsored website were the most prominent subgroup. Nearly 42% of the sites offering treatment information were from pharmaceutical companies. The same five pharmaceutical drug website we identified in the selected method were identical to those identified in this comprehensive, non-advertising analysis, thus confirming that the most prominent pharmaceutical drug treatments being advertised on the Internet were identified.

ANALYSIS

Rewriting the Script of Power Using Migraine Therapeutic Drug Websites Circa 2007–2010

The imagery throughout the Maxalt home page (circa 2007–2010) promotes the idea of the empowered healthcare consumer who can gain power over one’s own medical condition by taking personal action (Figure 2). Rather than being a docile body laying down under the physician’s gaze, as would be consistent with the historical doctor-patient relationship, the person in the Maxalt advertisement stands upright on clouds with one arm reaching upwards, touching a yellow circle, possibly the sun or some sort of light (read this way more particularly in Figure 3) and the other holding a briefcase.

Table 2. Migraine Therapeutic Drug Websites Analyzed.

Migraine therapeutic drug	Pharmaceutical manufacturer	URL	Dates available ¹
Imitrex	GlaxoSmithKline	http://www.migrainehelp.com	Dec 1996 to Aug 2008
Maxalt	Merck	http://www.maxalt.com	Dec 1998 to present ²
Topamax	Ortho-McNeil Neurologics	http://www.topamax.com	Nov 1999 to Aug 2004; Dec 2004 ³ to present
Treximet	GlaxoSmithKline	http://www.treximet.com and http://www.migrainehelp.com ⁴	May 2008 to present
Zomig	AstraZeneca	http://www.zomig.com	Dec 1998 to present

¹ Dates available from indexing in the Internet Archive (<http://www.archive.org>). The Internet Archive began collecting Internet data in 1996. Although archive dates are listed in the Internet Archive, several of these entries are incomplete and lack several images, multimedia, and functional database-dependent tools.

² Present refers to websites available online (directly accessed from the URL listed, not the Internet Archive) during January 2011. All website URLs were still active in July 2015 except <http://www.migrainehelp.com>.

³ Topamax was initially marketed to treat epilepsy. Based on archived information from the Internet Archive, Topamax was first marketed for migraine prevention circa December 2004.

⁴ The URL <http://www.migrainehelp.com> was initially the home page for Imitrex. In 2010, this URL automatically forwarded to <http://www.treximet.com>, the home page for Treximet. Both brand-name migraine therapeutic drugs are manufactured and sold by GlaxoSmithKline.

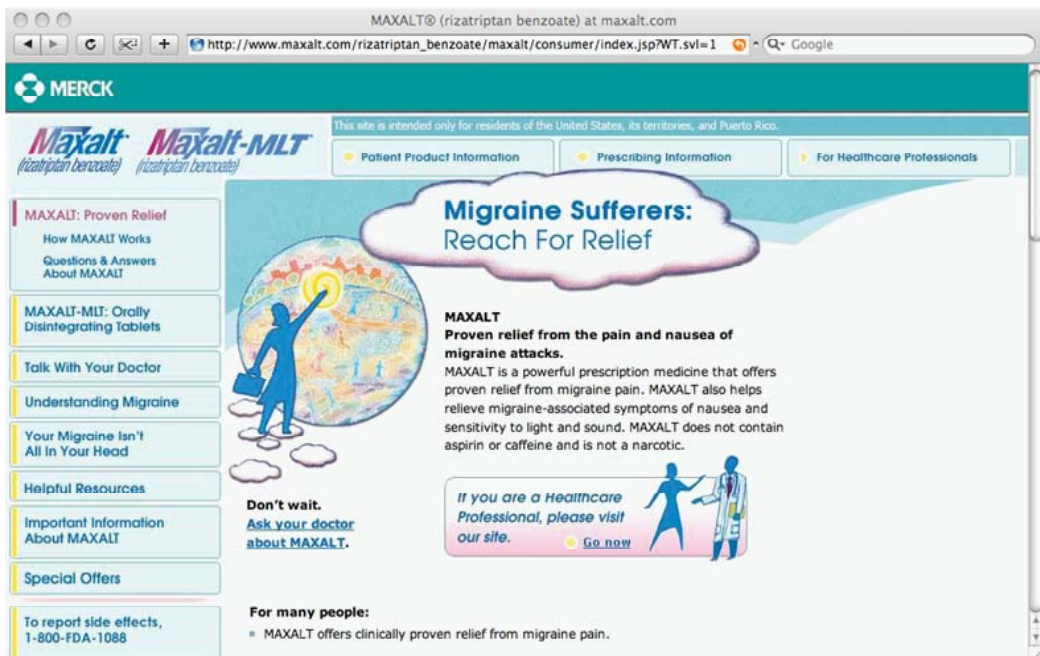


Figure 2. The Maxalt home page (circa 2007–2010) for DTC advertising prominently displayed health care consumer empowerment messages through visuals and text.

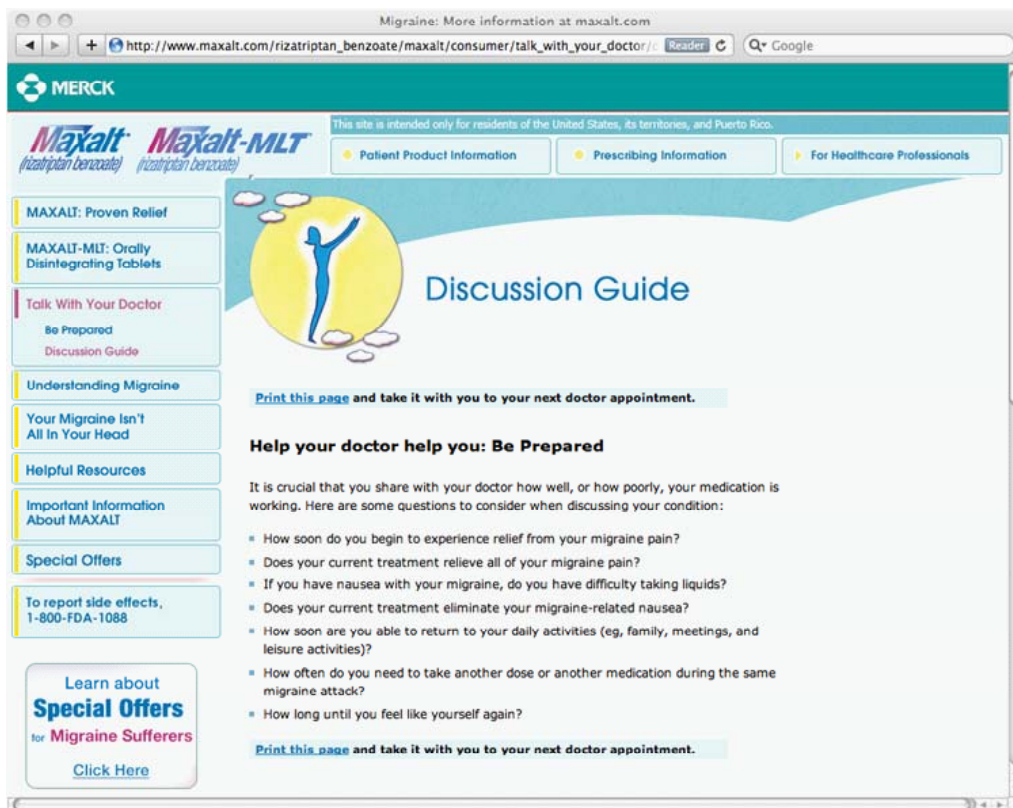


Figure 3. A prominent message is to take action and communicate specific information to a physician for a prescription of Maxalt.

The sun is ultimately a source of energy and power, so the fact that the person in the advertisement touches it indicated that energy and power are within the hand of a healthcare consumer.

This image also indicates that healthcare consumers can feel happy or even elated. Aside from being a source of energy and power, walking on clouds or sun is an idiom meaning that the person feels elated; therefore, the person grasping the power indicates that healthcare consumers can also reach happiness. Given that it is unlikely someone suffering from a migraine would feel happy or elated, a migraine sufferer walking on air implies that the person found relief.

This Maxalt web-based DTC advertisement further used the briefcase to symbolize taking action, doing business, and achieving success. Business people, which is an image representing successful individuals in Western society, are often depicted carrying briefcases. Moreover business people represent power, authority, and action. The briefcase itself is a metaphor for action and within that lies the tools needed to

complete the task. This suggests that healthcare consumers have what they need to take action and complete the task of grasping migraine relief. Aside from the metaphoric connection briefcase has with taking action, it also represents the daily work routine. The person who took action to obtain the Maxalt, holding the source of energy and power, successfully found relief from migraine pain and is grabbing the briefcase to illustrates a return to work and daily routine. In summary, given that the person in the advertisement holds power and action in a briefcase and the sun or other energy source, healthcare consumers get the impression that they can be energetic and happily moving on, too.

The main image on the Maxalt page has an additional visual metaphor to help migraine sufferers believe they are capable of overcoming the symptoms. The individual walking on air, touching the sun or source of energy, and holding a briefcase is also standing in front of the world as if to hold out happiness and energy for others. This message of relief is also portrayed in the text page title: "Migraine Sufferers: Reach for Relief."

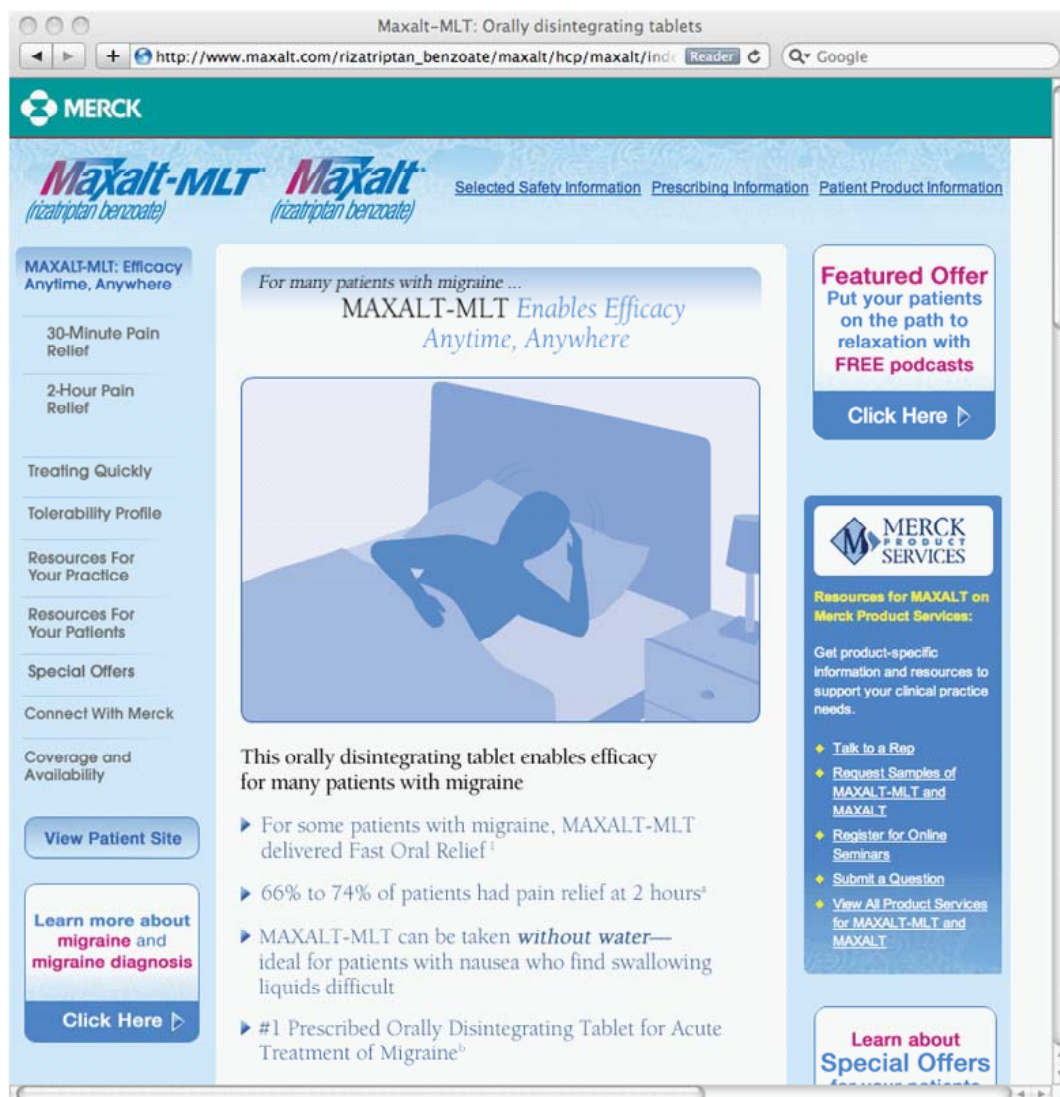


Figure 4. The Maxalt home page for health care professionals (circa 2010), or DTP advertising, illustrated the migraine sufferer as a traditional patient—lying in a bed with hands hovering over the loci of pain.

This web-based DTC advertisement for Maxalt encourages individuals to be agents in their own care, prompting them to become consumers of both the information and the pharmaceutical products being sold. In a visually isolated message and hyperlink, which is a strategy for emphasizing information, the Maxalt home page for healthcare consumers commands, “Don’t wait. Ask your doctor about MAXALT” (Figure 2). On their own, individuals may not have had enough agency to actually visit with a physician. Migraine sufferers may have minimized their symptoms or believed they were stuck suffering, as examples. For sufferers who lack agency for whatever reason, the pharmaceutical company gave it to them in a command to talk to their doctor about the drug. In this sense, the pharmaceutical company begins to become the agent behind the sufferer.

The command the pharmaceutical company gave to migraine sufferers was not talk to your doctor about headaches and receive a proper diagnosis; rather, the command was to talk to the doctor “about Maxalt,” a specific drug for a specific condition. Given that the pharmaceutical company is beginning to stand in for the sufferers own agency, especially by giving sufferers the command to visit the physician, helping them see themselves as successful, and providing a script—“ask about Maxalt,” it is likely that the conversation begins from a particular solution, circumventing the dialogic nature of the diagnostic process which might lead the physician to consideration of other conditions or treatments. In such a scenario, the patient circumvented the diagnostic process at the behest of the pharmaceutical company, perhaps starting with “I’d like to talk about Maxalt.” In this case, if the physician has been reading DTP materials related to Maxalt, the physician might be more easily redirected from the traditional diagnostic process

and, thus, agree to the solution. In this case, it is difficult to say who really holds the most power in the conversation. While each case may be handled differently by the patient or the physician, the pharmaceutical company is clearly a powerful, guiding presence.

The pharmaceutical company creates healthcare consumers out of patients. The person with the migraine is no longer a patient to be diagnosed but a consumer who can purchase their health. Thus, pharmaceutical companies recast patients, who were traditionally powerless in the physician’s office, as “sufferers,” and empower them to take action to find relief. Then the sufferer transforms from a sufferer to a consumer of health in search of the pharmaceutical company’s product. “Healthcare consumers” are made by pharmaceutical companies. The pharmaceutical company substitutes “patient” with the label “migraine sufferers.” By calling people “sufferers” but showing the possibility for relief of symptoms, the pharmaceutical company frames patients as empowered, a positionality that makes them and moves them from being patients of physicians to being healthcare consumers of their products. This positionality further enhances the presence of pharmaceutical companies: Physicians do not cure patients; rather, they dispense a product already made available by the pharmaceutical company. The pharmaceutical company rather than the physician is the authority because it provides the relief. This enhances the power of the pharmaceutical company in subsequent patient-physician interactions, giving them additional power to write future scripts.

Empowered healthcare consumers search for information about their conditions, and the pharmaceutical companies provide just enough information to validate them in their belief that they have

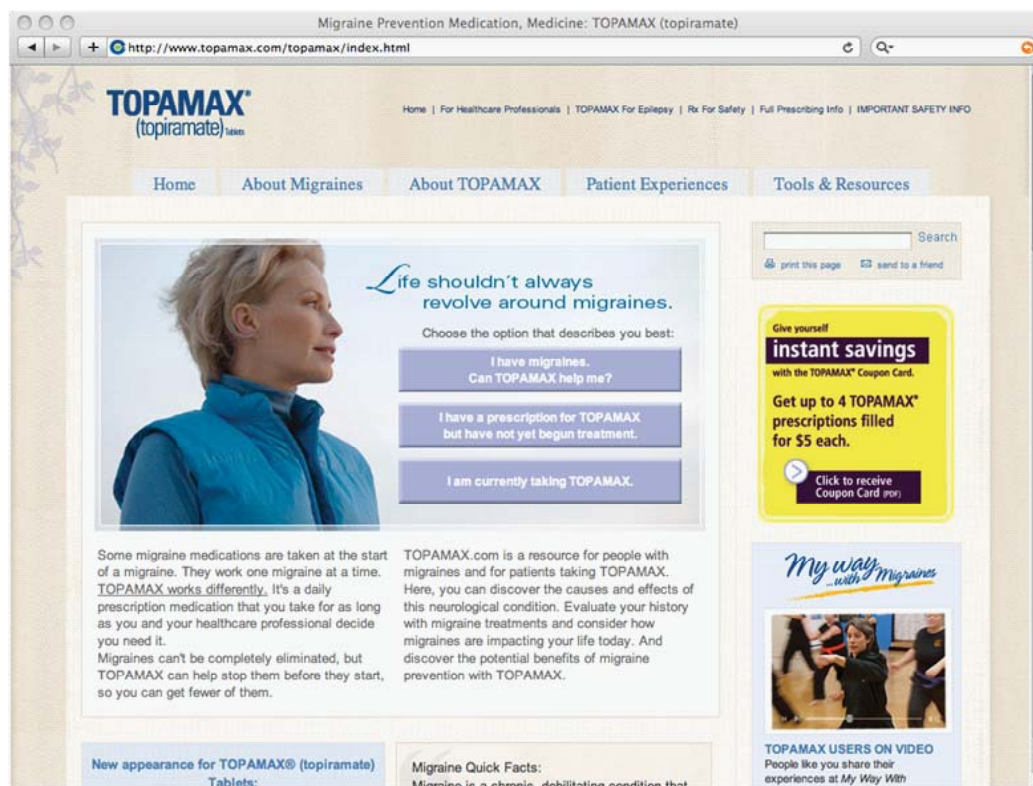


Figure 5. The Topamax home page (circa 2007–2010) prominently displayed health care consumer empowerment messages through visuals and text.

the condition and encourage them to make an appointment with their physician. In the Maxalt DTC advertisement, the “Don’t wait: Ask your doctor about Maxalt” hyperlink takes web readers directly to a page entitled “Discussion Guide” (Figure 3) and subtitled, “Help your doctor help you: Be Prepared.” The pharmaceutical companies are not going to let patients be docile bodies; they are going to create healthcare consumers empowered to lead discussions. The phrasing “help your doctor help you” indicates that the pharmaceutical companies purposefully change the patient-physician relationship. They prepare healthcare consumers to help doctors rather than the other way around. This slight shift begins to erode the physician authority because when physicians are seen as authority figures, they provide rather than receive help. In this sense, pharmaceutical companies have a greater presence in the relationship between healthcare consumer than in the patient-physician relationship.

To illustrate that the pharmaceutical companies have power in the conversation that is traditionally between the patient and the physician, the pharmaceutical companies go beyond commanding patients to go to the doctor but to talk about their product. Pharmaceutical companies instruct migraine sufferers on how to conduct the conversation: “Print this page and take it with you to your next doctor appointment.” The document offers questions “to consider when discussing your condition.” Five questions, meant to guide the physician’s thinking about the treatment, ask about the degree of the healthcare consumer’s symptoms: “How soon do you begin to experience relief from your migraine pain?” “Does your current treatment relieve all of your migraine pain?” “How often do you need to take another dose or another medication

during the same migraine attack?” “How long until you feel like yourself again?” “How soon are you able to return to your daily activities (eg, family, meetings, and leisure activities)?” Healthcare consumers who believe they have the ailment and are in need of the particular pharmaceutical treatment are to use these guides in the conversation with a physician otherwise, they would probably not bother to read or print the materials and bring them in for discussion. In the conversation with a physician, which is scripted by the pharmaceutical company rather than arising from the physician’s medical gaze or patient’s own thoughts, or, more usefully, from a dialogue between these, healthcare consumers are likely going to follow the scripted prompts that ultimately leads to the specific pharmaceutical company’s product in lieu of other treatments. Yet devoid of this process is comprehensive medical education or experience to reasonably evaluate the appropriateness of the treatment for the symptoms without completely deconstructing the healthcare consumer’s vision of how the relationship will unfold.

Although the conversation is between healthcare consumer and physician, the pharmaceutical company is actually the largest presence in the room. The pharmaceutical company has commanded the patient into the healthcare consumer role, shaped the healthcare consumer’s communication, and also provided corresponding direct-to-physician (DTP) advertising materials to establish the physician’s role. Even if the physician wants to redirect the conversation, that can only be done by rejecting the script and the seemingly objective but actually persuasive materials provided by the patient via the pharmaceutical company. Those materials direct the scripted interaction to an obvious conclusion. Not only is going off script uncomfortable, countering what has become the patient’s



Figure 6. The Topamax Web page encouraging conversation between health care consumers and doctors by illustrates the relationship as two individuals at eye-level.

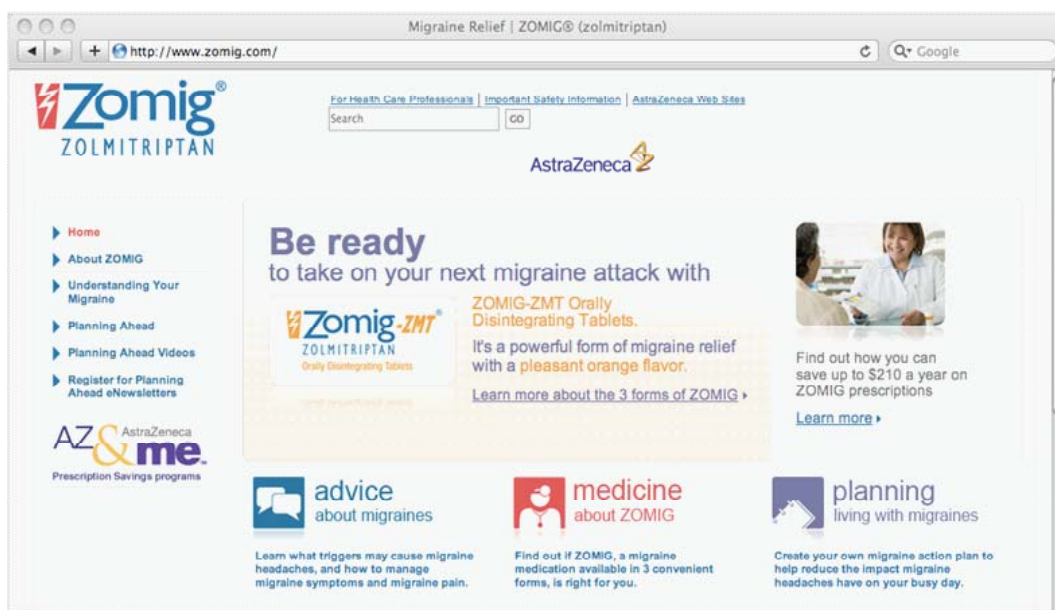


Figure 7. The Zomig home page (circa 2010) communicates with health care consumers to “be ready,” or take an active role against migraines.

script, it puts the physician at risk for offending, frustrating, or even losing that patient to another physician. Physicians are, thus, incentivized to stay on script, and, unless the diagnosis is incorrect, a potentially serious risk without the traditional patient-physician dialogue, and unless there are particular dangers of this medication for this patient, the physician is likely to dispense the Maxalt. Because the pharmaceutical company’s script seems to be an objective truth for the patient and it directs the conversation, the physician’s authority is undermined more than when pharmaceutical companies had physicians as their primary target of advertising. Given the dual efforts of advertising—DTP and DTC—Foucault’s observation of the physician as “mere pharmaceutical dispensary” seems even more entrenched.

In contrast to the web-based DTC advertising, the DTP Maxalt home page (circa 2010), illustrated the migraine sufferer as a traditional patient lying in a bed with hands pressing the loci of pain (Figure 4). Portraying the patient-physician relationship in two different ways indicates the pharmaceutical company’s skill at shaping their target audiences into actors in their own script. The DTC materials are designed to empower patients who lead conversations with physicians; whereas, DTP materials uphold power for physicians who, according to the visuals in the advertisements, look down over patients in a bed to assess, diagnose, and treat a docile body. The language on the DTC and DTP sites differ, too. The text on the DTP page uses “patients” exclusively, which is associated with the physician’s traditional power in the patient-physician relationship.

These tensions between health care consumer and patient images are an important finding of this study as the power between patient and physician is being reframed by the pharmaceutical industry. The prominent message of healthcare consumer empowerment in web-based DTC advertising is in conflict with the traditional patient image communicated in DTP advertising.

It is important to note that healthcare consumer messages extend throughout DTC advertising by multiple pharmaceutical companies. For example, the Topamax DTC home page (circa

2007–2010) (Figure 5) is similar to the Maxalt DTC home page for healthcare consumers in that it also prominently displays and creates empowered healthcare consumers. In the Topamax example, the primary, attention-grabbing image is located in the upper-left region of the content section, which is where eye-tracking studies indicate users scan first when visiting home pages (Cooke, 2008). This image illustrates an empowered healthcare consumer who is poised, standing upright with head up and eyes looking out into the headline message, “Life shouldn’t always revolve around migraines.” To emphasize that life can be about something other than migraines, the person stands against the sky wearing light outerwear as if to suggest the person is living life, perhaps by hiking or visiting a cabin. To further emphasize the individual as empowered, the camera angle is such that readers look up at the person in the advertisement, thus elevating the person’s power. Traditional patients who are debilitated from migraines would look up to this person and want to also live life. The script is that individuals have power over their disease and are in charge of their lives.

Like the Maxalt DTC site, The Topamax DTC site contains a photograph on the “Talking to my doctor” page (Figure 6) that also reinforces messages that people are in partnership with physicians. The message of this image is conveyed by showing the healthcare consumer fully dressed (i.e., not in a patient medical gown or undressed and placed on an examining table), looking eye-to-eye across a table with the physician, whom is identifiable by the white coat and a few pens in the pocket (Figure 6). This image promotes a modern image of a healthcare consumer at a relatively equal power relationship with a physician rather than a conventional image of a patient subjugated to the observation of physician, as Foucault (1963/1973, 1971/1972) described who examines patients as docile bodies, or as objects, in need of repair.

Another message of the Topomax DTC advertisement is not only to empower patients but to move them from “empowerment” to having “power over” symptoms and living life. In the lower, right-

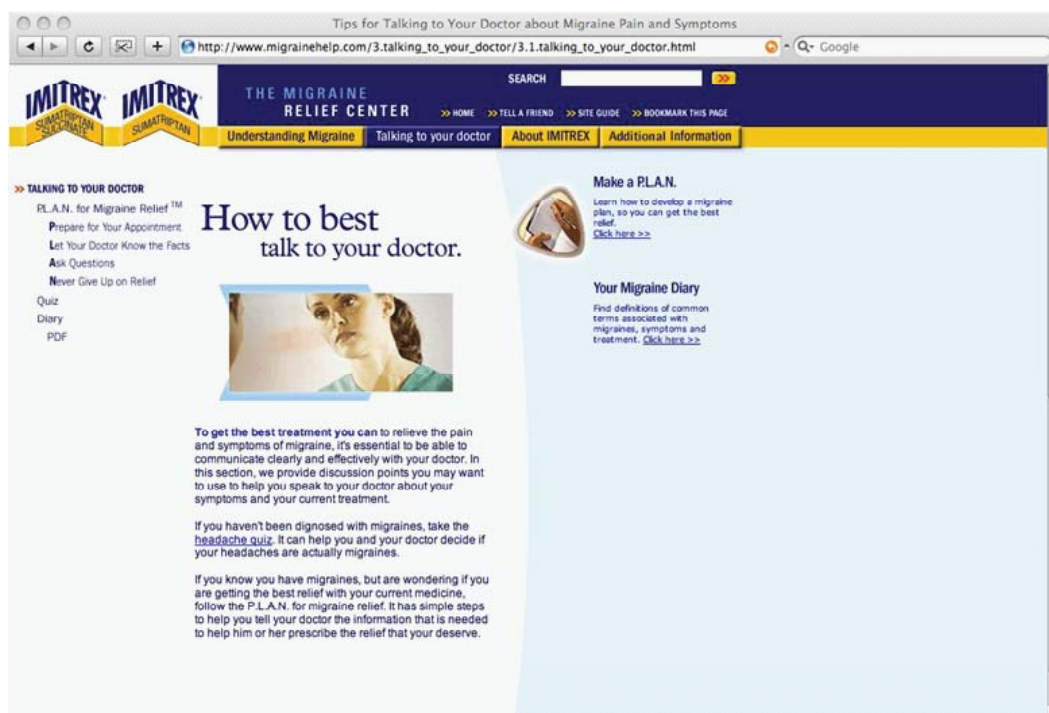


Figure 8. The Imitrex Web site page (circa 2008) instructing health care consumers to talk to their doctor shows a physician looking at eye level with another individual, which based on the audience of and use of second-person voice on the Web site (i.e., “How to best talk to your doctor”) is assumed to be a health care consumer.

hand corner the statement “My way...with Migraines” (Figure 5) is paired with an image of a person doing martial arts whose arm is forward and punching. This image is captioned “Topamax users on video,” and the video provides testimony of patients able to defeat migraines. In this case, the pharmaceutical company wants people to be clear that health is in their control and they can knock out symptoms.

The Topamax DTC web page entitled “Talking to my doctor” (circa 2007–2010) is another demonstration of pharmaceutical companies becoming part of the patient-physician relationship by scripting the patient’s situation: Talk to your doctor and partner with your doctor. The page begins, “Nobody knows your migraines like you do, so it’s only right that you be a full partner in how they’re managed.” The pharmaceutical company writes the script instructing patients on how to transpose authority in the patient-physician relationship. While the physician may be an expert in medicine, the patients are the only ones who know their migraines. The sufferer is more expert than the physician, and, therefore, should not listen to a doctor who is not taking direction about the sufferer’s symptoms and how well they are managed.

The pharmaceutical company really directs people to manage not just the migraine but also the patient-physician relationship, thus turning patients into empowered sufferers who can overcome by consuming—purchasing and ingesting—the selected drug therapy, at which point they have become healthcare consumers. Like the Maxalt DTC website, the Topamax DTC website does this, in part, by telling patients how to talk about the migraine with physicians. Unlike the Maxalt DTC website, the Topamax DTC website directs them to use the appropriate pathos that will move the will of the physician to prescribe this medication: “When you visit your doctor, make sure you communicate the whole story—not just the symptoms,

but also the impact of migraines on your life.” The pharmaceutical company wants the healthcare consumer to create an urgency and seriousness about the migraine. To do so, it makes sure the patient can use the language the physician-becoming-drug-dispenser needs to hear in order to provide the medication: “A migraine’s symptoms are the specific physical effects that you experience. For example, pain, aura, sensitivity to light are common migraine symptoms.” In case the patient didn’t have the appropriate story to move the will of the physician, the pharmaceutical company guides them to one: “missing important events or constantly thinking about your next migraine.” In this example, even more than the Maxalt case, the pharmaceutical company wields the decision-making power because it tells the healthcare consumer how to make it go “my way.”

Even when a web-based DTC home page site lacks a large, primary graphic to draw attention and deliver a message, as with the Zomig site (circa 2010), they still delivered a healthcare consumer empowerment message (Figure 7). For example, text on the Zomig page emphasizes, through increased font size and use of bold text, “Be ready” and, then, in normal text, “to take on your next migraine.” As with the Maxalt and Topamax sites, the pharmaceutical company create healthcare consumers that engage in their healthcare and actively overcoming migraines. Also like the other sites, text in the Zomig explicitly encouraged healthcare consumers to take an equal role in diagnosis and care: “Partner with your doctor for diagnosis and treatment.” The text continues by explaining to healthcare consumers why they should partner with doctors: “because there is no specific test for diagnosing migraines,” it says in a way to take away physician’s authority, “it’s important to work with your doctor to determine, as best as possible, whether or not your headaches are migraines.” The Zomig message seems

D) OTHER SYMPTOMS EXPERIENCED (Check those that apply for each headache)					
Nausea					
Sensitivity					
Vomiting					
Sensitivity to light and sound					
Other (specify)					
E) DURATION OF HEADACHE (Check the appropriate box for each headache)					
2 - 4 hours					
4 - 8 hours					
8 - 24 hours					
More than 24 hours					

Figure 9. The Imitrex “Headache Diary” provides key medical terms associated with migraines rather than providing a neutral (or unbiased) list of headache symptoms. As emphasized in this excerpt illustrating migraine-specific symptoms and durations, this diary excludes characteristic headache durations that would lead to alternative diagnosis, such as 30 to 90 minutes as often associated with cluster headaches.

to be the most ethical of the three sites in that the first goal is to get a proper diagnosis. Then, the pharmaceutical company says, “partner closely with your doctor to determine the most effective treatment plan.” Analysis of these textual messages conveys the same message to the audience as found on the other websites—in particular, that migraine sufferers can—even should—take an active role in the diagnosis and treatment of their medical ailment because physicians do not have much authority as may have been originally believed.

Like the others, the Imitrex DTC site empowers patients, telling them in bold letters that “The key to successful migraine treatment is you!” The site continues, “The more involved you become in your treatment, the more likely you are to get relief from your pain.” The point is that leaving it up to the physician is not enough. To really get relief, patients need to be highly involved. To empower patients to change the patient-physician relationship by taking more of a leadership role, the Imitrex DTC site guides patients through the process, and, as such, the pharmaceutical company is present in the patient-physician relationship. The Imitrex page entitled, “How to best talk to your doctor” (circa 2008), demonstrates how the pharmaceutical industry creates empowered healthcare consumers (Figure 8). This particular site provides a “P.L.A.N.,” which is an acronym listing specific actions for healthcare consumers take in order to “get the best treatment you can” (Figure 9). Of particular importance, the “facts” or information that healthcare consumers should communicate to physicians is scripted by the pharmaceutical company on the top right-hand column of the Imitrex website: “Make a P.L.A.N. Learn how to develop a migraine plan, so you can get the best relief.” The P.L.A.N. consists of “Prepare for Your Appointment, Let Your Doctor Know the Facts, Ask Questions, [and] Never Give Up on Relief.” As with the Topamax site, this plan transposes authority from physician to patient: Patients tell doctors facts, which switches the burden of expertise—knowledge, experience, science—from the physician to the patient, at least as is represented in the patient-physician conversation. The physician isn’t examining the situation through expertise; rather, the physician is reacting to the patient who is reading the pharmaceutical company’s script. So, while conversational authority has been shifted, the expertise has not, but because the script leads the

discussion, the medical expertise is erased from the script. The step in the P.L.A.N., “never give up on relief,” translates to don’t take no for an answer from your physician, further undermining the physician’s authority. If healthcare consumers don’t hear what they want to hear, they should ask more questions or provide more facts. If this physician doesn’t follow, perhaps another will. The point is to keep going until reaching the desired as guided by this DTC script, is the specific treatment from this pharmaceutical company.

The P.L.A.N. is followed by “Your Migraine Diary,” in which healthcare consumers “Find definitions of common terms associated with migraines, symptoms and treatment,” further empowering sufferers in their ability to talk with physicians and scripting the language of sufferers to create consumers. Of particular interest, the therapeutic drug web-based DTC sites introduce healthcare consumers to key terms for migraine diagnosis, if they are intent on receiving a prescription for a migraine therapeutic drug (Figure 9). In general, these therapeutic drug websites provide discussion guides in an easy-to-print format to take to a medical appointment. The information contained guides healthcare consumers to provide specific information during medical exams (such as visual symptoms and nausea), thus leading to a migraine diagnosis.

The page to the migraine diary, entitled “Tracking Your Progress,” reinforces the personal responsibility of the healthcare consumer, empowering them to be persistent, even insatiable, until they obtain sufficient pain relief, i.e., obtaining a therapeutic drug. The site explains that the migraine calendar “will help you and your doctor track your migraines.” The pharmaceutical company gives particular tasks to the healthcare consumer, which goes beyond just scripting dialogue into scripting behavior: “record information for each attack as accurately as you can,” help “identify triggers that may be contributing to your headaches,” and “discuss your findings with your doctor.” The site also explains that the migraine diary helps track “how well IMITREX is working.” In other words, the migraine calendar is not just for diagnosis but also part of the treatment plan, and using the diary for diagnosis helps make it easier to choose this therapeutic plan that includes this particular drug. After all, healthcare consumers have already started this treatment by using this diary. While sufferers do take an active role, that role is scripted by the pharmaceutical company.

Curiously, what may be interpreted as a deliberate attempt to promote migraine-specific drug therapy, the headache diary on the Imitrex site (and present on the Treximet site circa 2010) lacks equal representation of headache symptoms to diagnose any alternative type of headache, such as tension, cluster, or sinus headaches. For example, the Imitrex “Headache Diary” lacks a place for appropriate entry of a duration typically associated with cluster headaches, which generally last from 30 to 90 minutes (WebMD, 2007). While these materials seem objective and informative, they do not provide a large enough picture to promote informed decision-making, raising concern about the degree to which such materials are fully ethical yielding good medical decisions. These materials already seem questionable because while they empower patients to feel as though they are participating, that participation is scripted by an entity with the ulterior motive of making money rather than looking out for the patient. So, while the conversation is participatory for the healthcare consumer in that it meets the criteria of giving a sense of being able to participate, that participation is not completely what it seems.

As has been demonstrated, the language of these DTC advertisements establish a script in which the pharmaceutical companies speak to healthcare consumers as if they have a migraine diagnosis even when providing resources to take to physicians for the migraine diagnosis. In the Imitrex (and Treximet circa 2010) headache discussion guide, as well as resources provided on the other sites, the focus on symptoms and descriptive terms (including key terms) associated with migraines facilitate a biased and self-fulfilling personal diagnosis by healthcare consumers prior to a visit with a physician. By scripting the physician visit around terms associated with migraines, these discussion guides lead towards a migraine diagnosis. Additionally, pharmaceutical companies predispose the discussion questions towards prescription of a specific pharmaceutical drug by emphasizing the distinguishing features of their drug. For example, the third question on the Maxalt discussion guide encourages prescription of an oral tablet format, a feature prominently promoted on the Maxalt website, by asking online healthcare consumers, “If you have nausea with your migraine, do you have difficulty taking liquids?” (Figure 3). Similarly, the Topamax “Migraine Symptom Quiz” instructs healthcare consumers to, “Be sure to take your responses with you to your next appointment—your answers will help your healthcare professional decide which treatment is right for you.” Two questions, unique to the Topamax quiz: “In between migraine attacks, do you think about when the next one might strike and what the impact will be?” and “Do you make contingency plans or take other actions in anticipation of a possible migraine attack?” orchestrate a discussion with physicians that lend a discussion towards a daily, preventative therapy—a feature that distinguishes Topamax from other migraines therapeutics.

Other website design moves make it explicitly clear that the reader’s role in finding relief is as a consumer. This concept is reinforced on the Zomig DTC site with the photograph of a medical professional, in this case a pharmacist, enthusiastically handing, or serving, a package to the healthcare consumer. While this message seemingly prompts follow through by demonstrating what to do next, it also makes it clear that this whole script and patient-physician transaction is about consuming, although the actual sales part is displaced from the physician onto the pharmacist. To encourage readers to succeed in their healthcare consumer roles as scripted, the text below the image encourages, “Find out how you can save up to \$210 a year on

ZOMIG prescriptions.” This direct appeal to consumerism based on cost incentives rather than medical treatment was also seen on the Maxalt (Figure 2, 3, and 4) and Topamax pages (Figure 5 and 6) and some screen images of the Imitrex sites. This explicit emphasis on consumerism brings attention to the ultimate goal of creating consumers. This analysis identifies the term “healthcare consumer” as integral to disrupting the patient-physician relationship and to minimizing if not erasing medical expertise and ethics from the script.

FOR CONSIDERATION

Pharmaceutical company scripts in both web-based DTC and DTP advertising impose new roles on patients and physicians in U.S. society. The analysis conducted, here, demonstrates the pharmaceutical industry as a primary source of power in medicine—directing both healthcare consumers and physicians into specific roles during medical encounters. These new roles prescribed by the pharmaceutical companies demonstrate that these companies are primarily concerned with leveraging the healthcare consumer empowerment model as a method to encourage the public to request therapeutic drug treatments. The existing models of shared or collaborative communication between patient and physician in the patient-physician relationship may be ideal, but it does not account for pharmaceutical companies writing the script that erases dialogue and medical decision-making from the conversation. Moreover, use of the current language that refers to patients as empowered healthcare consumers reinforces the idea that the patient-physician transaction is an act of consumerism rather than medical care. If, indeed, it is important to uphold values of the modern version of the hippocratic oath, it may be necessary to provide physicians and patients additional parts in the script so that medical decisions are made based on sound science, knowledge, and experience.

ACKNOWLEDGEMENTS

We would like to acknowledge Amy Koerber for comprehensive feedback on previous versions of this research. Additionally we extend our sincere gratitude to Lisa Meloncon, guest editor of the special issue on health and medical discourses, and the peer reviewers of this article for thoughtful advice to further develop this work.

REFERENCES

- Ahn, H. Y. A., Park, J. S., & Haley, E. (2014). Consumers’ Optimism Bias and Responses to Risk Disclosures in Direct-to-Consumer (DTC) Prescription Drug Advertising: The Moderating Role of Subjective Health Literacy. *Journal of Consumer Affairs*, 48(1), 175-194.
- Angell, M. (2005). *The truth about the drug companies: How they deceive us and what to do about it*. New York: Random House.
- Auton, F. (2004). The advertising of pharmaceuticals direct to consumers: A critical review of the literature and debate. *International Journal of Advertising*, 23, 5-52.
- Bates, M. J. (1989). The design of browsing and berrypicking techniques for the online search interface. *On-Line Review*, 13, 407-424.
- Bates, M. J. (1990). Where should the person stop and the information search interface start? *Information Processing and Management*, 26, 575-591.

- Broom, A. (2005). Virtually he@lthy: The impact of Internet use on disease experience and the doctor-patient relationship. *Qualitative Health Research*, 15, 325-345.
- Chandra, A., & Miller, M. (2005). A closer look at the concept, historical overview, and value of direct-to-consumer advertising of prescription drugs. *Hospitality Topics*, 83(4), 32-36.
- Cooke, L. (2008). How do users search Web home pages? An eye-tracking study of multiple navigation menus. *Technical Communication*, 55, 176-194.
- Conrad, P., & Leiter, V. (2008). From Lydia Pinkham to Queen Levitra: direct-to-consumer advertising and medicalisation. *Society of Health and Illness*, 30, 825-838.
- comScore. (2008, January 23). comScore Releases December U.S. Search Engine Rankings. Retrieved January 30, 2008, from <http://www.comscore.com/press/release.asp?press=2016>
- Deshpande, A., Menon, A., Perri, M. III, & Zinkhan, G. (2004). Direct-to-consumer advertising and its utility in health care decision making: A consumer perspective. *Journal of Health Communication*, 9, 499-513.
- Donohue, J. M. (2006). A history of drug advertising: The evolving roles of consumers and consumer protection. *Milbank Quarterly*, 84, 659-699.
- Eagle, L., & Chamberlain, K. (2004). Prescription medication advertising: Professional discomfort and potential patient benefits—can the two be balanced? *International Journal of Advertising*, 23, 60-90.
- Emmons, K. K. (2010.) *Black Dogs and Blue Words: Depression and Gender in the Age of Self-Care*. New Brunswick, NJ: Rutgers University Press.
- Foucault, M. (1972). *The archaeology of knowledge and the discourse on language*. (A. M. Sheridan Smith, Trans.). New York: Random House. (Original work published 1971)
- Foucault, M. (1973). *The birth of the clinic: An archaeology of medical perception*. (A. M. Sheridan Smith, Trans.). New York: Random House. (Original work published 1963)
- Foucault, M. (2004). The crisis of medicine or the crisis of antimedicine? *Foucault Studies*, 1, 5-19. (Original work published 1976)
- Gellad, Z. F., & Lyles, K. W. (2007). Direct-to-consumer advertising of pharmaceuticals. *The American Journal of Medicine*, 120, 475-480.
- Gilbody, S., Wilson, P., & Watt, I. (2005). Benefits and harms of direct to consumer advertising: A systematic review. *Quality and Safety in Health Care*, 14, 246-250.
- Google (2007). *Google Annual Report, 2007*. Retrieved January 30, 2008, from <http://www.sec.gov/Archives/edgar/data/1288776/000119312508032690/d10k.htm>
- Guthrie, J. R. (1995). Selling technology in technical advertisements: A case study. *Technical Communication*, 42, 226-230.
- Hallahan, K. (2008). Need for cognition as motivation to process publicity and advertising. *Journal of Promotion Management*, 14, 169-194.
- Harker, M., & Harker, D. (2007). Direct-to-consumer-advertising of prescription medicines: A theoretical approach to understanding. *Leadership in Health Services*, 20, 76-81.
- Harrison, T., Waite, K., & Hunter, G. L. (2006). The Internet, information and empowerment. *European Journal of Marketing*, 40, 972-993.
- Huh, J., DeLorme, D. E., & Reid, L. N. (2004). The information utility of DTC prescription drug advertising. *Journalism and Mass Communication Quarterly*, 81, 788-806.
- Jagsi, R. (2007). Conflict of interest and the physician-patient relationship in the era of direct-to-patient advertising. *Journal of Clinical Oncology*, 25, 902-905.
- Jenkins, H., Clinton, K., Purushotma, R., Robison, A. J., & Weigel, M. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. MacArthur Foundation. Retrieved July 5, 2015 from <http://www.macfound.org/press/publications/white-paper-confronting-the-challenges-of-participatory-culture-media-education-for-the-21st-century-by-henry-jenkins/>
- Kalyanaraman, S., & Ivory, J. (2007). *Enhanced scent or selective discounting: Informative versus persuasive information in search engines*. International Communication Association. Retrieved April 22, 2008 from http://www.allacademic.com/meta/p173824_index.html
- Krezmien, E., Wanzer, M. B., Servoss, T., & LaBelle, S. (2011). The role of direct-to-consumer pharmaceutical advertisements and individual differences in getting people to talk to physicians. *Journal of Health Communication*, 16(8), 831-848.
- Lasagna, L. C. (1964). Hippocratic oath, modern version. Retrieved July 5, 2015 from <http://guides.library.jhu.edu/c.php?g=202502&p=1335759>
- Lee, B., Salmon, C. T., & Paek, H. J. (2007). The effects of information sources on consumer reactions to direct-to-consumer (DTC) prescription drug advertising. *Journal of Advertising*, 36, 107-119.
- Lexchin, J., Bero, L. A., Djulbegovic, B., & Clark, O. (2003). Pharmaceutical industry sponsorship and research outcome and quality: Systematic review. *BMJ*, 326, 1167-1178.
- Liang, B. A., & Mackey, T. (2011). Direct-to-consumer advertising with interactive Internet media: global regulation and public health issues. *JAMA*, 305(8), 824-825.
- Longwell, L. (2007). IMS Health predicts 5 to 6 percent growth for global pharmaceutical market in 2008, according to annual forecast. IMS Health. Retrieved November 30, 2007, from http://imshealth.com/ims/portal/front/articleC/0,2777,6599_3665_82713022,00.html
- Marsh, C. (2007). Aristotelian causal analysis and creativity in copywriting: Toward a rapprochement between rhetoric and advertising. *Written Communication*, 24, 168-187.
- Mogull, S. A. (2008). Chronology of direct-to-consumer (DTC) advertising regulation in the United States. *American Medical Writing Association Journal*, 23, 106-109.
- Morville, P. (2005). *Ambient Findability*. Sebastopol, CA: O'Reilly Media, Inc.

- Motes, W. H., Hilton, C. B., & Fielden, J. S. (1992). Reaction to lexical, syntactical, and text layout variations of a print advertisement. *Journal of Business and Technical Communication*, 6, 200-223.
- Palumbo, F. B., & Mullins, C.D. (2002). The development of direct-to-consumer prescription drug advertising regulation. *Food and Drug Law Journal*, 57, 423-443.
- Pan, B., Hembrooke, H., Joachims, T., Lorigo, L., Gay, G., & Granka, L. (2007). In Google we trust: Users' decisions on rank, position, and relevance. *Journal of Computer-Mediated Communication*, 12, 801-823.
- Payton, A. R., & Thoits, P. A. (2011). Medicalization, direct-to-consumer advertising, and mental illness stigma. *Society and Mental Health*, 1(1), 55-70.
- Peyrot, M., Alperstein, N. M., Van Doren, D., & Poli, L. G. (1998). Direct-to-consumer ads can influence behavior. *Marketing Health Services*, 18, 26-32.
- Pirolli, P., & Card, S. (1999). Information foraging. *Psychological Review*, 106, 643-675.
- Powell, J., Inglis, N., Ronnie, J., & Large, S. (2011). The characteristics and motivations of online health information seekers: Cross-sectional survey and qualitative interview study. *Journal of Medical Internet Research*, 13(1), e20.
- Rosenthal, M. B., Berndt, E. R., Donohue, J. M., Frank, R. G., & Epstein, A. M. (2002). Promotion of prescription drugs to consumers. *The New England Journal of Medicine*, 346, 498-505.
- Rubin, P. H. (2001). Pharmaceutical advertising as a consumer empowerment device. *Journal of BioLaw and Business*, 4, 59-65.
- Scott, J. B. (2003). *Risky rhetoric: AIDS and the cultural practices of HIV testing*. Carbondale: Southern Illinois University Press.
- Segal, J. Z. (2005). *Health and the rhetoric of medicine*. Carbondale: Southern Illinois University Press.
- Segal, J. Z. (2011). What in addition to drugs, do pharmaceutical ads sell? The rhetoric of pleasure in direct-to-consumer advertising for prescription pharmaceuticals. In J. Leach & D. Dysart-Gale (Eds.), *Rhetorical questions of health and medicine* (pp. 9-32). Lanham, MD: Lexington.
- Smith, R. (2005). Medical journals are an extension of the marketing arm of pharmaceutical companies. *PLoS Medicine*, 2, 364-366.
- Spoel, P. (2008). Communicating values, valuing community through healthcare websites: Midwifery's online ethos and public communication in Ontario. *Technical Communication Quarterly*, 17, 264-288.
- Spyridakis, J. H. (2000). Guidelines for authoring comprehensible Web pages and evaluating their success. *Technical Communication*, 47, 359-382.
- Steinman, M. A., Bero, L. A., Chren, M., & Landefeld, C. S. (2006). The promotion of Gabapentin: An analysis of internal industry documents. *Annals of Internal Medicine*, 14, 284-293.
- Stokes, A. Q. (2008). The paradox of pharmaceutical empowerment. In H. Zoller & M. J. Dutta (Eds.), *Emerging Perspectives in Health Communication: Meaning, Culture, and Power*, (pp. 335-356). New York: Routledge.
- U.S. Food and Drug Administration. (2004). *Patient and physician attitudes and behaviors associated with DTC promotion of prescription drugs—Summary of FDA survey research results* (final report). Washington, DC: K. J. Aikin, J. L. Swasy, and A. C. Braman.
- U.S. Food and Drug Administration. (n. d.). *The CDER handbook*. Retrieved October 28, 2008 from <http://www.fda.gov/cder/handbook/>
- USC Annenberg School Center for the Digital Future. (2009, April). *The digital future project 2009: Surveying the digital future year eight*. Los Angeles: H. Lebo.
- WebMD. (2007). Migraine and headache symptoms. Retrieved November 1, 2010, from <http://www.webmd.com/migraines-headaches/guide/migraines-headaches-symptoms>
- Wilkes, M. S., Bell, R. A., & Kravitz, R. L. (2000). Direct-to-consumer prescription drug advertising: Trends, impact, and implications. *Health Affairs*, 19, 110-128.
- Williams, T. R. (2000). Guidelines for designing and evaluating the display of information on the Web. *Technical Communication*, 47, 383-396.
- Williams, T., Mulligan, C., Koprowics, K., Miller, J., Reimann, C., & Da-Shin, W. (2005). Does isolating a visual element call attention to it? Results of an eye-tracking investigation of the effects of isolation on emphasis. *Technical Communication*, 52, 21-26.
- Zdenek, S. (2007). Frozen ecstasy: Visualizing hearing in marketing materials for cochlear implants. *Proceedings of the 25th ACM International Conference on Design of Communication*, SIGDOC '07, 241-248.

The Hospitalist Model—Are Hospitals Informing Patients?

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ABSTRACT

A primary information source for many patients and caregivers is an organization's website. This study analyzes 17 of the top hospitals in the U.S. to determine how they are communicating about the role of the hospitalist in the care of patients. Beginning with a review of the evolution and implantation of the hospitalist in the hospital setting, this paper then goes on to outline the information gathered and analyzed from the websites used in this study. The findings indicate that hospital systems need to improve the types and kinds of communication that it posts on their websites to assist patients with their information needs.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

Hospitalists; online health communication; health communication

INTRODUCTION

In 2005, at the age of 94, my grandmother fell while living in a nursing home and was taken by ambulance to the emergency room (ER), and she was subsequently hospitalized. At the ER, we met her hospitalist, who are board-certified internists who practice medicine solely at the hospital. Our family was surprised, and we did not understand why her primary care physician (PCP) was not caring for her in the hospital. Due to her anxiety about issues of health care, my grandmother moved to our community and had developed a relationship with her physician hoping that her physician would get to know her unique medical traits and care for her in times exactly like this.

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Communication Design Quarterly. ACM SIGDOC, New York, USA.

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However, when she was hospitalized, our primary point of contact was not her PCP, who knew her medical history and had a relationship with her. Instead, we met her hospitalist. Having no prior knowledge of my grandmother, the hospitalist had to begin with the most fundamental questions. Our frustrations were enhanced by the fact that my grandmother was unconscious. We had to rely on what we could recall about her medications, allergies, etc. Patients and their families in many areas of the U.S. are experiencing the same scenario day after day. When patients and their families are not aware that their PCP will not be treating them in the hospital, both patients and their families are shocked, surprised, and distrustful of the person they are meeting in the ER for the first time.

So what caused this change? In the mid-1990s the medical community made a significant change that has impacted patients across the country, introducing the hospitalist model into the hospital setting. The phrase that defines the profession and the work schedules of the professionals is known as the "hospitalist model" (Wachter & Goldman, 1996). To reduce costs, hospitals transferred medical care from the PCP to a hospitalist. The hospital system would save money because the PCPs would not have to divide their time traveling from the clinic to the hospital, and patients would not have to wait for test results or for the clinical physician to visit them at the beginning and end of the day. Using this new protocol, hospitalists are on site at the hospital 24 hours a day, allowing test results to be read quickly, medications and treatments prescribes, and decreasing time patients had to wait for the doctor. The result of this improvement would hopefully translate to a shorter length of stay in the hospital. Growing rapidly since its initial implementation in the mid-1990s, hospitalists in the U.S. number approximately 30,000 (Wier et al., 2010).

This change is not without other kinds of costs, however, since patients and their families expressed great concern and distrust about this new profession (Burleson, 2014). At issue is a crucial missing communication piece—hospital systems informing patients about hospitalists. My research sought to move upstream in the communication flow and ask, "What are hospitals doing to inform their communities about hospitalists?". To answer this question, I gathered and analyzed information from their websites, which is one of the ways that patients and their families learn about the hospital. It was important to look at the hospitals' websites because I wanted to identify the information that the community could access before or during hospitalization. This led to a secondary

question, “If a patient or patient family member seeks information from the hospital system’s website, what information is available?” I analyzed the 17 hospitals, representing 12 states, included in the U.S., according to the 2012-2013 *U.S. News & World Report*’s list of “Best Hospitals” (McMullen, 2012).

Although some hospitals may not be utilizing the hospitalist model at this time, we cannot discount the importance of this topic. Rather, this topic, which is often misunderstood by the public, provides valuable information into communication practices between hospitals and the communities they serve. As Morahan-Martin (2004) asserted, “Online health information is used to fill an information void which can enhance coping and self efficacy...” (p. 497). Since hospital websites deliver information online, they have an opportunity to fill a void for patients, family members, and caregivers who need information to cope with a hospitalization.

Scholars in technical communication have entered into scholarly conversations about online health information. In 2008, Koerber and Still edited a special issue of *Technical Communication Quarterly* that laid the groundwork for technical communicators to enter into this domain, especially considering the field’s emphasis on user experience and website design. While the field has not had a sustained focus in examining online health information, there is a growing number of works in this area as was outlined in the introduction to this special issue. (See also Mogull & Balzhiser and Lazard & Mackert in this issue). However, the particular question of how hospitals inform patients and their community about hospitalists demands our attention. Thus, my study picks up where these others have left off, attempting to build our understanding by locating the information, identifying how hospital systems define hospitalists, and hopefully understanding how this information or lack of information might influence patient care. This paper will begin with a review of how the hospitalist profession evolved and its implementation in the hospital setting, followed by an overview of my research, and will conclude with my findings and implications. To begin, it is important to understand the complexity of the implementation of the hospitalist profession into the hospital setting.

THE HOSPITALIST MODEL

The hospitalist profession began in the mid-1990s as health care costs were growing exponentially (Gregory, Baigelman, & Wilson, 2003). From 1997 to 2009, with adjustments made for inflation, the actual costs of hospital services increased 37% (Wier et al., 2011). Two areas significantly impacted the hospital community—the Balanced Budget Act and managed care penetration. “Thirty-four percent of hospitals experienced operating losses in 1997, and bond ratings of not-for-profit hospitals decreased during this period” (Gregory, Baigelman, & Wilson, 2003, p. 905). Many have viewed the current state of medical care as a transition from focusing on patient care to focusing on medicine as a corporate enterprise. Poduval and Poduval (2008) questioned the ethical implications of medicine as a corporate enterprise, and others such as Peterson’s (2009) systematic review of patient care in hospitalists to nonhospitalists systems recognized that hospital medicine now relies on patient outcomes and quality measures.

Two important studies have examined whether the hospitalist model was reducing medical costs and shortening patient length of stays. A 2004 study in *The American Journal of Managed Care* looked at 1706 patients over a 12-month period, and compared patient

outcomes based on the “new hospitalist service” with “traditional” inpatient services to determine the impact of hospitalists on patient groups. The authors found that patients treated by hospitalists had shorter lengths of stay and lower costs; however, they found that patients had higher costs per day when treated by hospitalists. The authors asserted that the higher costs per day were because hospitalists typically run their own tests to verify, monitor, and diagnose medical conditions (Kaboli, Barnett, & Rosenthal, 2004). The second study was published in 2007 in the *Pediatrics* journal, and it measured the impact of the hospitalist profession on children who were hospitalized and found that it reduced hospital stays as much as 50 percent (Srivastava et al., 2007).

While not as influential as the previous two studies, Kulaga et al. (2004), compared patient costs with patients treated by hospitalists and primary care physicians and also researched educational outcomes of residents who were supervised by hospitalists. Their results showed that hospitalists decreased the patient’s length of stay and also improved the educational experience of the interns. Thus, these three studies suggest that the medical community’s goals of reducing costs and shortening the length of hospital stays have not wholly materialized.

Subsequently, this initial cost saving success did result in many hospitals piloting the hospitalist program or simply adopting it. Matzka (2011) reported, “80 percent of hospitals with over 200 beds use hospitalists and there are more than 30,000 hospitalists practicing in more than 3,300 hospitals” (p. 44). Additional data showed that

. . . the number of hospitalists jumped 20%—from 19,000 to 23,000—between 2006 and 2007. Hospitalist programs had been established in 83% of hospitals that had more than 200 beds. In 2007, the average number of physicians in a hospitalist program was 9.4, compared to 8.3 in 2006. (“Hospitalists extend,” 2009, para. 2–3)

While the numbers of hospitalists are growing, there are also significant changes going on with hospitals regarding implementation. The all-encompassing term for how a hospital utilizes its hospitalists, including the length of each shift and also the number of days on and days off, is referred to as the “hospitalist model” (Pantilat, Albers, & Wachter, 1999; Sox, 1999; Wachter & Pantilat, 2001). For example, at Hospital A in my study, hospitalists’ shifts were seven days on and seven days off. At Hospital B, hospitalists’ shifts were three days off, two days on, and then it reversed. If a patient was hospitalized for four days at Hospital B, the patient might be treated by as many as three hospitalists; whereas at Hospital A, the patient might be treated by one or two hospitalists. In this study, the hospitalists reported that patients did not like to have their care transferred to another hospitalist while they were in the hospital. During the five years that I conducted my research, Hospital A made significant changes three times to find the most effective shift arrangement for the hospitalists and also for the patients. However, at Hospital B, the director did not make any adjustments and maintained a three/two shift (Burleson, 2014)¹. In other words, many different models currently exist, with the primary differences being the staffing arrangements (time on call, days off, etc.) (Auerbach, Davis, & Phillips, 2001; Sox, 1999; Wellikson, 2008). At present each hospital negotiates its own optimal time requirements, however, some hospital administrators do understand that change can negatively impact patient perceptions. Emory Hospital recognized the need to anticipate an influx of more

patients when a clinical group turns the care of their hospitalized patients over to hospitalists by making administrative adjustments. Although the administrators sought to pre-empt patient confusion by making gradual adjustments, the emphasis was on the hospital infrastructure adjusting to more hospitalists. The missing link, or wide chasms, was no mention of communicating this information to patients. The number of hospitalists at Emory Hospital Medicine grew from fifty-two to eighty-three in two years (2006–2008).

When a community group is ready to turn their patients over to us, we sit down with them and hospital administration and try to stagger the timing to give us time to recruit. We also set a future date for the transition to give us the appropriate amount of time to ramp up and fully take over that patient base. (Sattinger, 2008)

The hospital administrator summarizes the transition by stating, the implementation of the hospitalist model is contingent on understanding the impact of patients, during the implementation phase and after, and recruiting hospitalists to handle the patient load.

What the previous research suggests is that there are layers and layers of information that needs to be communicated to the public before hospitalization. For example, people need to be told about hospitalists and understand what their role is in the hospital, including information about that particular hospital's model (days on/days off) contact information, and additional information sources such as articles and videos, and the patient's PCP needs to share information with the patient specific to the patient's needs regarding hospitalization. With the increase in Internet users, including this information on a hospital website is a natural and easily accessed location to educate the public.

ONLINE HEALTHCARE INFORMATION AND HOSPITAL WEBSITES

Consumers are accessing the Internet in growing numbers. In fact, Internet usage across the globe has increased by as much as 300 percent since 2008 (Gibbons, Fleisher, Slamon, Bass, Kandadai, & Beck, 2011). Perrin & Duggan, (2015) authored the PEW Internet Life Survey that summarizes Internet usage from 2000 to 2015, which is also the same approximate time frame of this study's hospitals' implementation of their hospitalist programs. They reported that Internet usage in the United States has grown from 52% during this period and noting that usage is most likely to increase (Perrin & Duggan, 2015). Patients are also seeking online health information in growing numbers to assist in making health related decision. Fox & Duggan (2013) report that within the past year 72% Internet users reported that they had looked online for health information.

Scholars in other fields have conducted detailed research in analyzing how individuals find and often circumvent what seems to be obstacles preventing access to health information (McMullan, 2006; Morahan-Martin, 2004; Van Deursen & Van Dijk, 2009). Morahan-Martin (2004) calls for health professionals to "promote more effective search and evaluation techniques" (p. 497), and she adds that professionals should be involved in developing uniform standards for health-related sites. Van Deursen and Van Dijk (2009) found "while websites may seem to be easy to navigate for designers, users may find them disorientating and confusing" (p. 400) with seniors and low-educated participants experiencing the most difficulty. (See Lazard & Mackert in this issue for more

information on designing online health information).

Two studies were important to the takeaway message of my research—one study and one response to that study. Kopelson's (2009) analysis of patient-doctor exchanges for information about the patient's health, and Hensley Owens' (2011) response illuminate the tension and also the reward of e-health information. Hensley Owens in her review adds another dimension to Kopelson's study by suggesting that there is a risk and benefit of scholarly analysis. As an example, she adds to Kopelson's statement that some doctors may feel challenged by e-health as a medical authority by stating, "however, the risk--and benefit—for medicine and e-patients alike may instead be that e-health unveils what medical authority actually is" (p. 231), which calls to mind the idea that "Internet health is a complex rhetorical situation, and its effect is likewise complex" (Segal, 2009, p. 352).

The 2003 National Cancer Institute, Health Information National Trends Survey (HINTS) survey found that patients preferred to talk to their physicians when told about a health problem; however, "the most frequently cited source for those having looked for health information in the previous 12 months was the Internet" (Hesse, et al. 2011, p. 16). Information about hospitalists is another kind of online health information. To those who value the importance of online health information, St.Amant (2015) gives us a compelling call for the reason to carry on when he states, "In many ways, medical and health information connects to one central principle: care" (p. 39).

Studies like Kopelson's have often looked at online health information from the doctors perspective of patients, while my study explores how patients might educate themselves about their physicians. However, hospital administrators have to risk stepping outside of their organizations and peering into them to understand that before patients can ask questions, they have to understand the changes that are happening within the hospital. The benefit is caring for patients who understand the changes and can better cope with their illness. My hope is to engage a discussion, and, as Barton (2004) concludes "critical engagement can thus facilitate collaborative discussion toward critically informed change" (p. 107).

METHODOLOGY

I used a case study methodology with a purposeful sample size of 17 hospitals representing twelve states. In order for a hospital to be ranked as one of the "Best Hospitals" by the U.S. News & World Report, the hospital has to qualify in one of four categories: a teaching hospital, affiliated with a medical school, at least 200 beds, or have at least 100 beds and offer at least four of eight specific medical technologies. In 2012-2013, a total of 2,226 hospitals or 46 percent met these standards. The next set of standards was a ranking from 0-100 based on four areas: reputation, patient survival, patient safety, and care-related factors. After ranking the hospitals, 17 hospitals met the standards and were ranked within the group. Table 1 below lists the hospitals in the "Best Hospitals" list.

In my analysis, the following six areas on the hospital systems' websites were identified:

- Term or Phrase Used to Describe Hospitalists
- Year the Hospitalist Program was Implemented
- Number of Hospitalists

- Articles, Videos, Blogs, or Brochures (linked from the website)
- Navigation Paths to the Information (copied urls)
- Hospitalist Information's Targeted Audience

In my preliminary research about hospitalists, I noticed that hospitals have adopted different terms for the professional. For example, some might refer to hospitalists as hospital doctors, hospital medical providers, or in-house physicians. I then sought to find connections among the results. For example, was this a common practice to create a unique phrase or did most hospitals use the term hospitalist? Using different terms to describe this professional could also add to the confusion about what the doctor does in the hospital setting. Does the job description change based on the name given by the hospital?

Factors such as the year the program was implemented and the number of hospitalists might give the user insights about the program in that particular hospital. If it had only existed one year and had several hospitalists, it would be interesting to compare the depth of information provided on the website compared to a hospital that had implemented the program for ten years and had over fifty hospitalists. In other words, I sought to document any nuances that might lead to potential insights.

In addition to the information that stated on the website, I noted any links to articles, videos, blogs, or brochures. Last, I copied the URLs of each source of information about hospitalists. The primary reason for this was to document the navigation patterns. Was there any information on the hospitals home page? Was the

information embedded? I also sought to compare statements about the hospitalists in relationship to PCPs. Because patients are often confused when they first encounter a hospitalist at the hospital, I wanted to note if the hospital explained the differences between a hospitalist and a PCP. If there was an explanation, I wanted to document the words that they used.

I conducted the Internet searches of 17 hospital sites along with two research assistants. These three sets of search results were compared for any differences, and when differences were noted, another search was conducted. The researchers then agreed on the search result. Search results were typed in Excel spreadsheets with common column headings. The summative report was then imported in NVivo 9. Classification sets were created for the fields so that results could be easily viewed and also filtered and tabulated. For example, searches could be conducted to view similarities and differences beyond what could be viewed from a spreadsheet. Also, descriptive words were coded for subtle yet meaningful connections. In this study it was important to document the choice of words used to describe hospitalists and the hospitalist program. The linked memo feature in NVivo 9 was helpful to note nuances within the codes (Bazeley, 2007). This feature allows the coder to make notations as reminders and also connect similar and disparate phrases.

An organization's content placed on a website is not done in a haphazard way. Rather, content is written with an audience in mind to communicate important information from the perspective of the organization. From outside the organization looking inward, it is also a means to look at what the organization's values and who the organization determines is the central audience.

RESULTS AND DISCUSSION FROM WEBSITE ANALYSIS

The results of analyzing these hospital websites show that the information is often written for the professional audience rather than the patient audience. In fact, descriptions of the hospitalist professional written for the patient audience tended to be embedded in links to articles that were difficult to find. There were almost as many terms and descriptions as there were hospitals which would confuse patients, family members, and caregivers. Also, the number of hospitalists working at each hospital indicates that the hospital might prioritize educational information about the program to the communities. In other words, hospitalists are treating a significant number of patients, and, if patients are upset or confused, this information could directly impact patients' care or impede recovery.

Term or Phrase Used to Describe Hospitalists

Descriptions of the hospitalists yielded valuable insight into the role that the hospitalist plays at each hospital. Table 2 on the following page summarizes these results. Eleven of the 17 websites used the term "physician" to describe a hospitalist; yet, within those descriptions they varied significantly as to whether they used terms that the patient could understand or "hospital talk." For example, "hospital medical provider" to a patient does not answer the question, "What is a hospitalist?" Even the description of "providing care for patients admitted to the hospital" does not address patient concerns about the physician having their medical information or how the hospitalist interacts with them. The description of a hospitalist as the "patient's primary care physician" might seem to be written from the patient's perspective; yet, the patient might be further confused,

Table 1: Hospitals Surveyed

Rank	Hospital System
1	Massachusetts General Hospital, Boston
2	Johns Hopkins Hospital, Baltimore
3	Mayo Clinic, Rochester, Minn
4	Cleveland Clinic
5	Ronald Reagan UCLA Medical Center, Los Angeles
6	Barnes-Jewish Hospital/Washington University, St. Louis
7	New York-Presbyterian University Hospital of Columbia and Cornell
8	Duke University Medical Center
9	Brigham and Women's Hospital, Boston
10	University of Pittsburgh Medical Center
11	NYU Langone Medical Center
12	Northwestern Memorial Hospital
13	UCSF Medical Center, San Francisco
14	Mount Sinai Medical Center, New York
15	Hospital of the University of Pennsylvania, Philadelphia
16	Indiana University Health, Indianapolis
17	University of Michigan Hospitals and Health Centers, Ann Arbor

Table 2: Hospitalists' Terminology

Descriptions of Hospitalists on Websites		
Number of Hospitals	Term	Definition
11	physician	<ul style="list-style-type: none"> hospital-based medicine providing care for patients admitted to the hospital patient's primary care physician while in the hospital in-house physician who are on-site dedicated their careers to the care of hospitalized patients family practice physician
4	coordinator	<ul style="list-style-type: none"> coordinate the management of complex medical issues coordinate all aspects of the hospital stay
4	care giver	<ul style="list-style-type: none"> doctors charged both with caring for hospitalized patients and making hospitals work better"
3	specialist (includes the hospitalist as a specialist and the hospitalist communicating with specialists)	<ul style="list-style-type: none"> as a hospitalist, Dr. Y* and others like her provide the inpatient primary care physicians are no longer finding possible complex conditions establishing continuity of care among specialists and the patient's PCP
3	manager	<ul style="list-style-type: none"> managing the care of patients admitted by community physicians leading, directing and improving

wondering if there is a need for a hospital PCP and a clinical PCP. Several phrases seemed to attempt to make sure that patients know that it was their PCP's decision to transfer their care to a hospitalist. For example, one hospital site stated, "As a hospitalist, Dr. Y* and others like her provide the inpatient primary care physicians are no longer finding possible." This statement implies that either the PCP cannot care for the hospitalized patient or has elected not to care for the hospitalized patient.

Also, "specialist" or some form of the word was used in almost a third of the websites to describe a hospitalist. The term was typically used to communicate to the patient that the hospitalist knows the hospital culture, the personnel who work there, and can navigate the hospital setting knowing who to contact or the best time to run tests. For example, one hospital's description of a hospitalist stated, "physicians who specialize in caring for patients in the hospital and generally practice only in the acute care setting." However, when patients read "specialist" they may be alarmed that they need a specialist, may question if they can afford a specialist, and may wonder what part of the body the hospitalist specializes in. Table 2 below lists the categories of terms used beginning with the most used terms. In each category I have listed several examples quoting the information listed on the website. The four terms that were used most often included physician, coordinator, caregiver, and manager.

Many descriptions of hospitalists from the websites included statements about the PCP. After analyzing these statements more closely, it became apparent that the wording was written to compare the hospitalist to the PCP. Therefore, the hospitals are aware that patients are either expecting to be treated by their PCP and the information is intended to inform them of the change in professionals or the hospitals believe that patients have heard of PCPs and are trying to equate the care give by PCPs to the care that will be given by hospitalists. Table 3 below illustrates these comparisons. The column labeled "Summary of Hospitalist" includes my words summarizing what I believe to be the intent of the statement, and the column labeled "Comparison of Hospitalists' Care to PCPs' Care" are direct quotes from the hospitals' websites.

It was insightful and somewhat disturbing to see the comparisons to the PCPs and to read the emphasis on the "outstanding care" that the hospitalists provide. It was insightful because the information is often so embedded that I was surprised to see hospitals articulate that they felt patients needed to know this information. It was at the same time disturbing because there is a great need to inform patients and yet it is sometimes hidden and glossed over.

In reporting the results of my analysis, it was important to separate each area and take a deeper look at the information; however, often these areas overlapped. The following section is an example of gleaning more information by overlapping the year that the hospital implements its hospitalist program with the number of hospitalists working at the hospital. Also, many of the hospitals did not report the year of implementation; however, this information was important in order to analyze the information. Often it is insightful

Table 3: Hospitalists' Care Compared to PCPs' Care

Summary of Hospitalist	Comparison of Hospitalists' Care to PCPs' Care
Navigates better in the hospital than a PCP	The hospitalist is ... "better able to navigate the hospital system"
Communicates with the PCP	The hospitalist ... "communicates closely with the patient's PCP or surgeon"
Always available	The hospitalist ... "is in-house and on-site"
Can quickly decide about treatment	The hospitalist ... "can make immediate decisions about ongoing care throughout your stay"
Care for patients admitted by PCPs	The hospitalist ... "manages care of those admitted by community physicians."
Improve system and processes	Hospitalists provide outstanding care to patients and are in the unique position to be able to identify systems issues and help improve processes.

and important to note the information that is missing. The following section considers this topic.

Year Hospital Implemented the Hospitalist Program

Over half of the hospitals did not include the year that their hospitalist programs were implemented. One hospitalist program began as early as 1999, and the remaining hospitals implemented their hospitalist programs from 2000 to 2010. It was interesting to note that one program had started two years before this study and already had 33 hospitalists. Another hospital had begun five years ago and had 114 hospitalists. The hospitals that had programs that were at least 10 years old ranged in numbers from “less than 40” to 55. These numbers might indicate that the hospitals beginning their programs more recently were including many more hospitalists in their program at a much more rapid pace than the hospitals who had more longevity, especially the hospital with 144 hospitalists in the five years that the program had been in place. However, it could mean that the number of hospitalists required to ensure that the program was viable was in the range of 33-55 hospitalists for these hospitals.

Number of Hospitalists

The total number of hospitalists ranged significantly from 8 to 114. I looked at the number of hospitalists that practiced at the hospital for two reasons—the number might indicate the level of the program’s implementation and also might indicate how much importance the hospital might place on educating the public. For example, if there was one hospitalist practicing medicine at the hospital and oversaw the care of a small number of PCPs, then the hospital might not devote web space to educating the public about hospitalists. Also, the hospital might have developed a pilot program or be on the verge of a full-scale implementation. However, if a significant number of hospitalists practicing medicine oversaw the care of a large percentage of the hospital network’s PCP patients, then there might be more information on the hospital’s website, the information might be easier to navigate, or there might be a tab on the hospital’s home page. However, I did not find any differences in the information provided by each hospital’s website. A reader would not be able to discern if there were eight hospitalists or 144.

As I began analyzing these websites, I thought it was important to note if the information was easily accessed or if the user had to access it by clicking on linked information. Also, what format was that linked information saved as? In the following paragraphs, I have listed my findings.

Articles, Videos, Blogs, or Brochures

Of the 17 hospitals in this study, one hospital had a blog, three hospitals had links to articles, and one hospital had a FAQ section about hospitalists. The majority of websites that discuss or mention a hospitalist program include statements from a “Sample Hospitalist Practice Brochure” published by The American College of Healthcare Executives (ACHE) (2012). ACHE recommends and includes wording that hospital executives may copy to be included on their “printed” brochures. One example of the information in this sample brochure includes, “If you would like to speak with one of the hospitalists while you or a member of your family is in the hospital, it is best to ask the nurse caring for you to page the doctor” (p. 235). On the surface this statement appears helpful, but to patients who do not understand the hospitalist profession, the statement promotes continued miscommunication about the

profession. The only information patients understand is that if they want to talk with their hospitalist, they need to contact a nurse.

Figure 1 below illustrates an example of an article discussing expanding their hospitalist program. A patient reading the article might expect to see information tied to the patient benefits of this expansion. However, the benefit was a financial benefit to the hospital system. The article posted on The University of Pittsburgh Medical Center (UPMC) website was written by the Pittsburgh Business Times. In the article, the author states that UPMC “will extend specialized care to three of its hospitals... as a larger effort to improve care for hospital patients, while shrinking the average length of stay and cutting unplanned readmissions” (Mamula, 2012, n.p.).

The University of Michigan Hospitals and Health Centers had a link to an article, “At Home in the Hospital: New breed of physicians always nearby,” published by The University of Michigan Medical School’s Medicine at Michigan journal (Tobin, 2006). The article discussed a typical day for a hospitalist and describes the new role of hospitalist as “good for the patient, who gains by having a doctor who’s always just down the hall. And studies show that it’s good for the health-care system as a whole.” Topics such as why physicians chose the hospitalist profession are detailed as are the statistical results of the benefits to hospitals. For example, “... studies have shown that hospitalists save 10 to 15 percent of the average hospital stay. By one estimate, a hospitalist team that manages 3,000 cases per year can save its hospital more than \$2 million.”

Another linked source was a blog from the Cleveland Clinic. The most recent information seemed to be from 2006, and the information posted was directed toward medical professionals. Canadian Journal of Anesthesia and the Journal of Vascular Surgery were among the articles linked from the blog site. There was a “Who We Are” tab with pictures of the hospitalists, a short description, curriculum vita (CV), and publications list. All other tabbed areas such as Research, Articles, Clinical Cases, and News were targeted for the medical community.

Mount Sinai Hospital has an FAQ section that was linked from the Overview page. In it, the information addressed several questions,



Figure 1: Press Release, Hospitalist Program

one of which was “Why is a Hospitalist caring for me?” This question was framed in the context of a question that a patient might ask. The answer to the question was,

Your primary care physician may have requested that a hospitalist be in charge of your care during your stay at the hospital, or you may have had one of our hospitalists assigned to care for you. In this way, you benefit from being seen by a doctor whose practice is entirely focused on the care of hospitalized patients—a doctor who is in regular contact with your primary care physician and can care for you and answer your questions around the clock.

This FAQ section was unique because it did not give any statistical information or state the benefit to the hospital system.

Although both hospitals distribute brochures in the clinics and at the hospital, neither hospital had their brochures available online. Both hospitalist directors acknowledged that they did not believe that the clinical physicians distributed them to their patients or talked to their patients about the hospitalist program. Although in print form, both of these hospitals had very similar phrases in their brochures which instructed the patient and/or family to ask the nurse to contact the doctor under the heading “How To Contact Us.”

Navigation Paths to Hospitalist Information

In almost all of the websites from the “Best Hospitals” list, the user had to type the word “hospitalist” in the search window to find any information. Figure 2 below illustrates a segment of the first screen in which the users sees “hospital medicine” which is the fourth screen that they would have searched through. Note that while it says “Divisions” for the page, the url lists it as “areas-of-care.”

When the user clicks on “Hospital Medicine,” they find the FAQ section. The description of what a hospitalist does at the hospital is lengthy but contains good information. However, the response to “How Do I Contact the Hospital Physicians?” is a response that is recommended on the literature but is not audience focused because it states that if you want to talk with a hospitalist, ask a nurse. This information is interesting in light of the fact that the FAQ states that a hospitalist will visit the patient once a day. In response to

the question, “What is a Hospitalist Caring for me?, the answer promotes the hospitalist as an expert in comparison to their PCP. It states, “an expert in the care of hospitalized patients, who will also be able to see you multiple times each day, if necessary.”

In addition to this example, there were issues with navigating to find information. Searching for information about hospitalists on Mount Sinai’s website results in navigating through 5 screens of information before getting to their FAQ section. The searches included the home page, patient-care, service-areas, medicine/areas-of-care/hospitalist-program/faq. While the link showed one tab labeled “areas-of-care,” it was listed as “Divisions” on the website. The url to get to the following information was www.mountsinai.org/patient-care/service-areas/medicine/areas-of-care/hospitalist-program/faq

To access Figure 3 below, a user would have to use the following url: <http://www.mountsinai.org/patient-care/service-areas/medicine/areas-of-care/hospitalist-program/faq>

The focus of this research is to look at the information hospitals provide on their websites to patients and to their community, however, it is important to consider the underlying message of

FAQs
Staff

Hospitalist Group Frequently Asked Questions

What does a hospitalist do?
All of the Hospitalist's time is spent caring for hospitalized patients. Hospitalists function as your primary care doctor during your stay at the hospital. They work with other specialists to monitor, guide, and coordinate all major aspects of your treatment. The hospitalist also makes sure that your primary care provider is informed of your condition and involved in the plan of care. A member of the Hospitalist team will visit you daily, assist with your medical care, discuss medical issues with you and your consulting specialists, and arrange for follow-up with your primary care provider once you are discharged. Hospitalists frequently provide consultative care in Internal Medicine for other physicians and surgeons. They work with nurses and other care providers in the hospital to try to efficiently and safely improve the patient care process from admission to discharge.

How do I contact the hospitalist physicians?
If you or a family member would like to speak with one of our hospitalists, it is best to ask the nurse caring for you to page the doctor. We also have a 24 hour answering service 212-241-1653.

Why is a Hospitalist caring for me?
Your primary care physician may have requested that a hospitalist be in charge of your care during your stay at the hospital, or you may have had one of our hospitalists assigned to care for you. In this way, you benefit from being seen by a doctor whose practice is entirely focused on the care of hospitalized patients—a doctor who is in regular contact with your primary care physician and can care for you and answer your questions around the clock.

Why isn't my regular physician seeing me in the hospital?
Hospitalists often admit patients for other doctors who prefer to concentrate their efforts and expertise in office settings and want you to be evaluated by an expert in the care of hospitalized patients, who will also be able to see you multiple times each day, if necessary. While you are in the hospital, your primary care doctor has asked our on-site hospitalists to care for you and your medical needs. Once you are discharged, your primary care physician will resume responsibility for your medical care.

Figure 3: Embedded Information Written for Patients

Home > Patient Care > Service Areas > Medicine > Divisions

Medicine

Divisions

What We Treat

Specialized Treatment Centers and Services

Internal Medicine Associates

Doctors

News

Divisions

Cardiology

Clinical Immunology

Diabetes, Bone Disease and Endocrinology

Digestive Diseases and Gastroenterology

Hematology and Medical Oncology

Hospital Medicine

Infectious Diseases

Kidney Diseases

Liver Diseases

Lung Disease and Pulmonary Medicine

Rheumatology

Figure 2: Navigation Challenges

placing that information beneath multiple layers that seem to be embedded within the site.

HOSPITALIST INFORMATION'S TARGETED AUDIENCE

The overwhelming majority of hospital websites in this study did not target their patients and the community when they defined the hospitalists' responsibilities or explained how the hospitalist model would impact patient care in the hospital. At the very basic level, when referring to the "impact of care" or similar phrases, patients need to know what this means. The statement that was missing on websites that I analyzed was acknowledging that, in the past, patients have had their PCP treat them in the hospital, but healthcare has changed. Often the information mentioned saving costs or "making hospitals work better," yet, how does the patient benefit from this change? This statement could be followed by what the change means to the patient. Instead they seem to be justifying the hospitalist model to the public, and the justification is a cost-based justification.

To cite another example, Duke University Medical Center's website has a link to an article, "A Familiar Face." In it, the article states that, "A hospitalist will have various responsibilities, depending on the hospital" (Harbers, 2008, n.p.). What are these "various responsibilities"? Additional questions that hospitals need to address include: When do patients meet hospitalists? Do hospitalists have patients' medical information? Will patients see their PCP while they are hospitalized? The number of hospitalists who may treat a patient further accentuates the need for this missing information.

Understanding that many of the hospitals in this study are teaching hospitals and, therefore, seek to recruit their students and other students to work in their hospitals, it was very apparent that the emphasis on education about hospitalists focused on recruiting physicians. See Figure 4 below. Note that the first statement reads, "The goals of the Section are to provide excellent inpatient care and to serve as educators for medical students, resident, and fellows." I do not want to downplay the importance of recruiting

and maintaining enough physicians so that patients are properly cared for. At issue is not including or linking from this information what is involved in patient care.

What is perplexing is that whether or not the hospital is a teaching hospital, the patients need to know who is caring for them—and, most importantly, they need to know this before they are admitted. Figure 5 on the following page is an example of the search result when typing in hospitalist. It is understandable that this hospital might emphasize the education they provide their medical students, and so they have placed it first.

However, when the patient selects "Patient Care," there is a very little information about patient care but rather states that they provide patient care. See Figure 6 below. In the text, Northwestern University states, "The faculty of Northwestern University Feinberg School of Medicine provide clinical patient care through affiliated hospitals and practice plans."

The audience for this page, titled "Patient Care," clearly was not the patient. In addition to this example, there were issues mentioned previously in navigating to find information.

IMPLICATIONS AND RECOMMENDATIONS

In this section I summarize the recommendations and implications of this study.

Certainly the quality of a website's design is important to the user. Ford, Huerta, Schilhavy, and Menachemi (2012) demonstrated that content, accessibility, marketing, and technology impact patient interaction with hospital sites. However, medical rhetoricians understand that the words used and also the intentional lack of information communicates a message to the patient. Patients need to be able to read information and understand what that information means to them. The information needs to prepare them for situations that they will encounter in the hospital at a very vulnerable and stressful time. For example, in my previous study of two community-based hospitals, almost 99% of patients met

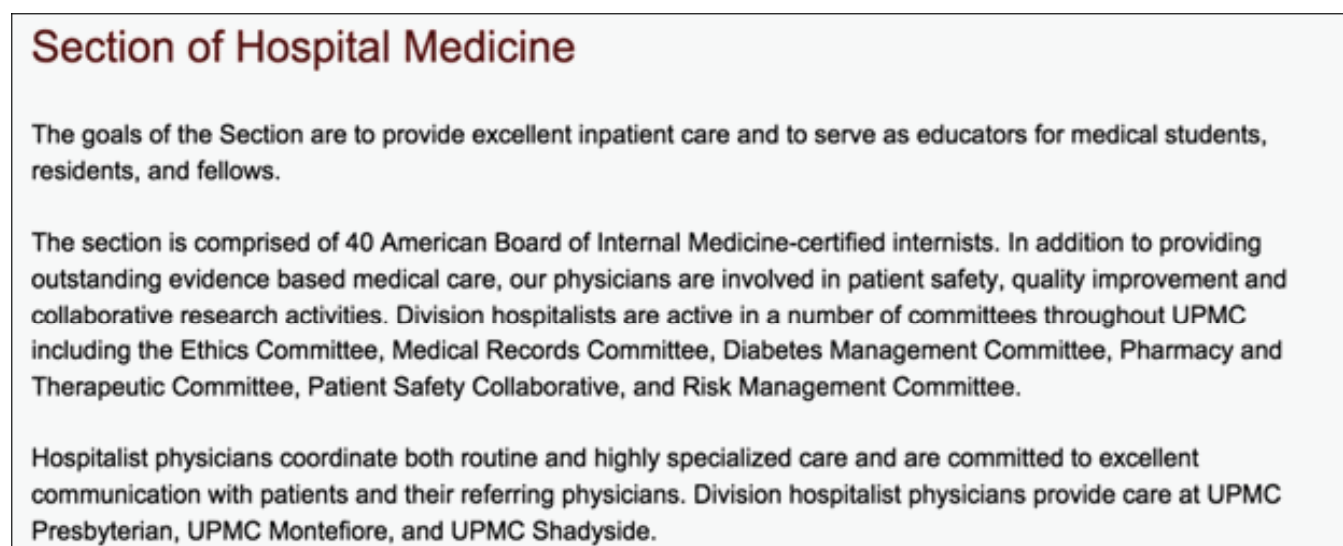


Figure 4: Hospitalists' Function in the Hospital



Figure 5 Hospitalist Training Program

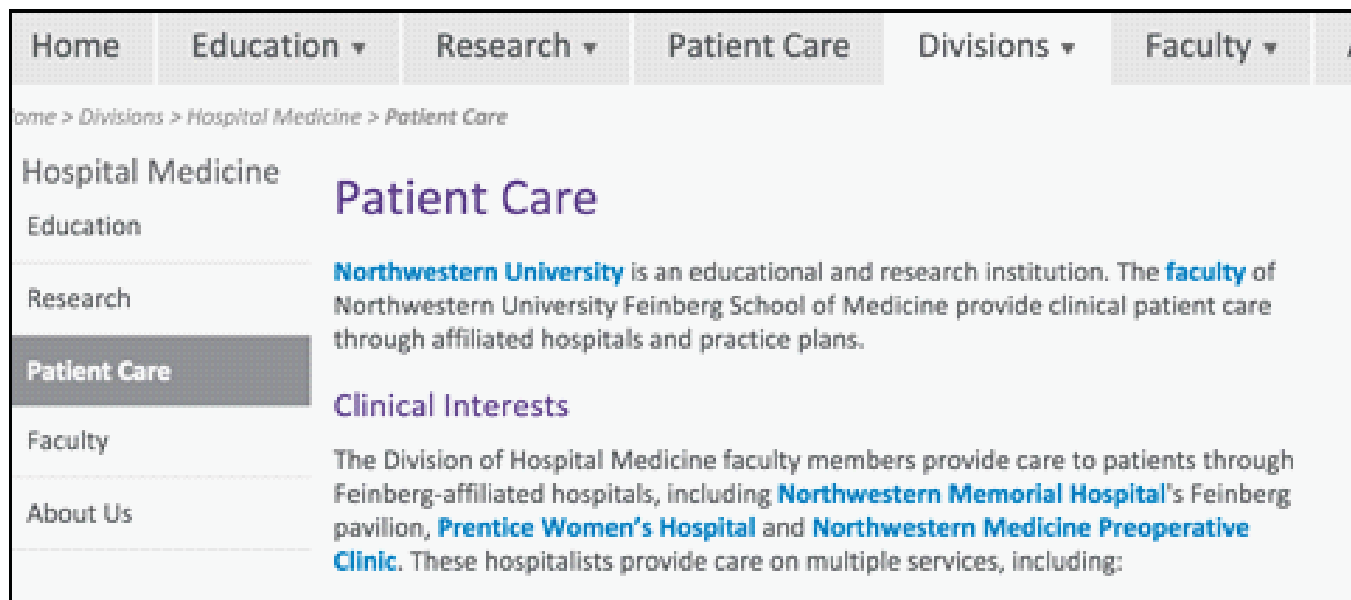


Figure 6: “Patient Care” Written for the Professional Audience

their hospitalist in the ER (Burleson, 2012). Lazard and Mackert in this issue provide important information that could be useful in designing online health information to better inform patients.

In addition to information that patients can access on their community’s hospital website(s), hospitals need to distribute print materials to patients through multiple channels. My previous research (Burleson, 2014) found that some hospitals developed brochures about their respective hospitalist programs, but that the distribution of those materials was problematic. Both hospitalist directors stated that these brochures are used at the hospital, particularly when patients are anxious, but the main reason they are printed is so that the PCPs can give them to patients at the clinic to educate their patients about hospitalists. When the directors were asked if they thought that the PCPs were, in fact, distributing them, they responded that if they were, the patients were not reading them because the patients are not aware of hospitalists when they meet them in the ER. Hospitals are also hesitant to directly communicate this information for reasons that include upsetting patients. While, in fact, it was a mutually beneficial decision for the PCPs and the hospitals to implement the hospitalist model,

it appears to be the final decision of the PCP clinical group. It would be common practice for patients to be upset with the entity communicating the message instead of being upset with their PCPs. I would offer that this is why PCPs are reluctant to tell their patients or give them brochures that have been printed and delivered to them by their networked hospitals (Burleson, 2014). Another confusing element of not sharing information is that it is understandable why the PCP group early adopters would speculate that they might lose patients if they told them that they were not caring for patients in the hospital. However, in many communities almost 100 percent of the PCP groups transfer patient care to hospitalists and yet they are still not sharing this information with their patients. To overcome this limitation, hospitals should not only distribute information to the PCPs but also post this critical information on their website and talk to their patients when the patients are in their offices for checkups.

I was limited in my study to those websites I accessed. This study could be replicated to include a much wider scope of hospital system websites. My intent was to illuminate the information available on hospital systems that seem to be respected leaders in

their field to provide preliminary information on not only hospitals presently communicate about this important issue, but also offer some insights into ways it can be improved.

Beyond the analysis, my hope is that hospital systems will take a fresh look at their websites and write information that the patient needs and in a language that the patient understands. Certainly medical professionals access hospital systems websites and pertinent information should be available; however, those same hospital systems must recognize that patients visit their sites for answers to very important questions. Whether a hospital attains the ranking of a “Best Hospital” or diligently serves a rural population in a remote area, patients deserve to know the information about who is going to treat them when they are hospitalized.

To technical communicators, we have the knowledge of design, audience, content, and all of the critical areas that comprise an effective, informational website. We also have the tools to know how to find that information. Healthcare is changing at a pace that we are grasping to understand. We can share what we know, and we have the Internet to use to communicate that information. It is fluid, flexible, and ready to be accessed.

*pseudonym used

I At Hospital B, a patient who is hospitalized for four days can be seen by as many as three hospitalists. For example, if the patient is treated by a hospitalist who is on his last day of service, then the second and third days the patient is seen by a hospitalist who is on a two-day rotation, then on the patient's final day of her four-day hospitalization, she will be seen and discharged by a third hospitalist. Findings showed that patients at the hospital with the rotation just described have more questions about the process and needed much more education (Burlleson, 2014).

REFERENCES

- Atack, L. & Luke, R. (2012). The impact of validated, online health education resources on patient and community members' satisfaction and health behaviour. *Health Education Journal* 71(2): 211-218.
- Auerbach, A. D., Davis, R. B., & Phillips, R. S. (2001). Physician views on caring for hospitalized patients and the hospitalist model of inpatient care. *Journal of General Internal Medicine*, 16(2), 116-119.
- Barton, E. (2004). Discourse Methods and Critical Practice in Professional Communication. *Journal of Business and Technical Communication*, 18(1), 67-111.
- Bazeley, P. (2007). *Qualitative data analysis with nvivo*. Los Angeles, CA: Sage Publications Ltd.
- Burlleson, D. (2012). *Hospitalists' Perceptions of Communication and How They Navigate Communication Challenges within the Hospital Setting*. Dissertation, Texas Tech University.
- Burlleson, D. (2014). Communication challenges in the hospital setting: A comparative case study of hospitalists' and patients' perceptions. *Journal of Business and Technical Communication*, 28(2), 187-221.
- Ford, E. W., Huerta, T. R., Schilhavy, R. A. M., Menachemi, N. (2012). Effective US Health System Websites: Establishing Benchmarks and Standards for Effective Consumer Engagement. *Journal of Healthcare Management* 57(1): 47-64.
- Fox, S., & Duggan, M. (2013). *Health online 2013*. Washington, D.C.: Pew Research Center's Internet & American Life Project. Retrieved from <http://www.pewinternet.org/2013/01/15/health-online-2013/>
- Gibbons, M. C., Fleisher, L., Slamon, R. E., Bass, S., Kandadai, V., & Beck, J. R. (2011). Exploring the Potential of Web 2.0 to Address Health Disparities. *Journal of Health Communication* 16(sup1): 77-89.
- Gregory, D., Baigelman, W., & Wilson, I. B. (2003). Hospital economics of the hospitalist. *Health Services Research*, 38(3), 905-18.
- Harbers, C. (2008, December 22). *A familiar face*. Retrieved from http://www.dukehealth.org/health_library/health_articles/a_familiar_face
- Hensley Owens, K. (2011). Rhetorics of e-Health and information age medicine: A risk-benefit analysis. *JAC*, 31(112), 223-235.
- Hesse, B. W., O'Connell, M., Augustson, E. M., Chou, W. Y., Shaikh, A. R., & Rutten, L. J. (2011). “Realizing the promise of Web 2.0: engaging community intelligence.” *Journal of Health Communication* 16(sup 1): 10-31.
- Heifferon, B., & Brown, S. C. (Eds.). (2008). *Rhetoric of health-care: Essays toward a new disciplinary inquiry*. Cresskill, NJ: Hampton.
- Hospitalists extend their reach in U.S. hospitals. (February 2009). *Today's Hospitalist*. Retrieved from http://www.todayshospitalist.com/index.php?b=articles_read&cnt=762
- Kaboli, P. J., Barnett, M. J., & Rosenthal, G. E. (2004). Associations with reduced length of stay and costs on an academic hospitalist service. *American Journal of Managed Care*, 10(8), 561-568.
- Koerber, A. & Still, B. (2008). Online health communication. [Special issue] *Technical Communication Quarterly*, 17(3).
- Kopelson, K. (2009). Writing patients' wrongs: The rhetoric and reality of information age medicine. *JAC*, 29(1-2), 353-404.
- Kulaga, M. E., Charney, P., O'Mahony, S. P., Cleary, J. P., McClung, T. M., Schildkamp, D. E., et al. (2004). The positive impact of initiation of hospitalist clinician educators. *Journal of General Internal Medicine*, 19(4), 293-301.
- Mamula, K. R. (2012). UPMC's hospitals program expanding to 3 more locations. *Pittsburgh Business Times*. Retrieved from <http://www.hospitalist.com/assets/007/10180.pdf>
- Matzka, K. (2011). “The Evolving Medical Staff: Keeping up with the Practice of Hospital Medicine.” *Physician Executive*, 37(5): 44-48.
- McMullan, M. (2006). Patients using the Internet to obtain health information: How this affects the patient-health professional relationship. *Patient Education and Counseling*, 63: 24-28.
- McMullen, L. (2012, July 16). *U.S. News & World Report Best Hospitals 2012-2013*. Retrieved from <http://health.usnews.com/health-news/best-hospitals/articles/2012/07/16/best-hospitals-2012-13-the-honor-roll>
- Morahan-Martin, J. (2004). How internet users find, evaluate,

- and use online health information: A cross-cultural review. *CyberPsychology & Behavior*, 7(5): 497-510.
- Pantilat, S. Z., Alpers, A., & Wachter, R. M. (1999). A new doctor in the house: Ethical issues in hospitalist systems. *JAMA*, 282(2), 171-174.
- Perrin, A., & Duggan, M. (2015). *Americans' internet access: 2000-2015*. Pew Research Center.
- Peterson, M. C. (2009). A systematic review of outcomes and quality measures in adult patients cared for by hospitalists vs nonhospitalists. *Mayo Clinic Proceedings*, 84(3), 248-254.
- Poduval, M., & Poduval, J. (2008). Medicine as a corporate enterprise: A welcome step? *Mens Sana Monographs*, 6, 157-174.
- Popham, S. & Graham, S. (2008). A structural analysis of coherence in electronic charts of juvenile mental health. *Technical Communication Quarterly*, 17(2), 149-172.
- Ryan, C. (2005). Struggling to Survive: A study of editorial decision making strategies at MAMM Magazine. *Journal of Business and Technical Communication*, 19(3), 353-376.
- Sample Hospitalist Practice Brochure. (2012). *American College of Healthcare Executives, Appendix C*, 233-235. Retrieved from http://www.ache.org/pubs/hap_companion/miller/Appendix%20C.pdf
- Sattinger, A. (2008). *Hitting the big time. The Hospitalist*. Retrieved from http://www.the-hospitalist.org/details/article/187659/Hitting_the_Big_Time.html
- Segal, J. (2005). *Health and the rhetoric of medicine*. Carbondale, IL: Southern Illinois UP.
- Segal, J. (2009). Internet health and the 21st century patient. *Written Communication*, 26(4), 351-369.
- Sox, H. C. (1999). The hospitalist model: Perspectives of the patient, the internist, and internal medicine. *Annals of Internal Medicine*, 130(4), 368.
- St.Amant, K. (2015). Culture and the contextualization of care: A prototype-based approach to developing health and medical visuals for international audiences. *Communication Design Quarterly* 3(2), 38-47.
- Srivastava, R., Landrigan, C. P., et al. (2007). Impact of a hospitalist system on length of stay and cost for children with common conditions. *Pediatrics*, 120(2), 267-274.
- Tobin, J. (Fall 2006). *At Home in the Hospital: New breed of physicians always nearby*. James Tobin, Medicine at Michigan, Vol. 8, #2, Fall 2006. Retrieved from http://www.med.umich.edu/intmed/hospitalist/news/HospitalistProgram_MedIn-Michigan.pdf
- van Deursen, A.J.A.M., & van Dijk, J.A.G.M. (2009). Using the internet: Skill related problems in users/ line behavior. *Interacting with Computers*, 21(5-6): 393-402.
- Wachter, R.M., & Goldman, L. (1996). The emerging role of "hospitalists" in the American health care system. *New England Journal of Medicine*, 335, 514-517.
- Wachter, R. M., & Pantilat, S. Z. (2001). The "continuity visit" and the hospitalist model of care. *American Journal of Medicine*, 111(9B), 40S-42S.
- Wellikson, L. (2008). The hospitalist model: How it benefits you and your patients. *Journal of Family Practice*, 57, S10-S13.
- Wier, L. M., Levit, K., Stranges, E., Ryan, K., Pfuntner, A., Vandevoort, R., Santora, P., et al. (2010). *HCUP facts and figures: Statistics on hospital-based care in the United States, 2008*. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved February 3, 2012, from http://www.hcup-us.ahrq.gov/reports/factsandfigures/2008/TOC_2008.jsp
- Wier, L. M., Pfuntner, A., Maeda, J., Stranges, E., Ryan, K., Jagdish, P., . . . Elixhauser, A. (2011). *HCUP facts and figures: Statistics on hospital-based care in the United States, 2009*. Rockville, MD: Agency for Healthcare Research and Quality. Retrieved from <http://www.hcup-us.ahrq.gov/reports.jsp>

reVITALize Gynecology: Reimagining Apparent Feminism's Methodology In Participatory Health Intervention Projects

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ABSTRACT

As state and federal legislation continues to regulate women's reproductive health, it follows that the field of technical communication must continue to develop methodologies to facilitate stakeholder participation in health policymaking practices. Scott's (2003) scholarship on HIV testing and his "ethic of responsiveness" serve as a foundation for methods to broaden stakeholder participation. Yet, as current legislation attempts to regulate health decisions of female bodies, more explicit feminist methods inviting feminist perspectives to resist such anti-feminist legislation must be developed. Frost's (2013, 2014a, 2014b) apparent feminism serves as a useful methodology that builds upon Scott's methods to enact feminist interventional methods. This article provides a case study of the reVITALize Gynecology infertility initiative, a health intervention project that appears to function as an ally of apparent feminism. Applying an apparent feminist analysis to the initiative reveals limitations of the project's feminist commitments. To address the limitations of the initiative, the article articulates the need to expand apparent feminism's methodology by accounting for stakeholder participation throughout health intervention projects. This article posits that expanding feminist approaches to designing public stakeholder input is vital to upholding technical communication's commitment to advocacy and an ethical feminist commitment to facilitating spaces for all citizens to contribute as public intellectuals.

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Communication Design Quarterly. ACM SIGDOC, New York, USA.
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Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

Feminism, methodology, health intervention, reproduction, infertility, online health communication

INTRODUCTION

This article arrives at a particular moment in which women's reproductive health circulates at the center of many legislative agendas. The now infamous phrase "War on Women" serves as a ubiquitous reminder of political stakes in advocating legislation over women's bodies. A recent example of government attempts to regulate women's access to reproductive health resources can be found in North Dakota and Colorado's 2014 personhood resolutions, which reinforced pro-life legislative agendas toward making it nearly impossible for a woman to receive a legal abortion or to undergo fertility treatment such as in vitro fertilization. The recent rise of such legislative efforts suggests a need for researchers in the field of technical communication to articulate new methodologies to support the inclusion of stakeholder's, particularly that of women's, perspectives in health policies.

Cultural studies scholars working in technical communication and rhetorics of health and medicine have begun developing methodologies for including the perspectives of individual subjects impacted by such legislation actions. Specifically, Scott's (2003) research on the rhetorical work of HIV testing practices led to a call for technical communicators to enact an "ethic of responsiveness" as a means to incorporate multiple stakeholder perspectives in issues of public policymaking. Yet, as recent legislative attempts to regulate women's health decisions show, more explicit approaches for resisting such anti-female legislation must be developed. Frost's (2013, 2014) apparent feminism serves as a useful methodology that builds upon Scott's work to enact more explicitly feminist-

focused interventional methods. Tasked to make feminisms more apparent in contemporary politics, apparent feminists works with non-feminist allies who may not self-identify as feminist but whose actions align with the social justice spirit of feminism.

This article demonstrates the urgent need for better consideration of stakeholders in relationship to healthcare policy-making, and it builds on Scott's and Frost's work to show one approach for accomplishing this. In this article, I examine the reVITALize Gynecology infertility initiative, a recent project by the American Congress of Obstetricians and Gynecologists (ACOG) aimed at getting in better touch with stakeholders. I claim that the reVITALize initiative's organizers function as non-feminist allies that apparent feminist technical communicators could do productive work with. The initiative shows this both in its attempt to promote better health practices on the behalf of women and, importantly, in its commitment to incorporating the perspectives of a variety of stakeholders, including individual citizens. Ultimately this article serves as a call for technical communicators to build and take up feminist methodologies that intervene in the designs of policies and projects that regulate female health without inviting and valuing stakeholder participation.

LITERATURE REVIEW: FEMINISMS, TECHNICAL COMMUNICATION, AND RHETORICS OF HEALTH AND MEDICINE

The work of researchers in the fields of feminist theory, technical communication, and rhetorics of health and medicine is varied; however, this body of literature can be organized, in this context, by using biopower as an organizing principle. All these fields are concerned, to some degree, with Foucauldian biopower discourse and/or regulatory control over the individual subject (Bordo, 2003; Britt, 2000; Lay, 2000; Scott, 2003). Yet, contemporary trends in health communication that advocate for more online and participatory models to intervene in health practices (Kreps & Neuhauser, 2010) reveal a need for new research trajectories to explore and rethink the ways biopower operates in contemporary, participatory health intervention projects. To better understand how individual agency functions within participatory health interventions, researchers must begin to expand their purview beyond that of a biopower analysis of the individual subject to a more critical pondering of biopower's effect(s) on the design of trending health interventions. This work is particularly needed to examine female participation in these health initiative projects, given patriarchal medical practices that historically positioned women as objects (and not subjects) of their health (Martin, 2001). What follows in the remainder of this literature review is a theoretical situating of selected scholarship in feminisms, technical communication, and rhetorics of health and medicine using biopower as an organizing principles.

Foucauldian Biopower & Feminist Concerns with Health

Foucault's concept of biopower can perhaps be best understood as the discursive control and regulation of the perceived choice individuals have in making decisions in regards to their health. This perception of choice occurs as a result of biopower's control over cultural norms. That is, biopower not only operates at the level of the individual but simultaneously functions as a cultural discourse influencing what and how dominant cultures view as a 'norm.' Further, the concept of biopower emerged in the late twentieth century, just as Western cultures experienced technological

innovation with "numerous and diverse techniques for achieving the subjugation of bodies and the control of populations" (Foucault, 1978, p. 140). This was also a time "when sex, race, capitalism, and health were repoliticized within radical projects" (Murphy, 2012, p. 36). Thus, while biopower served as "as an analytical term that helps us to excavate histories of practices through which living-being was governed" (Murphy, 2012, p. 36), it also served as an extremely useful concept to be taken up by second wave feminists responding to contemporary issues of female health (i.e. Roe v. Wade (1973) ; Doe v. Bolton (1973), Planned Parenthood of Central MO v. Danforth (1976), Harris v. McRae (1980). Biopower thus evolved into a concept feminists used to connect concern over the regulation of female agency with the disciplinary practices of medicine and law.

Feminist Applications of Biopower

Responding to biopower's regulatory control and subjugation of women's bodies, a number of feminists have theoretically intervened in the erasure of female subjectivity (Balsamo, 1995; Haraway, 1991; Wells, 2010). Such feminist scholarship began to unpack the operationalization of biopower over women's agency, suggesting that while women may appear to have individual agency as "subjects or creators of knowledge, they also become objects of knowledge" (Lay, Gurak, Gravon & Myntti, 2000, p. 5). These feminist critiques led the way to theorizing the disciplinary history of medicine and its evolutionary dependence on technological innovations (such as the development of the forceps or the fetal monitor) to assist the female during the birth process, and therein produce the perception of a woman's reproductive tract as akin to "a birthing machine" (Dumit & Davis-Floyd, 1998).

Continued evidence of biopower's contemporary influence over the individual health decisions of women is found within discussions of risky health. For example, Lay et al. (2000) offer the case of pregnant women considering VBAC (vaginal birth after cesarean), explaining that frequently medical communities encourage women who gave birth via a cesarean to understand that "subsequent vaginal births will be high risk" (p. 5). The attachment of risk to a woman pondering a VBAC serves as an example of the continued operationalization of biopower in which "the individualization of risk leads to a form of governing in which individuals self-regulate" (Dubriwny, 2013, p. 28). In this way, discourses of risk when attached to discussions of health encourage patients to align themselves within the medical norms and perceived 'best practices' of health.

According to Dubriwny (2013) "the discourses of risk that surround women draw directly from a postfeminist logic and contribute to the crafting of a postfeminist healthy citizen" (p. 32). Calling attention to the conflated role of citizenship as attributed to neoliberal constructions of health and female identity, Dubriwny's work suggests how mainstream public health narratives continue to function within a Foucauldian biopower frame by "produc[ing] meanings about health issues and identities, or subject positions, for women that are reflective of dominant interests" (p. 6). Feminist researchers in the field of technical communication are thus poised to begin unpacking the narratives of citizenship, neoliberal constructions of health, female agency, and regulatory rhetorics of risk layered within disciplinary practices of health and medicine. These scholars can unpack the rhetorical agency often at play in contesting such grandiose narratives that often disregard the strategic negotiation and resistance of individual stakeholders.

The section that follows details previous feminist research in technical communication that has begun to critique discourses and practices that circulate within the grand narratives of health and medicine.

Biopower and Issues of Female Health in Technical Communication

Feminist scholars have taken up the issues of health and agency over women's bodies as seen in work on breastfeeding (Koerber, 2006, 2013), midwifery (Lay, 2000), pregnancy (Seigel, 2013) and birth plans (Owens, 2009, 2015). Such scholarship highlights the continued need for examining intersectional sites of gender and health. Yet, the work of this scholarship often functions as a critique to the larger discourses of medicine and health. That is, often feminist research residing at the intersections of health construct its research in exigency to the patriarchal and objectivist discourses and practices in medicine. Martin (2001) notes such a preoccupation in feminist health and medical research writing:

If women are one of those 'muted' groups, subject to a relatively great degree of oppression, such that they may not always know their oppression, object to it, or resist it, then we must have extremely sensitive ways of looking for evidence of women's consciousness of their situation and for a wide variety of forms of objection or resistance. (p. 22)

Martin's work echoes the feminist research trajectories of critiquing the grand, masculine-bias of health and medicine in technical communication and health communication. This work is and has been foundational in fostering research trajectories that fuse feminist theory with issues related to health and medicine. However, this article speaks to the need to expand the feminist interventional potential in health and medicine research. Given recent legislative agendas dictating medical procedures and practices with direct implication on women's bodies, technical and health communication scholars concerned about the relationship of individual agency in health and medicine must begin to expand our scholarly practices beyond critique.

Moves for feminist research to embrace health and medicine scholarship with less of an ethos of critique and more of an ethos of advocacy is beginning to be taken up. Gregory's (2013) analysis of the legislative agendas of fetal ultrasound images not only takes up such a research trajectory as an example of such scholarly interventional potential. That is, Gregory's work not only offers a new research landscape for the field of technical communication to consider but offers an ethical exigency to intervene in the contemporary politics that are continuing to regulate women's agency in decisions over their health.

Gregory's analysis shows how prenatal ultrasounds have been taken up by pro-life supporters and used to advance pro-life legislation. Gregory (2013) asserts "these iconic images have continued to shape political agendas that have far-reaching implications on women's health" (p. 7). Gregory points to how imagery operates as an ideological regulatory tactic. In Gregory's case, the passing of a law in which women seeking an abortion must undergo a transvaginal fetal ultrasound may on the surface be understood as merely medical routine, yet, when examined further demonstrates a built-in "check-point" in which the ultrasound functions as ethical, pro-life plea to view the image as a fetus. In pointing to pro-life's legislative co-optation of the role of the fetal ultrasound, Gregory

paves a path for feminist technical research, one that examines cases beyond issues of female agency to those of contemporary feminist politics that impact national legislation and medical practices. The example of the iconicity of the fetal ultrasound suggests areas of future research for feminist scholars in technical communication. More scholarly attention must be paid to moments in which legislation draws upon ideological and emotional tactics, appearing to respect individual agency in decisions of health, but nonetheless usurps the perception of choice in female decisions of health and medicine. To actively respond to such a new research trajectory requires the development of a feminist methodology capable of not just pointing to issues of unethical practice but of intervening in unethical and anti-feminist health policies. Gregory's work begins to call attention to new tactics to control the female body in decisions of health and medicine. Gregory's work also begins to yield an ethos of exigency, calling scholarly attention to the contemporary realities legislative acts have on female bodies. These new research trajectories are important and vital to actively situating our research in relation to contemporary issues of female health. However, this research continues to operate as, useful yet interventionally limited, case and discourse analysis. In exploring these new sites of female health and medicine, and particularly given its exigency as a linked to contemporary bodily politics, our research must evolve beyond critique and analysis into more of a directive interventional methodology.

Frost's (2013, 2014a, 2014b) apparent feminism may serve as a methodology capable of supporting this new feminist research trajectory. Specifically, the three tenets of apparent feminism (discussed in the next section) serve to connect issues in health and medicine to those of feminist commitments by actively intervening in the erasure of female bodies, thereby acting in resistance to the increasing regulation of female health and offering a contemporary feminist approach to intervening in biopower's regulatory rhetoric. Further, Frost's methodology serves as an accessible methodology not only for scholars of technical and health communication but for non self-identified feminists and health communication designers tasked with creating and implementing health interventions. In what follows I apply a modified version of apparent feminism to examine a recent health intervention project, reVITALize Gynecology, to offer an example of this approach's usefulness not only in articulating feminist commitments in health intervention but also in developing methodological tools for resisting biopower's regulatory rhetoric within online health intervention projects.

METHODOLOGY

A modified version of apparent feminism serves as a possible contemporary feminist methodology well suited for designing interventional moments to resist the influence of biopower in newly trending health initiatives. I propose the need to expand apparent feminism's methodology in order to better integrate public stakeholder participation throughout a given context, in this case the revitalize Gynecology initiative. While apparent feminism serves as a much-needed methodology to account for the erasure of marginalized bodies in healthcare communication and legislation, it fails to echo an exigency for maintaining a relationship with public stakeholders throughout the health intervention. Drawing on Scott's (2003) attention to stakeholders, I build upon apparent feminism by articulating the need to methodologically account for public, often marginalized, stakeholder participation in decisions of healthcare throughout the entirety of public health interventions, like reVITALize Gynecology.

Apparent feminism serves as a methodological frame for analyzing reVITALize Gynecology's infertility initiative in that it "recognize[s] and make[s] apparent the urgent and sometimes hidden exigencies for feminist critique of contemporary politics" (Frost, 2014a, p. 110). Designed to intervene in the unethical erasure of female bodies in legislative decisions, apparent feminism articulates an action-oriented feminist approach to issues of health/medicine, gender and legislation in technical communication. Specifically, apparent feminism functions as a three-prong methodology. One, apparent feminism operates in a postfeminist world to make more apparent the importance of feminism. Two, apparent feminism makes a case for feminism, by working with non-feminist allies who may not self-identify as feminist but whose actions align with the social justice spirit of feminism. Three, it critiques rhetorics of efficiency, and in doing, argues that efficient work must be useful to a diverse audience and must incorporate their perspectives.

My use of apparent feminism connects with Scott's (2003) methodology for incorporating stakeholder participation in policy conversations. Scott's call to incorporate stakeholders into decisions about public policy emerges out of his rhetorical-cultural examination of HIV testing practices. In refocusing rhetoric to move beyond "explain[ing] how rhetoric works," a rhetorical-cultural frame begins to "intervene in problematic rhetorical-cultural practices" (Scott, 2003, p. 33). By examining cultural ideologies embedded within HIV testing practices, Scott suggests "how rhetoric can function as biopower, wrapped up in larger

power alignments that shape bodies and forms of embodiment" (Scott, 2003, p. 229). Rhetoric, when operating within a biopower discourse, contributes to disciplinary and regulatory rhetorics influencing cultural interfaces and power alignments and regulating individual agency.

To combat the regulation of individual agency, Scott proposes an "ethic of responsiveness." Functioning around three tenets, the ethic recognizes "[1] interdependencies among people, [2] value[s] difference, and [3] seek[s] justice through inclusive policymaking for ensuring better testing procedures" (Walters, 2005, p. 849). Implementing ethic responsiveness to policymaking decisions thus "involves more than making paternalistic assumptions about or interpretations of others' needs" (Scott, 2003, p. 233). To best understand the needs of others requires policymaking to invite and facilitate participation through the inclusion of a broad range of stakeholders.

Apparent feminism's tenet to critique rhetorics of efficiency supports Scott's articulation of the ethical need to include public stakeholders. Frost's explicit attention to feminism, however, expands Scott's ethic to more directly relate to policy issues that impact female bodies. That is, apparent feminism highlights feminist commitments in a postfeminist society and thus positions itself as a methodology that can explicitly adopt a feminist agenda to intervene in unethical and anti-feminist legislation. I thus apply a version of Frost's apparent feminist methodology—as informed by Scott—in order to create a new framework. This framework can help researchers to understand

Table 1: Definitions as published online.

Table 1 Published definitions of infertility.	
Organization	Definition
National Institute for Health and Clinical Excellence guideline 2004 ^a	Infertility should be defined as failure to conceive after regular unprotected sexual intercourse for 2 years in the absence of known reproductive pathology
ASRM 2008 ^b	Infertility is a disease defined by failure to achieve a successful pregnancy after 12 months or more of regular unprotected intercourse Earlier evaluation and treatment may be justified based on medical history and physical findings and is warranted after 6 months for women over age 35 years
International Committee for Monitoring Assisted Reproductive Technology (ICMART), and World Health Organization 2009 ^c	Infertility (clinical definition): a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse
Demographic definition ^d	Inability of a non-contracepting, sexually active woman to have a live birth

^aNICE guideline (UK) (2004).
^bPractice Committee of the American Society for Reproductive Medicine. Fertil Steril 2008;90 (5 Suppl):S60.
^cZegers-Hochschild et al. (2009).
^dLarsen (2005).

Examples of data elements with proposed definitions:		
Adolescent and Benign Gynecology <ul style="list-style-type: none"> Atrophic Vaginitis Functional Ovarian Cyst Lichen Sclerosus Pelvic Inflammatory Disease (PID) Prepubertal Vaginal Bleeding 	Breast and Cervical Issues <ul style="list-style-type: none"> Breast Density Cervicitis Endometrial Hyperplasia Human Papillomavirus (HPV) Infection Mastodynia 	Infertility <ul style="list-style-type: none"> Amenorrhea Conception Fertilization Embryo, Fetus , Zygote Ovulation Induction Polycystic Ovarian Syndrome (PCOS)
Pain and Bleeding Issues <ul style="list-style-type: none"> Abnormal Uterine Bleeding Heavy Menstrual Bleeding Bladder Pain Syndrome / Interstitial Cystitis Vulvar Pain Syndrome/Vulvodynia 	Reproductive Planning <ul style="list-style-type: none"> Ectopic Pregnancy Induced Abortion Long-Acting Reversible Contraception (LARC) Pregnancy Pregnancy of Unknown Location (PUL) 	Urogynecology and Menopause <ul style="list-style-type: none"> Menopause Overactive Bladder Pelvic Organ Prolapse Premature Menopause Urinary Incontinence Vulvovaginal Atrophy

Figure 1. This screenshot, taken from ACOG's website, captures the various health topics stakeholders were to take up at the National Stakeholder Conference in 2013. For the purposes of this article, I limit my examination to the topic of infertility.

the extent to which a non-feminist ally may support interventional opportunities for resisting the erasure of female or feminist-oriented positions in the decisions and discussions of standardizing, formalizing and regulating issues of female health.

THE PROJECT: REVITALIZE GYNECOLOGY

The ACOG, a 501(c)(6) organization, is the nation's leading group of physicians providing healthcare for women. As a private, voluntary, nonprofit membership organization of approximately 55,000 members, ACOG strongly advocates for quality healthcare for women, maintains the highest standards of clinical practice and continuing education of its members, promotes patient education, and increases awareness among its members and the public of the changing issues facing women's healthcare.

In December 2013, the American Congress of Obstetricians and Gynecologists (ACOG) debuted the reVITALize Gynecology infertility initiative. In line with ACOG's mission, the primary aim of the reVITALize Gynecology initiative was to gather various stakeholder perspectives to standardize definitions related to clinical data in gynecology. To best explain the various phases of the reVITALize Gynecology initiative, I discuss the project below in three sections: Phase I: The National Stakeholder Conference, Phase 2: Soliciting Public Commentary, and Phase 3: Revising & Finalizing Data Definitions.

Phase I: The National Stakeholder Conference

Given ACOG's mission, the primary aim of the reVITALize Gynecology initiative was to gather various stakeholder perspectives

to standardize gynecology clinical data definitions. Existing definitions of infertility lack uniformity. Specifically, there exists a lack of consensus among organizations of when an individual meets criteria to be diagnosed with infertility. Table 1 (cited in Gurunath, Pandian, Anderson, & Bhattacharya, 2011) details the individual discrepancies of infertility definitions amongst global reproductive organizations.

These discrepancies amongst infertility definitions provided motivation and exigency for ACOG's reVITALize Gynecology project to create standardized infertility definitions.

Given the desire to incorporate multiple stakeholder perspectives into the process of standardizing definitions, the initiative was debuted at ACOG's national stakeholder conference in December 2013 in front of a range of those stakeholders. These included representatives from the Association of Women's Health, Obstetric and Neonatal Nurses; the Centers for Disease Control and Prevention; Society for Reproductive Endocrinology and Infertility; RESOLVE, The National Infertility Association; and the Planned Parenthood Federation of America.

During the conference organizational stakeholders were grouped into workgroups, working collaboratively to review and revise selected definitions provided by ACOG. Not all workgroups revised all definitions, but all workgroups were able to reject definitions that were revised by workgroups. At the conclusion of the conference, at least 85% attendee support was reached on 78 definitions across the six workgroups. Data elements reaching 85% support were moved forward for public comment (see Phase II that follows). Figure 1 illustrates the data elements with proposed definitions that

were generated as a result of the December conference initiative. In all, 121 refined data element definitions were approved for release during Phase II.

Phase 2: Soliciting Public Commentary

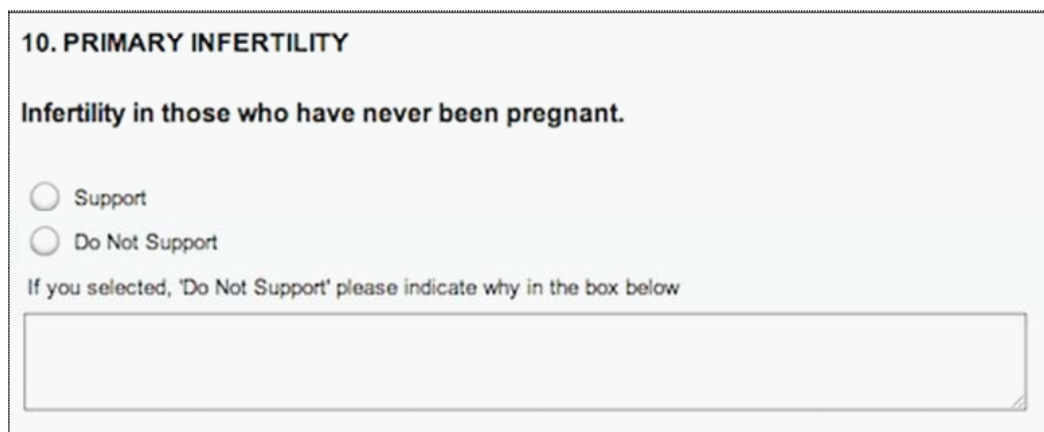
Committed to gathering the views of multiple stakeholders, ACOG distributed the 121 definitions proposed by attendees at the National Stakeholder Conference. Using SurveyMonkey, ACOG developed a survey in which everyday citizens could review and revise the definitions proposed by attendees at the National Stakeholder Conference. The survey, which focused on infertility, was posted on the ACOG's website and was also circulated through a variety of partner alliances who participated at the National Stakeholder Conference.

The survey consisted of twenty-six medical terms with a definition and multiple-choice box allowing participants to choose "Support" or "Do Not Support." Important to the design of the survey was the inclusion of the text "If you selected, 'Do Not Support' please indicate why in the box below." The appendix contains a full version of this infertility survey circulated by ACOG. Figure 2 and 3 illustrate the phrasing of a question and are examples of the

survey design as well as an indication of the types of terminology needing definitional standardization. Important to note about the survey is its simplicity and directness, which supports the three tenets of apparent feminism. The survey design and significance of the selected medical terminologies are discussed later in the discussions section of this article.

Phase 3: Revising & Finalizing Data Definitions

ACOG's website reports that members are now carefully reviewing all of the public comment responses and making revisions to the definitions to ensure usability and clarity. All revisions proposed based on the online survey were reviewed once more by the previously established workgroups at the 2014 National Stakeholder conference. Once revised, the definitions will be submitted for legal review and College Executive Board endorsement. ACOG expects that an Executive Summary of the initiative along with the finalized definitions will be published in *Obstetrics & Gynecology* in 2015. When finalized, the definitions will also be made available on the ACOG website. It is anticipated that these results will also impact the legislative agenda of ACOG and the Women's Health Registry Alliance.



10. PRIMARY INFERTILITY

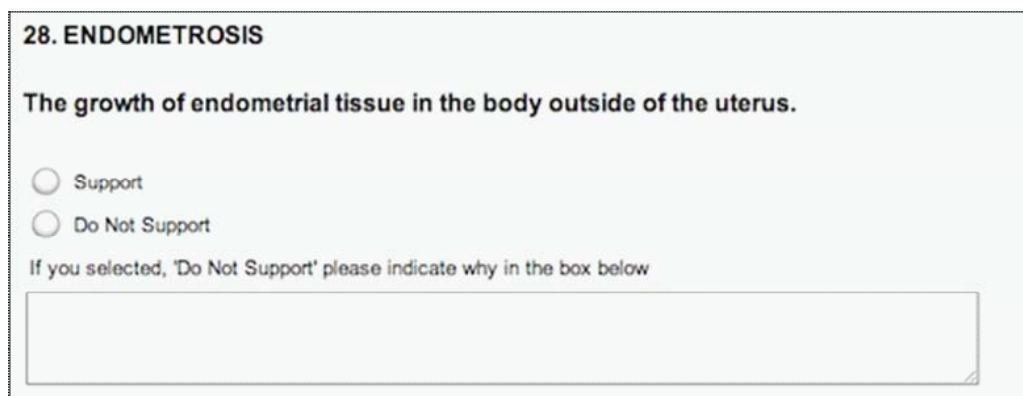
Infertility in those who have never been pregnant.

☐ Support

☐ Do Not Support

If you selected, 'Do Not Support' please indicate why in the box below

Figure 2: A screenshot of a question from ACOG's infertility survey asking public stakeholders to indicate their support or lack of support with how primary infertility is defined.



28. ENDOMETRIOSIS

The growth of endometrial tissue in the body outside of the uterus.

☐ Support

☐ Do Not Support

If you selected, 'Do Not Support' please indicate why in the box below

Figure 3: A screenshot of a question from ACOG's infertility survey asking public stakeholders to indicate their support or lack of support with how endometriosis is defined.

DISCUSSION

While not explicitly making apparent feminist issues of health, the reVITALize Gynecology infertility initiative does appear to function as a non-feminist ally to apparent feminism in the following ways. One, as a project overseen by ACOG, reVITALize Gynecology promotes a sense of women's health advocacy and the creation of best practices in regards to women's health legislation. This aligns with apparent feminism's tenet of making feminism more apparent in a post-feminist world. Two, while the initiative promotes issues related to women's health advocacy, it does not explicitly make the claim that it is feminist initiative. In this way, reVITALize Gynecology's infertility initiative functions as a non-feminist ally concerned with the spirit of feminism, another key component to enacting apparent feminism as a methodology. Three, the initiative aims to incorporate a variety of stakeholders, supporting apparent feminism's belief in the incorporation of diverse stakeholders. Committed then towards enacting best practices in contemporary issues of women's health, ACOG's reVITALize Gynecology infertility initiative upholds a feminist commitment to advocating on behalf of women. Advocating legislative agendas that represent and promote best practices in regards to women's health issues is a practice that makes more apparent issues of women's health and feminism to larger, male-dominated governing bodies. Further, the reVITALize Gynecology infertility initiative was designed as a critique of rhetorics of efficiency. Stakeholder participation was broadened by soliciting everyday citizens to publicly respond to the revised definitions and by creating a survey that attempted to capture citizens' understandings of definitions. Broadening stakeholder participation allowed for finalized definitions that incorporated citizen knowledge and validated their participation and knowledge as valuable and important to the project.

Applying Apparent Feminism to reVITALize Gynecology's Initiative

reVITALize Gynecology connects thus to apparent feminism's three commitments:

First, apparent feminism operates in a postfeminist world to make more apparent the importance of feminism, and reVITALize Gynecology's infertility initiative supports this claim by advocating on behalf of women's health and making more apparent the need for legislation to recognize and protect best practices regarding female health. Focusing on the task of revising definitions related to female reproductive health supports apparent feminist efforts to advocate on behalf of women. For example, defining medical terms related to female infertility is a task needed for advocating on behalf of women and women's health rights. While tasks to define

infertility and terms associated with infertility appear perhaps inconsequential to intervening in unethical stances on female health, an understanding of the medical professions' lack of consensus on definitions of infertility shows the direct implications on legislation dictating and defining concepts such as "embryo." Figure 4 depicts reVITALize Gynecology's survey inquiring stakeholder insight on the terminology of "embryo."

Achieving consensus on "embryo" is important not just for medical professional understanding, but legislatively as well. The recent turn in state and national legislation to take up issues of body politics indicates a new level of exigency to develop informed definitions that take into account a variety of stakeholder perspectives. Further exigency for reaching agreement on how "embryo" should be defined can be found in North Dakota and Colorado's personhood ballot proposals. These proposals attempt to define what constitutes an "embryo." In the case of the proposed ballots, legislators in both North Dakota and Colorado were advocating for state legislation to move forward with a definition of "embryo" that would recognize life at conception and give legal rights to newly fertilized microscopic embryo. Thereby making extremely difficult in these two states for a woman to receive a legal abortion or to even undergo in vitro fertilization so as to conceive a child. While these voters in these two states rejected the proposed personhood ballots, it has influenced additional states (Mississippi, Montana, New Hampshire, South Carolina, Virginia, and Washington) to pursue proposing similar personhood initiatives. The choice of reVITALize Gynecology's infertility initiative to list "embryo" as a definition needing to be clarified and having consensus amongst multiple stakeholders will influence such legislation attempting to regulate options women can pursue for reproductive health.

Developing consensus on such definitions that are at the heart of anti-feminist legislation suggests ACOG and its reVITALize Gynecology infertility initiative functions as an ally to apparent feminism. That is, the second tenet of apparent feminism makes a case for working with non-feminist allies who may not self-identify as feminist but whose actions align with the social justice spirit of feminism, and reVITALize Gynecology's infertility initiative does this by acting as an organization devoted to advocating on behalf of women but not explicitly identifying as a feminist organization. Important to supporting this claim is highlighting that as a project of ACOG and the Women's Health Registry Alliance, the results of reVITALize Gynecology will have an impact on the lobbying decisions and research presented to legislation by ACOG. The reVITALize Gynecology infertility initiative project functions

13. EMBRYO

The product of the division of the zygote up to 10 weeks' gestational age (8 completed weeks after fertilization).

☐ Support

☐ Do Not Support

If you selected, 'Do Not Support' please indicate why in the box below

Figure 4: A screenshot of a question from ACOG's infertility survey asking public stakeholders to indicate their support or lack of support with how embryo is defined.

then as a model then of the importance of allies participating in the making more apparent feminist issues, especially those issues that attempt to intervene in the unethical erasure of female positions on topics of women's health.

Finally, the third tenet apparent feminism critiques rhetorics of efficiency by advocating for the incorporation of diverse stakeholders, and reVITALize Gynecology's infertility initiative supports this claim through their decision to design the project so as to incorporate a variety of stakeholders throughout the definitional process. All three phases of the project incorporate the participation of various stakeholders. For example, the first phase specifically focuses on the incorporation of representatives from allied organizations of ACOG. Representatives from these organizations participated in the initial review and revision of provided definitions related to female reproductive health. The second phase of the project directs its attention to everyday stakeholders, inviting them to revising proposed definitions via the online survey. This online survey was circulated through the Facebook sites of organization's that participated in the first phase of the project attempted to solicit insight from a range of everyday stakeholders. Finally, the third phase returned its participatory focus on to the initial representatives that engaged in the first phase of the project. Phase three asked the organizational representatives to review the proposed revisions made by everyday stakeholders in the online survey. reVITALize Gynecology's efforts to engage the multiple stakeholders, I argue, upholds apparent feminism's, roots in Scott's ethic of responsiveness, advocating for commitments to broadening stakeholder participation in policymaking practices.

While reVITALize Gynecology adopts the commitments of apparent feminism, further analysis into the limited role of the citizen participant in the project yields concern for how to best improve and design methodology's to approach citizen's as valued participants in knowledge-making. This position, I argue, is vital to extending the interventional work of apparent feminism.

Limitations of reVITALize Gynecology's Methodological Design

Analyzing reVITALize Gynecology's infertility initiative via an apparent feminist methodological frame reveals limitations of their initiative. While reVITALize aims to support women's health agendas and to encourage increased stakeholder participation through online interfaces, the rhetorical work of the initiative's methodology reveals the false apparency in which citizens' feedback were encouraged yet never fully implemented into the initiative's research process. reVITALize Gynecology's infertility initiative appears to uphold apparent feminism's work to disrupt the regulatory biopower discourse enacted within legislative reproductive health issues. Yet, further analysis of the strategic incorporation of stakeholders in the initiative's project suggests that ACOG, while attempting to advocate for better practices in regards to women's health, actually in some ways reinforces and perpetuates biopower. The incorporation citizen stakeholder participation was limited to only one stage of the larger health initiative. Given this, the design of the initiative to only incorporate public stakeholder participation at one moment of the methodological project, rather than throughout the entirety of the initiative, raises rhetorical kairotic concern.

While the second phase of the reVITALize Gynecology infertility initiative broadened stakeholder participation by soliciting everyday citizen participation, the first and third phases of the project raise

questions of the extent to which the views of citizen participants were incorporated into the finalized definitions. During the first phase of the project, everyday citizens were provided no opportunity to select and identify reproductive health definitions needing revision and standardization and they were never invited to participate as part of established workgroups. For example, during the third and final phase of the project, workgroups were tasked to review and determine how to possibly best implement the results from the online survey (collected during the second phase of the project). Yet, during the third phase of the project, citizens who participated in the online survey were never invited to review the public data, nor reconcile it with the proposed definitions from the workgroup results in phase one. Further, the definitions appearing on the public survey are written in medical jargon. While the task to standardize infertility definitions will be used for clinical and research practices, the infertility definitions will also be used by the general public. The need to make definitional terminology accessible to all stakeholders was not addressed. As such, while reVITALize Gynecology did provide a moment for citizens to contribute to the project, the overall methodology of the project strategically limited citizen participation.

Understanding the failure to incorporate citizens in the third phase of the project and the survey's perpetuation of medical jargon is important. The third phase of the project is tasked to standardize and finalize all definitions so as to assist ACOG and the Women's Health Registry Alliance with preparations for proposed legislation. The proposed legislation will have direct impact on everyday citizens; yet, the methodology of the project fails to allow full citizenship participation.

Such points complicate reVITALize Gynecology's infertility initiative to include public stakeholders in the project. While the online public survey appeared to value public input, particularly that of infertile women, the rhetorical design of the larger project regulated the agency of the public. Instead, larger organizations with greater power appear to be ACOG's priority stakeholders. These larger organizations are affiliated with medical providers and insurance and pharmaceutical companies. These organizations have had input on the entirety of the project since its conception and will continue working with project until its completion – proposing definitions that appeared on the survey. Further, these companies frequently use and have knowledge of highly medicalized definitions. These larger organizations – situated within medical and scientific disciplines – influenced a rhetorical design that reinforced discourses of biopower that work to normalize health practices and regulate individual agency over those practices. Understanding the relative lack of power public stakeholders have in both the initial and final stages of the project suggests reVITALize Gynecology provides a false apparency of public participation.

Revising the medical language of the survey, incorporating public participation throughout the entire project, disclosing how data generated from the survey will be reviewed and used to standardize definitions could have the rhetorical design of reVITALize Gynecology's methodology. These proposed revisions would require a deep changes to the project's methodology. Currently, the project only provides a limited space for public participation, and rhetorical examination of the methodology reveals how public participation was regulated through biopower rhetoric. What is evident from the reVITALize Gynecology study is how methodologies of design that determine when and how participants will interact with health interventions can reinforce regulatory rhetorics and limit the participatory nature of the initiative.

IMPLICATIONS

reVITALize Gynecology's infertility initiative is a complex case. The initiative appears to function as a non self-identified feminist ally of apparent feminism by advocating for better female health practices and soliciting the input of everyday citizen stakeholders. Yet, reVITALize Gynecology also fails to fully embrace its feminist methodological potential by limiting the moments in which public stakeholder participation could occur. Further, the application of apparent feminism to reVITALize Gynecology's infertility initiative reveals a potential weakness of apparent feminist methodology. Specifically, applying an apparent feminist frame to reVITALize Gynecology does not account for kairotic gaps, that is, questions about when and how often public stakeholder participation should be incorporated into such feminist health initiatives. Therefore, the question remains how might a health intervention like reVITALize Gynecology best uphold its mission to advocate for better practices while accurately representing and fully incorporating everyday stakeholders into the project?

What follows is a proposal for how to begin addressing such a large, yet timely question. Specifically, I offer the proposal for technical communication scholars to embrace methodological training to critique unjust or marginalized health practices and initiatives and to also apply our scholarly knowledge as a way to strategically intervene and design better health interventions. I propose that feminist methodologies are a particular ally to assist in such interventional scholarship. However, there is need to evolve feminist methodologies beyond that of critiquing unjust medical/health practices and begin rebuilding and reinventing new conceptions of participatory stakeholder practices specifically to research in health and medicine. Apparent feminism's methodology begins to take steps towards more interventional action, and I offer more specific implications for how to continue to develop the interventional methodological potential of apparent feminism. To do so, I propose a reimagining of feminist methodology, encouraging its use beyond critique and the inclusion of traditionally marginalized voices, to that of having the potential for more directive intervention. Support for such a proposal comes from locating gaps in feminist methodology. Reimagining the ways in which we as researchers situate ourselves in relation to feminist research practices, embedding ourselves into medical scenes and health initiative sites, may better enact tenets of apparent feminism. By proposing this call to reimagining feminist methodology, I move then into a discussion of how developing more rhetorical kairos in apparent feminism's methodology may better aid its participatory and interventional potential. Finally, I broaden the scenes of such potential by offering up how patient care may be enhanced by facilitating more health initiatives that support full stakeholder participation. Of course, in addressing such a large question, I encourage the field of medical rhetoric and technical communication to ponder additional purposes and avenues of interventional methodologies.

Reimagining Feminist Methodologies in Participatory Health Interventions

The case of reVITALize Gynecology highlights how health initiative project's, particularly given contemporary concern over the erasure of female perspectives in decisions of women's health is on the rise, appears to support tenets of apparent feminist methodology. Yet, upon closer analysis of the case, I have argued that simply appearing to advocate on behalf of women's health issues, simply does not do enough to welcome and incorporate the voices of the everyday female stakeholders. This case thus points to the need

to revisit feminist methodologies in relation to participatory health interventions and calls for the further development of feminist methodologies as not only functioning as a move to advocate for more just and inclusive moments in which everyday, often marginalized female, perspectives are incorporated and into a more robust methodological, feminist informed framework to actively reinvent the interventional possibilities of feminist methodological work.

The exigency to reinvent feminist methodologies is rooted in the value inherent to feminist methodologies, which focuses on issues of female agency, power and representation. In fact, much feminist research attempts to intervene in unethical actions within patriarchal knowledge systems, such as health and medicine, by challenging these positions with the inclusion of marginalized and often-silenced voices. To engage in such research, feminist methods have stressed a focus on the researcher's reflexivity and subjectivity in relation to other research participants. This focus on the researcher reflexivity arises from Reinharz's (1992) assertion that an overarching goal of feminist methodologies is to "[make] the invisible visible, bringing the margin to the center, rendering the trivial important, putting the spotlight on women as competent actors, understanding women as subjects in their own right rather than objects for men" (as quoted in Lay, 2002, p. 166). In this way, feminist perspectives of research value the role of the research participant and thus strive to "make visible those lives and audible those voices that might be neglected in traditional research studies" (Lay, 2002, p. 168).

The case of reVITALize enacts much of the feminist commitment to valuing the research perspective. Evidence of this can be seen particularly in phase two of the initiative, in which everyday stakeholders were invited to revise definitions based upon their own understandings. However, to Lay's point, the inclusions of the research participant requires the researcher's self-reflexivity. Phase three of the reVITALize project appears to function as a stage for researcher's to reflect on the revised definitions generated by the everyday stakeholders via the online survey. Such a measure positively suggests reVITALize Gynecology initiative functioning as an alley of apparent feminism. However, what such a methodological commitment does not account for is how the third phase shifts power and displaces the idea of expert back on to the organizational representatives, whom it should be noted have commitments beyond the everyday stakeholders. This is a kairotic limitation of feminist methodologies. That is, while feminist methodologies explicitly apply methods for including and advocating the perspectives of marginalized stakeholders in research, addressing when and how often the researcher incorporates the research participant into the research project is not clear.

This analysis thus suggests a need to reinvent a feminist methodology that not only appeals to incorporating everyday stakeholder participation but also actively accounts for a more participatory relationship. While feminist methodologies inherently focus on the need for participants voices to be not only included by "amplified and represented respectfully" (Royster & Kirsch, 2012, p. 34), the mere inclusion of these voices does not always actively intervene in larger hegemonic systems and discourses of authority. Feminist methodologies have the potential to reinvent themselves to develop relationships that actively positions the everyday stakeholders as experts in relation to organizational representatives, often of whom have direct ties to medical, legislative and pharmaceutical stakeholders. Teston, Graham, Baldwinson, Li, and Swift's (2014) suggestion to

shift understandings of expertise “away from an anecdote/date divide and toward ontological multiplicity” (p. 166) is one such model that echoes sentiments of feminist methodologies’ commitments to voicing traditionally marginalized stakeholder perspectives.

To be clear, the intent of this article is not to critique the inadequacy of feminist methodologies in health and medical research. As noted previously in the literature review, much contemporary feminist, health and medical scholarship (De Hertogh, 2015; Gregory, 2013; Owens, 2009, 2015; Seigel, 2013) has provided insight into the individual agency and rhetorical strategy of female health issues. However, the task of this article is to reimagine the interventional potential of feminist methodologies. Much feminist methodological work has historically been centered on the critique of Western medical practices that have erase female agency or it has suggested alternative practices female patients can enact to subvert patriarchal dominance in medical discourse and health practices. Such an example can be found in Lay’s (2000) work on the rhetorics of midwifery, in which she points explicitly to how women’s midwifery practice positions them “to face a society that may discount their experiential and embodied knowledge...[because] they confront dominant professions that claim authoritative knowledge about women’s bodies and, through discourse, successfully maintain that claim” (p. 172). Therefore, much of feminist methodological scholarship has advocated for more female orientated approaches towards discussions of health and medicine, in light of the systems of Foucaudian biopower that often limit female stakeholder perspectives and agency.

However, the case of reVITALize suggests an alternative potential of feminist methodology in health and medicine. Rather than function merely as a critique of unjust health/medical discursive practices and/or provide an alternative narrative to the ways in which female patients employ rhetorical strategies to enact to insert their own agency and/or power, the case suggests reimagining the locations of medical and health research. While feminist methodologies are insightfully used to bring to light the often marginalized practices of underserved and/or underrepresented stakeholders, I argue that reimagining the locations and positionalities of our feminist research may reinvent the possibilities of what feminist research may accomplish. That is, I urge feminist researchers concerned with the increasing regulatory rhetorics to move beyond the scholarly-confines of our academic walls and begin to reimagine our research as embedded in communities. As feminist researchers actively working alongside medical and health projects, we may reinvent the potential of feminist methodologies – no longer operating as a critique or suggesting the rhetorical strategies of marginalized stakeholders, but as a methodology that can restructure the ways in which stakeholder participation is invited and used in health initiative projects. This reimagining of the location of feminist methodologies offers a more interventional, participatory tool shifting divisions of power and authorities knowledge-making in health and medicine.

Some of the re-imagining that I envision has already begun. In *Our Bodies, Ourselves and the Work of Writing*, Wells (2010) enacts a feminist participatory methodology to write and that approach speaks to the reimagining of where our health and medical research resides by showing how women may learn about female anatomy and resist dominant medical practices. Yet Wells’s work, while a valuable piece of feminist and medical literature, has yet to be fully adopted within larger practices of health and medicine. In many ways, the book remains positioned on the periphery, viewed

as an “alternative” view of female perspectives on health and medicine. This continued positioning of feminist methodology as an alternative to dominant practices of health and medicine is a rich location for future research, particularly for those whose research attempts to advocate for the everyday stakeholder. Take for example the reVITALize case, while this case appears to enact feminist methods and value the everyday stakeholder perspective, it remained a project that valued the organizational representative as an expert, providing the final judgment on definitions, versus the everyday stakeholder who was positioned as having less expert authority. However, this positioning of expert knowledge-maker versus everyday participant could have been challenged or reimagined if a researcher consulted with the project. Overall, what reVITALize Gynecology highlights is the need to realize the interventional possibilities of our methodological training. Feminist methodologies can provide much more than critique and the surfacing of marginalized voices. Rather, researchers committed to feminist methodologies and embedded in communities can enact interventional strategies to better incorporate and shift the perspectives of everyday participants. Readers will likely critique the additional rhetorical labor involved in relocating the health and medical rhetorician into the community. Such is a fair critique. This will take additional time and additional efforts to situate such work within university expectations. Yet, if we are to take seriously whom our research is for, especially within an apparent feminist context, then we must critique the rhetorics of efficiency – not just for the research participants but for the stakeholders, we as researchers are accountable to. To strengthen the interventional possibilities of apparent feminism, this methodology must support a reimagining of the location of the researcher – positioning themselves amongst the communities of stakeholders.

The Need for Kairos in Apparent Feminism

Developing a kairotic component to apparent feminism may serve as a more interventional, postfeminist contemporary methodology for participatory health projects. That is, an explicit attribute of apparent feminism’s methodological design is it’s an interventional methodology that actively positions itself to work alongside non self-identified feminist allies to critique the silenced participation of marginalized stakeholders. For sure the case of reVITALize Gynecology points to apparent feminism’s third methodological tenet by incorporating marginalized stakeholder perspectives within the project during the second phase of the initiative. Yet, the case study also points to the methodological weakness of apparent feminism in that it does not explicitly address the kairotic moment of when and how often these stakeholders are integrated into the project. As such, while apparent feminism’s third tenet, critiquing the rhetorics of efficiency, is essential to initiating interventions in unethical legislation and health decisions, a more explicit articulation is needed in the methodology to articulate when and how to fulfill feminist commitments to “amplify” participation of underrepresented stakeholders. Further, this task to consider when and how often stakeholders are included in such health intervention programs is key to extending apparent feminism as an updated, feminist methodological response to Scott’s (2003) “ethic of responsiveness.” This is needed if apparent feminism is to offer a more explicit feminist interventional to address contemporary trends in regulatory anti-feminist politics.

In this way, while apparent feminism offers in many ways a ‘how to’ enact feminist commitments in a postfeminist society, more work must build upon apparent feminism’s usefulness to better

capture and represent its critique of the rhetorics of efficiency. Apparent feminism's critique of hegemonic systems of health and biopower discourses that often silence marginalized perspectives begins to disrupt the stability of these systems and discourse. Yet, for apparent feminism to be more actively taken up – not only in research – but actively applied as a contemporary “real world” interventional strategy, it must move towards advocating for marginalized stakeholder participation to take place throughout the entirety of health intervention projects.

Enhancing Patient Care Through Participatory Health Interventions

Understanding the relationality between the public stakeholder and the methodological design of health interventions reveals concern for researchers in rhetorics of health and medicine and technical communication and practitioners tasked with designing participatory health communication projects. Incorporating underrepresented stakeholders throughout the reVITALize Gynecology initiative challenged the outcomes of the project and also in the determination of which definitions needed to be standardized. This process enacts what Keränen (2014) calls “a rhetorical model of publics,” which “presents an inclusive vision of health and medicine as networked, public exchange and encourages us to see participants in health and medical processes as more than consumers, clients, and patients” (p. 105). The active incorporation of these everyday stakeholders in the reVITALize project shifts the location of expertise and as Keränen (2014) suggests “reinforces the health and medical humanities’ concern for the humane and distinctly human dimensions of health and medicine” (p. 105). Readers, no doubt, will question the practicality of incorporating more stakeholder perspectives, given the increasingly limited budgets and time available to enact such projects. Such questioning is fair and appropriate. However, given the increased networks (Facebook, Twitter) and tools (SurveyMonkey, Zoomerang) available to invite everyday stakeholder participation, researchers should not simply deflect such a proposal. Instead, researchers and practitioners should consider alternative approaches to incorporate stakeholder perspectives in healthcare communication. More success with participatory health interventions may be found by enacting an apparent feminist methodology that demands public stakeholder participation throughout the project – positively impacting not only healthcare communication but overall patient care.

CONCLUSION

In this article, I have argued that given the rise in legislative efforts to control, mandate, and/or stipulate female access and agency over decisions of health, more feminist methodological methods must be taken up by those working in technical communication and health communication. I have suggested that apparent feminism, situated alongside Scott's ethics of responsiveness, serves as a contemporary feminist methodological model useful to expanding feminist methodologies beyond work that critiques inadequate and unjust systems and begins to develop stakeholder participatory relationships and practices within decisions of health. The inclusion of everyday stakeholder participants in decisions of health is a vital step to intervene in Foucauldian biopower systems and discourses of medicine and health. The case of reVITALize Gynecology demonstrates the usefulness of apparent feminism to these types of interventional possibilities. Specifically, by developing a more fully articulated sense of *karios* that fully integrates the participation of

everyday stakeholders in all points of the decision-making process, The reVITALize Gynecology project demonstrated that these stakeholders were only invited to participate during a particular point of the decision-making process, limiting their agency and the overall contributions they made to the standardization of infertility definitions. As such, while reVITALize Gynecology appeared to mimic the three tenets of apparent feminism (making feminism more apparent in a post-feminist world, working alongside non-feminist allies, critiquing rhetorics of efficiency), the methods in which reVITALize Gynecology invited public participation raises issues with the overall intention and mission of the initiative's attempt to advocate for best practices in topics of female health.

What remains is a need for further consideration of how health initiatives can strengthen their overall methods to better support their mission, as well as represent the very stakeholders on whose behalf they advocate. This is especially the case with health interventions designed to invite traditionally marginalized perspectives into health research initiatives. If technical communicators are in the position to construct institutional spaces for citizens to contribute knowledge and thereby design projects that “facilitate user/citizen participation as legitimate knowledge producers and decision makers” (Grabill & Simmons, 1998, p. 437), then those tasked with designing and implementing health intervention projects must evolve their research processes beyond stance and awareness to actively integrating marginalized stakeholders throughout such projects. The limitations of stakeholder participation in the reVITALize Gynecology project support such a cause and reminds us that our research scopes must extend beyond the design of health initiatives to more directly address the public impacts of the design decisions. Production and research oriented in this way demands that we, as researchers, shift our own view to see ourselves as members of the public, who can capably intervene to improve unjust, or potentially unethical, health initiatives that fail to rhetorically listen to their multiple stakeholders.

Enacting a feminist methodology requires an active, self-reflection of the researcher – always reflecting on the relationships between themselves and their research participations and this allowing us to see ourselves differently. This self-reflective methodological stance also requires a new conception of rhetorical labor, reconceiving and making new arguments about where and how our research, embedded within communities, matters and can be accounted for within university walls. Such an expanded view reimagines the sites, locations, and potential interventional possibilities of health and medicine research. As further health intervention projects are developed, healthcare communicators and researchers in the field of rhetorics of health and medicine as well as researchers and practitioners who design health interventions and create patient communication materials must better consider the “how” of such interventional projects. Feminist methodologies, particularly that of apparent feminism, serve as useful models to expand and reimagine such interventional possibilities research in health and medicine holds.

ACKNOWLEDGEMENTS:

I would like to thank the anonymous reviewers of this article who offered thoughtful comments. Most of all, I owe a huge thanks to *CDQ* editors Lisa Meloncon and Erin Frost for their continued encouragement and mentorship in the crafting of this article.

REFERENCES

- American Congress of Obstetricians and Gynecologists (ACOG). www.acog.org. Retrieved April 14, 2014.
- Balsamo, A. (1996). *Technologies of the gendered body: Reading cyborg women*. Durham: Duke University Press.
- Bordo, S. (2003). *Unbearable weight: Feminism, Western culture, and the body*. Berkeley: University of California Press.
- Britt, E. (2000). Medical Insurance as Bio-Power: Law and the Normalization of (In)Fertility. In M. Lay, L. Gurak, C. Gravon, & C. Myntti (Eds.) *Body talk: Rhetoric, technology, reproduction* (pp. 207-225). Madison: University of Wisconsin Press.
- Davis-Floyd, R., & Dumit, J. (1998). *Cyborg babies: From techno-sex to techno-tots*. New York: Routledge.
- De Hertogh, L. B. (2015). Reinscribing a New Normal: Pregnancy, Disability, and Health 2.0 in the Online Natural Birthing Community, Birth Without Fear. *Ada: A Journal of Gender, New Media, and Technology*, (7).
- Dubriwny, T. (2012). *The vulnerable empowered woman: Feminism, postfeminism, and women's health*. Rutgers University Press.
- Foucault, M. (1978) *The history of sexuality: Volume 1*. New York: Vintage Books.
- Frost, E. (2013). *Theorizing an apparent feminism in technical communication*. (Doctoral dissertation). Retrieved from ProQuest. (Order No. 3574642).
- Frost, E. (2014a). Apparent Feminist Pedagogies: Interrogating Technical Rhetorics at Illinois State University. *Programmatic Perspectives*, 6(1), 110-131.
- Frost, E. (2014b). An Apparent Feminist Approach to Transnational Technical Rhetorics: The Ongoing Work of Nujood Ali. *Peitho*, 16(2), 183-199.
- Grabill, J. & Simmons, W. (1998). Toward a critical rhetoric of risk communication: Producing citizens and the role of technical communicators. *Technical Communication Quarterly*, 7(4), 415-441.
- Gregory, R. (2012). A womb with a view: Identifying the Culturally Iconic Fetal Image in Prenatal Ultrasound Provisions. *Present Tense*, 2(2).
- Gurunath, S., Pandian, Z., Anderson, R. A., & Bhattacharya, S. (2011). Defining infertility—a systematic review of prevalence studies. *Human Reproduction Update*, 17(5), 575-588.
- Harraway, D. (1991). *Simians, cyborgs and women: the reinvention of nature*. New York: Routledge.
- Keränen, L. (2014). Public engagements with health and medicine. *Journal of Medical Humanities*, 35(2), 103-109.
- Koerber, A. (2006). Rhetorical agency, resistance, and the disciplinary rhetorics of breastfeeding. *Technical Communication Quarterly*, 15(1), 87-101.
- Koerber, A. (2013). *Breast or Bottle?: Contemporary Controversies in Infant-Feeding Policy and Practice*. University of South Carolina Press.
- Kreps, G. L., & Neuhauser, L. (2010). New directions in eHealth communication: opportunities and challenges. *Patient education and counseling*, 78(3), 329-336.
- Lay, M. (2000). *The Rhetoric of Midwifery: Gender, Knowledge, and Power*. New Brunswick, N.J: Rutgers University Press.
- Lay, M., Gurak, L., Gravon, C., & Myntti, C. (2000). *Body talk: Rhetoric, technology, reproduction*. Madison: University of Wisconsin Press.
- Lay, M. (2002). Feminist Criticism & Technical Communication Research. In L. Gurak & M. Lay (Eds.), *Research in Technical Communication* (pp. 165-182). Westport, CT: Praeger.
- Martin, E. (2001). *The woman in the body: A cultural analysis of reproduction*. Beacon Press.
- Murphy, M. (2012). *Seizing the means of reproduction*. Durham: Duke University Press.
- Owens, K. H. (2009). Confronting Rhetorical Disability A Critical Analysis of Women's Birth Plans. *Written Communication*, 26(3), 247-272.
- Owens, K. H. (2015). *Writing childbirth: Women's rhetorical agency in labor and online*. Southern Illinois University Press.
- Reinharz, S. (1992). *Feminist methods in social research*. Oxford University Press.
- Royster, J. & Kirsch, G. (2012) Feminist rhetorical practices: New horizons for rhetoric, composition, and literacy studies. Southern Illinois University Press.
- Scott, J. B. (2003). *Risky rhetoric: AIDS and the cultural practices of HIV testing*. Carbondale: Southern Illinois University Press.
- Seigel, M. (2013). *The rhetoric of pregnancy*. University of Chicago Press.
- Teston, C., Graham, S., Baldwinson, R., Li, A., & Swift, J. (2014). Public voices in pharmaceutical deliberations: Negotiating "clinical benefit" in the FDA's Avastin Hearing. *Journal of Medical Humanities*, 35(2), 149-170.
- Walters, S. (2005). Review of the book Risky Rhetoric: AIDS and the Cultural Practices of HIV Testing. *JAC*, 25(4), 845-849.
- Wells, S. (2010). *Our bodies, ourselves and the work of writing*. Stanford, CA: Stanford University Press.

APPENDIX

reVITALize Gynecology – Infertility Public Comment

Contained in this poll are the draft data element definitions that were developed by the Infertility workgroup as part of the reVITALize Gynecology Data Definitions Initiative.

We invite you to participate in Public Comment by thoroughly reviewing each of the definitions and indicating your response (support and do not support), along with any relevant comments. Your responses will be carefully reviewed and will help to determine the language of the final definition. Thank you for taking the time to participate.

Please direct any questions to quality@acog.org.

Public Comments Begins on Next Page

1. NAME
2. ORGANIZATION
3. EMAIL (incase we need to contact you regarding your responses)
4. FERTILITY “The capacity to reproduce.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
5. FERTILITY PRESERVATION “Therapies intended to maintain reproductive potential through protecting or preserving gametes, zygotes, embryos, or gonadal tissue.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
6. INFERTILITY “A disease characterized by the absence of a successful pregnancy after one year of either unprotected intercourse or insemination. This diagnosis may be considered in less than one year based on medical history, physical findings, or diagnostic testing.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
7. FEMALE INFERTILITY “Infertility stemming from a female partner NOTE: Female factors may include ovulatory disturbances, dimensioned ovary reserve, pelvic abnormalities affecting the reproductive tract, or other abnormalities of the reproductive system.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
8. MALE INFERTILITY “Infertility stemming from a male partner NOTE: Males factors include abnormal semen parameters, abnormal sperm function or inability to have coitus.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
9. UNEXPLAINED INFERTILITY “Infertility due to an unrecognized cause” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
10. PRIMARY INFERTILITY “Infertility in those who have never been pregnant.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
11. SECONDARY INFERTILITY “Infertility in those who have previously been pregnant.” Support / Do Not Support. If you

selected, ‘Do Not Support’ please indicate why in the box below.

12. ZYGOTE “A single cell resulting from fertilization of an oocyte by spermatozoa.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
13. EMBRYO “The product of the division of the zygote up to 10 weeks’ gestational age (8 completed weeks after fertilization). Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
14. FETUS “The product resulting from the continued development of the embryo (beyond 8 completed weeks after fertilization) until the end of pregnancy. Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
15. BLASTOCYST TRANSFER “Placement of the embryo(s) in to the uterus at the blastocyst stage, typically on day 5-6 post oocyte retrieval, as part of IVF.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
16. FERTILIZATION “A multi-step process that results in the formation of a zygote by the union of sperm and ovum.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
17. OVARIAN RESERVE “An indication of the number of oocytes in the ovaries.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
18. DIMINISHED OVARIAN RESERVE “Decreased ovarian responsiveness to exogenous stimulation in women of reproductive age compared to women of similar age.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
19. PRIMARY OVARIAN INSUFFICIENCY (POI) “A condition characterized by hypergonadotrophic hypogonadism in women younger than age 40 (also known as premature ovarian failure POF). Note: Includes women with premature menopause. Hint: You may be interested in reviewing the definition of Premature Menopause in Urogynecology and Menopause Public Comment Poll. It is question #23.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
20. CONTROLLED OVARIAN STIMULATION “The administration of medications to induce single or multiple follicular development.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
21. OVULATION INDUCTION “Ovarian stimulation in oligoovulatory or anovulatory women.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
22. OVARIAN HYPERSTIMULATION SYNDROME (OHSS) “Pathological condition characterized by ovarian enlargement and ascites that may occur after ovarian stimulation.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.

23. INTRACCYTOPLASMIC SPERM INJECTION (ICSI) “A procedure in which a single spermatozoon is injected into the oocyte cytoplasm.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
24. PREIMPLANTATION GENETIC SCREENINGS (PGS) “Characterization of a cell or cells from preimplantation embryos from IVF cycles to identify genetic abnormalities.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
25. PREIMPLANTATION GENETIC DIAGNOSIS (PGD) “Characterization of a cell or cells from preimplantation embryos from IVF cycles to determine the presence or absence of a specific genetic defect.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
26. ASSISTED REPRODUCTIVE TECHNOLOGY (ART) “Treatments or procedures that include handling both oocytes and sperm or embryos for the purpose of establishing a pregnancy.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
27. POLYCYSTIC OVARIAN SYNDROME (PCOS) “A heterogeneous endocrine condition in reproductive aged women commonly associated with ovulatory dysfunction, physical or biochemical evidence of androgen excess and an increased number of antral (immature) follicles in the ovaries. This diagnosis can only be made after excluding other pathologic conditions.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
28. ENDOMETRIOSIS “The growth of endometrial tissue in the body outside of the uterus.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.
29. AMENORRHEA “The absence of menstruation in women of reproductive age. Primary amenorrhea is defined as no menstruation by age 15. Secondary amenorrhea is defined as the absence of menses for six or more months or the length of three cycles after the establishment of regular menstrual cycles.” Support / Do Not Support. If you selected, ‘Do Not Support’ please indicate why in the box below.

Designing Public Communication about Doulas: Analyzing Presence and Absence in Promoting a Volunteer Doula Program

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ABSTRACT

Expectant parents use health communication messaging to make decisions about their childbirth plans. Recently, women have increasingly chosen to use doulas, or people who provide non-medical support during childbirth. This essay analyzes how a hospital designed public communication through promotional efforts regarding their no-cost, volunteer doula program. We use rhetorical analysis to analyze 19 promotional texts. By analyzing these materials through the rhetorical method of presence and absence, we found that the health discourse related to the doula program gave presence to expectant mothers. Additionally, the benefits of doulas, especially in relation to fathers or partners, remained absent in promoting the volunteer doula program. Through specific communication design recommendations, we focus on how to improve this communication to increase the use of doulas in our community, and in other communities. We conclude with implications and limitations of the study.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

Communication design; health discourse; doulas; presence; absence; promotional materials

INTRODUCTION

Long before labor begins, many expectant parents search for information about childbirth and begin to formulate plans (Romano, 2007). Increasingly, expectant mothers are planning to use doulas. A doula is a person, typically a woman, who provides emotional, physical, informational, and relational support to the birthing mother and her partner through labor, delivery, and post-partum (Lantz, Low, Varkey, & Watson, 2005). Birthing women consider involving doulas in the birth experience for a variety of reasons, including lower caesarian section birth rates, shorter labor time, and fewer requests for pain medication (Lantz et al., 2005).

This essay analyzes how a hospital designed its public communication regarding its volunteer doula program by giving presence to expectant mothers and leaving the benefits of doulas largely absent. To support the claim that the hospital's communication design choices limited the reach of public communication about the volunteer doula program, we first briefly explain the context of the project. Then, we review literature on rhetorical approaches to health communication message design. Third, we outline the rhetorical method of presence and absence, which we use to then analyze the communication design of the promotional materials. Finally, we offer implications and discuss limitations of this study. We focus on improving public communication to increase the use of doulas in our community, and other communities. Ultimately, this study shows the strengths of using an interdisciplinary, community-based research collaboration approach to evaluating public communication and offers communication design recommendations that are applicable to other health contexts.

Context of a Community Hospital's Volunteer Doula Program

In fall 2011, the local hospital created the volunteer doula program in response to focus groups of community women who requested this service. It was the first free labor and delivery doula program in the state and the first free post-partum doula program in the United States. This study to evaluate the program was approved through the South Dakota State University institutional review board, IRB-1303003-EXM.

This case study is part of a collaboration between our interdisciplinary research team and our community's local hospital. In this way, the project took a community-based participatory research (CBPR) approach and blended multiple methodologies, including rhetorical

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Communication Design Quarterly. ACM SIGDOC, New York, USA.

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and qualitative. Such an approach can be challenging and messy but also presents opportunities to arrive at sophisticated, meaningful conclusions (Meloncon, 2013). The project is an example of the complexities of interdisciplinary and community-based research. The research team included faculty from health communication, rhetorical studies, geography, and human development. The hospital's partners included the marketing and public relations (PR) director, the obstetrics (OB) director, and the volunteer doula program coordinator.

Together, both faculty and community partners composed interview and focus group guides. Faculty conducted interviews and focus groups with participants connected to the volunteer doula program, including OB physicians, OB nurses, doulas, mothers, and expectant parents. We report on these qualitative findings in a different essay. However these data, which reflect expert and lay discourses about doulas, influenced the rhetorical analysis presented here and factored into the recommendations for improving the communication design for lay audiences. The case study here focuses only on the analysis of communication design in the promotional materials. To situate that analysis in an academic context, we first explore literature about rhetorical approaches to studying health communication message design.

RHETORICAL APPROACHES TO HEALTH COMMUNICATION MESSAGE DESIGN

Health discourses refer to the combination of texts, ideas, images, symbols, and even bodies that people use to make sense of their health experiences. Health discourses affect the everyday lives of individuals as well as larger societal discussions about public health issues. Health discourses circulate not just ideas, but are fundamentally “material flows of symbols and images circulating through social spaces...and human bodies” (Condit, 2008, p. 385). The concept of materiality combines symbolic aspects of health discourse, i.e., the language used in messages, as well as the physical realities of health conditions, e.g., the state of being pregnant (Condit, 2008; Condit et al., 2009; Iedema, 2003). Discourses on birthing, and using a doula, also have material consequences for individuals and their health choices. For example, if a woman learns about doulas through discourses on birthing, and then chooses to use one during her birth, she may experience the benefits of a doula, such as shorter labor and/or fewer interventions. Thus, the discourse created material consequences in the form of influencing her birthing experience. In this section, we discuss literature about expert and lay discourses and then turn to research about message design.

Expert and Lay Discourses

Both expert and lay discourses are important in evaluating public health issues and how people make decisions regarding their health. Expert discourses are texts, ideas, images, symbols, and/or bodies that originate from institutions, groups, individuals, and/or fields of study that claim to have expertise about a public issue. Expertise can serve as a rhetorical force that helps inform the broader public, including lay audiences, about the technical aspects of social issues (Paliewicz, 2014). Lay discourses are texts, ideas, images, symbols, and/or bodies that circulate among lay audiences in society. They circulate as popular discourses, as narratives, and through social interactions (Hanson-Easey, Williams, Hansen, Fogarty, & Bi, 2015). Finally, expert audiences would identify as having expertise concerning a particular public issue, whereas lay audiences are

people who do not claim to have expert knowledge. Consider the public health issue of childbirth and the use of doulas. An expert audience member could be an OB nurse, who has expertise regarding childbirth and the role of a doula as part of the medical team. Her expertise, as a quotation in a pamphlet about doulas, would be an example of expert discourse that is directed to lay audiences such as expectant parents. In contrast, a lay audience member could be an expectant mother, who is employed as a teacher, but claims no expert knowledge regarding childbirth and doulas. Her discussion in an interview about the role of a doula in childbirth would be an example of lay discourse.

Existing scholarship has focused on how expert discourses have material consequences, often through disciplinary rhetoric (Foucault, 1977; Koerber, 2006). Medical institutions often circulate breastfeeding discourse, for example, which represents disciplinary rhetoric that materially affects women's bodies (Koerber, 2006). For instance, many women experience medical discourse that treats bottle-feeding as the norm, despite the 1997 policy statement by the American Academy of Pediatrics that suggests women breastfeed for the first year of an infant's life (Koerber, 2006, 2013).

Some studies have focused on the interplay between expert and lay discourses. Keränen (2010) noted that the analysis of the rhetoric of various stakeholders in science-based controversies often includes the study of arguments in both technical and public realms. She explained that “various stakeholders wrestled with scientific characters in ways that shaped their perceptions of scientific knowledge, policies, and values” (p. 3). Koerber (2013) added that rhetorical analysis helps us understand how expert knowledge is produced in conjunction with studying lay audiences who receive this information. She explained that the analysis of infant-feeding discourses is important in not just considering the rhetoric of physicians and medical personnel but also in studying “the rhetorical activities of various stakeholders, including...policy makers, public-health authorities, marketing professionals, health communicators, and mothers” (p. 7).

Rhetorical scholars have examined the interaction between expert and lay discourses in the context of midwifery; in particular, midwives' public advocacy (Lay, 2000; Lay, Wahlstrom, & Brown, 1996). Midwives are similar to doulas in that they provide continuous patient-centered care to the laboring mother. However, midwives are trained medical professionals capable of delivering babies, while doulas are non-medical professionals who provide support (Klaus, Kennell, & Klaus, 2012). Because of the perception that midwives and doulas are advocates of ‘natural-only’ childbirth (Howell-White, 1997), midwives have tried to establish their place in the birthing community both within and outside of the hospital setting (Lay, 2000; Lay et al., 1996). Midwives' rhetorical choices reflect a desire to be included in medical communities' discourses (Spoel, 2008), especially since the medical community often renders them absent or outside of ‘mainstream’ medicine.

Similar to expert discourses, lay discourses often combine the physical with the symbolic. For example, lay audiences use different metaphors to explain the role of genetics; these metaphors influence people's perceptions of contracting and preventing specific diseases such as diabetes, heart disease, and lung cancer (Gronnvoll & Landau, 2010). Lay discourses are important because they are one way in which lay audiences communicate their understanding of public issues to others.

Lay discourses about health, in conjunction with message design choices in expert discourses about health issues, both influence public understandings of health and individual decision-making. However, many studies of health communication message design do not explicitly focus on combining lay audiences and analyses of message design. Landau, Groscurth, Wright, and Condit (2009) explained that a majority of studies analyzing the impact of verbal and visual scientific images on the public primarily focus on textual studies rather than on lay discourses. Although Landau, Groscurth, Wright, and Condit (2009) were not analyzing promotional message design, they make a compelling argument that more research is needed in combining visual studies of health and scientific discourses with analyses of how those discourses are designed for and perceived by lay audiences. One exception comes from Spoel's (2007) rhetorical analysis of choosing to use a midwife. Spoel (2007) examined how her choice to use a midwife reflected a "women-centered rhetoric of health care" (p. 1), and how the use of a midwife is a "rhetorical process of communication" between the woman and her midwife (p. 2).

As this literature review demonstrates, rhetorical scholars have given some attention to both expert and lay midwifery discourses (Lay, 2000; Lay, Wahlstrom, & Brown, 1996), but they have not fully analyzed discourses about doulas and how they affect childbirth. Women are increasingly seeking out alternative models of childbirth, including methods that involve the use of midwives and doulas (Hinote & Wasserman, 2012; Stover, 2011). The non-medical aspect of the doula's role can create some uncertainty and ambiguity among both expert and lay audiences unfamiliar with this form of birthing assistance (Anderson & Kuehl, 2014). This makes public communication about doulas especially important to understand, as such communication could have an impact on lay audiences' understanding and use of doulas. Thus, this study explores how doula programs are communicated to lay audiences through promotional materials about a volunteer doula program. Our study unites an analysis of expert and lay discourses about doulas with message design choices about a volunteer doula program.

Message Design Elements

In this section, we evaluate literature on visual and verbal/textual components of design, the use of narrative versus statistics in conveying health information, and the use of gain versus loss framing in health messages.

Visual and verbal/textual components. In studying rhetorics of science, technology, and medicine, scholars should assess the relationship between visual and verbal/textual components of specific communications (Prelli & Condit, 2013). Although scholars have debated about whether or not verbal or textual frameworks can successfully be applied to visuals, Prelli & Condit (2013) suggested that researchers remain open to multiple frameworks, including verbal/textual frameworks such as metaphor or narrative. For example, Thompson (2012) used semiotics and critical discourse analysis to analyze visual messages on a mental health community website.

More specifically, some rhetorical scholars have studied a variety of visual and verbal/textual representations of pregnancy, childbirth, and similar topics. Koerber's (2006) study of breastfeeding advocacy highlighted both the visual and verbal elements of breastfeeding discourses. The breastfeeding body serves as a visual representation of breastfeeding discourse (Rose, 2012). Koerber (2006) explained

that one argument from breastfeeding advocates is that women are less likely to view breastfeeding as the norm because women do not see images of breastfeeding mothers in infant-feeding discourses. Women may choose to breastfeed their children in public as a visual way of disrupting normative discourses about bottle-feeding (Koerber, 2006, 2013). Other scholars have evaluated birth and pregnancy discourses through rhetorical-cultural analyses of popular texts such as *The Business of Being Born* (Owens, 2011) and the *What to Expect* series (Dobris & White-Mills, 2006). Others have continued to study these discourses through more recent technological advances in representing pregnancy, such as through the 3D/4D ultrasound (Kroløkke, 2010) and digital photographs of a "pregnant (transgender) man" (Landau, 2012, p. 181), arguing that such visual technologies continue to shape our understandings of pregnancy and the formation of families. These analyses show how expert and lay discourses, popular birthing texts, documentaries, and visual technologies shape representations of pregnancy, childbirth, and parenthood, as well as the public's understandings of these aspects of shifting identity.

Narrative and statistical information. In addition to visual and verbal/textual message design choices, health message designers can present information in a narrative or statistical format. In narratives, especially first-person narratives, health information is presented as part of patients' testimonial stories about the outcomes of their health decisions (Winterbottom, Bekker, Conner, & Mooney, 2008). For example, a message attempting to persuade a woman to use a doula might include one woman's story about her experience with a doula during childbirth.

In contrast, other messages might rely on factual or statistical information to attempt to persuade a person to enact or avoid a particular health behavior (Winterbottom et al., 2008). For instance, a message might explain the percentage of women who choose to use doulas and the statistical evidence that demonstrates doulas' effects (e.g., shortened labor or less use of pain medication). Narrative accounts have stronger persuasive effects than statistical or factual presentations of the same information (de Wit, Das, & Vet, 2008; Feeley, Marshall, & Reinhart, 2006; Winterbottom et al., 2008). This is the case not only for health messages but also for general examples of persuasion, at least in the short-term (Rowland, 2009). Thus, for messages about the use of doulas, narrative accounts would likely be more persuasive than the use of only factual or statistical information.

Gain and loss framing. Both narratives and statistical information can convey risks associated with health behaviors. When communicating risks, messages can be framed either positively, i.e., focusing on the benefits obtained from enacting the behavior, or negatively, i.e., focusing on the losses suffered from not enacting the behavior (Cho & Boster, 2008; Rothman & Salovey, 1997). Based on prospect theory (Tversky & Kahneman, 1981), previous researchers argued that gain frames are more effective when persuading audiences to adopt preventive behaviors that avoid risk, and that loss frames are more effective when persuading audiences to adopt detection behaviors that identify risks (Cho & Boster, 2008; Rothman & Salovey, 1997).

The use of a doula for childbirth could be categorized as a preventive behavior, because using a doula should help a woman avoid risks such as emotional distress or unnecessary medical interventions. In addition, previous research has suggested that gain frames are more effective for relatively simple actions—such as carrying

condoms, whereas loss frames are more effective for complicated actions—such as talking to a partner about condom use (Kiene, Barta, Zelenski, & Cothran, 2005). The use of a volunteer doula is a simple health behavior; it does not need to be planned and does not require anything from the patient except a willingness to allow the doula into the birthing experience. As such, communication design about doula use would likely be framed in terms of gains, or the benefits obtained from enacting that action. Understanding this literature about expert and lay discourses and message design elements, we now turn to the rhetorical method of presence and absence.

RHETORICAL METHOD: PRESENCE AND ABSENCE IN MESSAGE DESIGN

The promotional materials about the volunteer doula program were the primary means of public communication and argument in persuading lay audiences to consider using doulas. We studied 19 texts that were promotional materials published and disseminated by the local hospital, including the following: one weekly pregnancy e-newsletter, two doula program brochures, the OB patient handbook, one Facebook advertisement and promotional video, two quarterly newsletters, nine doula program press releases, two newspaper advertisements, and one television advertisement. We used rhetorical analysis, and specifically presence (Perelman & Olbrechts-Tyteca, 1969) and absence, as the lens through which to analyze message design. Despite some recent attention by rhetorical scholars, presence is still an under-used concept in rhetorical criticism and argumentation (Atkinson, Kaufer, and Ishizaki, 2008).

Presence deals with both message design choices as well as audience perceptions of those choices. Gross and Dearin (2003) suggested that presence involves the dynamic interaction of arrangement, style, and invention. Perelman and Olbrechts-Tyteca (1969) also explained that as audiences interact with a message, they are always selecting information and facts relevant to an argument. They noted: “Indeed, such a choice endows these elements with a presence, which is an essential factor in argumentation and one that is far too much neglected in rationalistic conceptions of reasoning” (p. 116). If rhetors choose certain elements to emphasize over others in an argument, then they are emphasizing those elements’ importance to that particular issue for the audience (Gross, 2005; Perelman & Olbrechts-Tyteca, 1969).

Presence has broad significance for argumentation and rhetoric, as well as communication design. It is not simply the reinforcement of a belief or attitude; it is a strategy wherein the rhetor makes certain elements, such as values, feel real or significant to the audience rather than simply imagined by the audience (Atkinson et al., 2008; Gross & Dearin, 2003; Perelman & Olbrechts-Tyteca, 1969; Pezzullo, 2007). Presence is the audience’s feeling or “affective experience” with particular elements of an argument or text (Pezzullo, 2007, p. 9). Importantly, the use of presence to emphasize certain parts of an argument has implications for the audience’s judgment and future actions (Landau, 2011). In our evaluation of promotional materials about a volunteer doula program, the use of presence to emphasize certain message design elements has consequences for how a lay audience judges the use of doulas, and may influence their decision on whether or not they might use a doula.

In contrast to presence, Perelman and Olbrechts-Tyteca (1969) also described a phenomenon that more recent scholars have

called absence. They explained that the “deliberate suppression of presence is an equally noteworthy phenomenon, deserving of detailed study” (p. 118). Because of the selective characteristics of argumentation, concepts that are deliberately not made present, or absent, are less likely to be acted upon by potential audiences. Chidester (2008) wrote that the absence of a particular discourse can also function rhetorically. In writing about whiteness in the television show *Friends*, Chidester (2008) argued that the absence of symbolic markers such as race communicated particular meanings, especially in moments where those symbolic markers were expected to be present by the audience. For texts dealing with childbirth, certain symbols and images of people may be expected to be present; i.e., a laboring mother, an expectant father or partner, a nurse, a physician, or even a midwife or doula. If one or more of these individuals is absent in birthing discourse, this message design has implications for how an audience understands the experience of childbirth.

Presence and absence are not only concepts used in verbal argumentation. Recently, scholars have used these concepts in evaluating a rhetor’s strategies in various multi-media advertisements and campaigns. For example, Landau (2011) wrote that “an analysis of verbal and visual presence and absence in advertising can specify the multi-mediated strategies for gaining the attention of audiences who are saturated with images and struggling with data selection and distraction” (p. 42). The emphasis on presence, and the role of the audience in selecting and interpreting information based on message design choices, is especially well-suited for use in analyzing promotional materials for a volunteer doula program, because lay audiences are constantly targeted through health pamphlets and advertisements.

RHETORICAL ANALYSIS AND RESULTS: PRESENCE AND ABSENCE IN PROMOTIONAL MATERIALS ABOUT DOULAS

By rhetorically analyzing the promotional materials through the lens of presence and absence, we found that health discourse related to the doula program gave presence to expectant mothers, while doulas’ benefits were largely absent from the promotional materials. This analysis merges the presence and absence critical perspective from argumentation and rhetorical studies with the literature about expert and lay discourses and message design elements.

Presence of Expectant Mothers

We first analyze how expectant mothers were made present in public communication about doulas, including through a narrative connected to expectant mothers’ childbirth expectations, and through visuals of expectant mothers.

Narrative of expectant mothers and childbirth. In most of the promotional materials about doulas, expectant mothers were made present through the use of “you,” or second-person, in the narrative of pregnancy and what to expect in childbirth. For example, in the pregnancy e-newsletter, each week is divided into a short segment each about the baby, mom-to-be, and a weekly tip. In every mom-to-be segment, the newsletter uses second-person. Here is one example: “Once the size of a pear, your uterus is now the size of a grapefruit. You still probably don’t show much, but you may feel more comfortable in looser clothes” (Brookings Health System, 2014c). By directing the pregnancy narrative to only the

expectant mother, the text makes mothers the assumed audience, despite the fact that childbirth often involves a mother and a father or partner.¹ Expectant fathers or partners are noticeably absent in the hospital's narrative about pregnancy and what to expect in childbirth (Brookings Health System, 2012d; Brookings Health System, 2014c). Focusing the childbirth narrative only on the expectant mother only connects to half of the lay audience who might consider using a doula.

Even when the communication design addresses expectant parents in the pregnancy and childbirth narrative, expectant mothers are the audience made present. In the Facebook advertisement, the promotional video with the volunteer doula targets expectant mothers throughout the narrative about using a doula during childbirth, with only one segment of the video addressing how the expectant father or partner fits into the doula's role (Brookings Health System, 2012a). Although the OB patient handbook uses second-person in referring to "expectant parents" in the beginning of the handbook, in the narrative that follows that message, the text once again emphasizes the expectant mother: "The birth of your child is a very special time in your life when you and your partner will be making many decisions" (Brookings Health System, 2012d, p. 3). Despite the handbook being addressed to expectant parents, it emphasizes the expectant mother by referencing "you and your partner" in the textual narrative. The hospital's expert discourse in this narrative reinforces a normative lay discourse that the expectant mother is the only person who decides who should be present at childbirth.

Similarly, in the television advertisement for the hospital, the text features "expectant parents" at the end of the narrative that guides parents through the process of arriving to the emergency room, getting into a labor and delivery room, and having their baby (Brookings Health System, 2012e). Although the visuals feature one set of expectant parents in this narrative, the text notes that the hospital is a "mother-friendly environment," offers a "free massage for new mothers," and asks mothers to "voice your choice during your birth experience" (Brookings Health System, 2012e). Therefore the design of the message appears

somewhat contradictory: visually, both mother and father/partner are represented, but textually, the mother is made present as the primary audience. Only at the end of the television advertisement does the text briefly indicate to "expectant parents" that they should mention the advertisement to receive a free gift upon touring the facility (Brookings Health System, 2012e).

The communication design elements seemingly address both the expectant mother and father or partner through some of the visuals, but textually, expectant mothers are the audience made present. Expectant fathers or partners are textually absent in the narrative about pregnancy and childbirth, since the choice of using the term "expectant parents" implicitly features both mother and father/partner without making fathers/partners present. The hospital made a good design choice in using narrative, because narrative is more persuasive than statistics (de Wit et al., 2008; Feeley et al., 2006; Winterbottom et al., 2008). However, this expert discourse would have been more persuasive had the materials used first-person testimonials rather than second-person narrative (Winterbottom et al., 2008). By making expectant mothers present in discourse about childbirth and doulas, the hospital limits its reach to the other half of its lay audience. The hospital also reinforces lay discourse that includes a woman-centered norm in decision-making regarding childbirth and using a doula.

Materiality in visuals of expectant mothers. Expectant mothers are made present not only through narrative but also through visuals, which gives mothers a material presence in the argument for using a doula. One Mother's Day print advertisement visually depicts a new mother kissing her newborn infant (see Figure 1, Brookings Health System, 2012c). This advertisement seeks to persuade the expectant mother to choose this particular hospital in part because of the volunteer doula program. In a print advertisement about a doula workshop, the image features a pregnant woman, or expectant mother, holding up an image of a fetal ultrasound (see Figure 2, Brookings Health System, 2011c).

In both advertisements, the use of a pregnant woman's body, along with an image of the infant or fetal ultrasound, makes the expectant mother visually present in a way that highlights the materiality of maternity and motherhood. The message design gives mothers

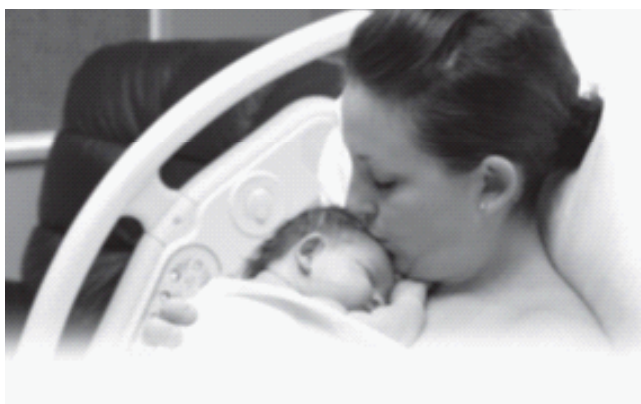


Figure 1: Mother's Day print advertisement. © 2012, Brookings Health System. Reprinted with permission.

1 The presence of a father or partner is not always part of a woman's birth experience. This study is intended to be inclusive of partners, but is not intended to imply that single women cannot have successful birth experiences.



Figure 2: DONA birth doula workshop print advertisement. © 2011, Brookings Health System. Reprinted with permission.

an “affective experience” in a way that fathers or partners simply cannot imagine (Pezzullo, 2007, p. 9). Once again, the lay audience of expectant fathers or partners is left out of this experience, due to most fathers’ or partners’ physical inability to experience pregnancy and childbirth. The expert discourse of the fetal ultrasound image is a visual technology of pregnancy and motherhood (Kroløkke, 2010). Such an image only compounds a norm often found in lay discourse about childbirth, which emphasizes the female body.

Beyond the visuals, the texts in these advertisements make mothers the overwhelming presence in the argument for the lay audience who might choose to use a doula. Textually, the Mother’s Day print advertisement uses second-person to make the mother present as the primary audience for this advertisement: “Choose your very own birth experience. Relax in your own whirlpool and receive a free massage...” (Brookings Health System, 2012c). Expectant mothers are told they can choose their birth experience, similar to lay discourses that promote a woman’s right to choose, in pregnancy and in childbirth. This material health discourse combines the symbolic components (images of the ultrasound and newborn infant and mother) with part of the lay audience’s physical reality (being pregnant and a new mother).

Absence of Doulas’ Benefits to Expectant Parents

Whereas expectant mothers were made present through narratives and visuals, doulas’ benefits were absent in two ways, through the use of loss framing and a lack of expectant fathers or partners interacting with doulas.

Loss framing of the volunteer doula program. In contrast to the use of narrative and materiality that make expectant mothers present in the promotional materials, the benefits of the doula program and the role of fathers or partners remain absent. Throughout the promotional materials, and especially the press releases about the program, the need for a doula is framed through anxiety and stress, which is a loss frame. This frame is not as persuasive as a gain frame in articulating the benefits of doulas (Cho & Boster, 2008; Rothman & Salovey, 1997). In the OB patient handbook and in the Winter 2011 newsletter, the same language describes the rationale for the creation of the volunteer doula program: “Pregnancy is an exciting, joy-filled time for parents. However, it can also be filled with anxiety and stress. That’s why Brookings Health System started a volunteer doula program...” (Brookings Health System, 2011e, p. 4; Brookings Health System, 2012d, p. 8). The rationale for the doula program itself is through the absence of benefits of a doula, emphasizing that the lay audience of expectant parents might choose a doula because of the anxiety and stress associated with childbirth. This expert discourse that highlights negative feelings uses a fear appeal; the hospital makes anxiety and stress feel significant to the lay audience of expectant parents. The positive benefits of using a doula, such as the aforementioned informational, emotional, and physical support (Lantz et al., 2005), remain absent.

Additionally, the absence of benefits of doulas can also be found through the loss framing of the program in the context of the overarching purpose of the hospital. Specifically, in the Fall 2011 newsletter and in various press releases, the program is introduced as “part of the ongoing initiative to improve the birth experience” rather than focusing on concrete benefits of the doula program (Brookings Health System, 2011a; Brookings Health System, 2011d, p. 7). In a slight variation, other press releases mention the creation of the volunteer doula program as “part of the ongoing

initiative to improve labor, delivery, recovery and postpartum care” (Brookings Health System, 2011b). This framing of the program as part of the larger hospital’s purpose of improving the birth experience suggests that something is wrong with current OB services. This message design proposes that the hospital created the program because of negative birth experiences of parents, hence why the hospital needs an initiative to improve care. The expert discourse about doulas is framed as a ‘fix’ to the current OB care at the hospital. Instead of highlighting concrete benefits of doulas to the lay audience of expectant parents through a gain frame, which would be the best frame for this health issue, doulas’ benefits remain absent.

Absence of expectant fathers/partners interacting with doulas. The message design of the promotional materials largely does not feature expectant fathers or partners alongside doulas, nor do the materials show doulas interacting with fathers or partners. The only mention of fathers/partners interacting with doulas is in the doula video testimonial in the Facebook advertisement, specifically in the “creating a family” segment (Brookings Health System, 2012a). This absence of fathers or partners is a limitation in the program’s message design, especially since doulas often see their role as helping the whole family—including fathers/partners—to bond during this time (Klaus et al., 2012). This expert discourse shows that doulas continue to remain absent, or outside of ‘mainstream’ medicine, in discourses about childbirth, similar to findings regarding discourses about midwives (Lay, 2000; Lay et al., 1996).

In some of the promotional materials, expectant fathers/partners are textually framed in the context of an expectant mother being unsure regarding whether or not a doula would replace the father or partner during childbirth. For instance, in the doula program brochure, one of the sections has the heading, “Does the doula replace my husband or other support person?” (Brookings Health System, 2012b). In the OB patient handbook, the narrative that describes using a doula also emphasizes this concern about a doula replacing the father or partner: “A doula does not replace a father, partner or other support person, but instead enhances the birth experience” (Brookings Health System, 2012d, p. 8). Despite the purpose of the message to counter argue this concern of expectant mothers, the message negatively frames the interaction of fathers or partners with doulas.

Contradicting the textual message elements that proclaim “a doula does not replace a father, partner or other support person,” (Brookings Health System, 2012d, p. 8), fathers are absent from visual message elements that feature doulas. Although some images in the promotional materials do feature fathers or partners, these images often include expectant mothers as the only people featured with a doula, leaving expectant fathers/partners largely absent in the process of a doula-assisted childbirth. For example, the OB patient handbook includes some images of a mother, father/partner, and baby, but never in conjunction with an image of a doula (Brookings Health System, 2012d). All of the visuals in the doula brochure feature the mother and baby with the doula, or just the mother with the doula (Brookings Health System, 2012b). Of the five images used in the doula brochure, only one features an expectant father or partner; the other four images just include mothers with their babies or expectant mothers working with doulas during labor (Brookings Health System, 2012b). Since lay discourses about birthing assume the father/partner will be beside the laboring

mother, lay audiences may perceive that the expert discourse in these brochures—which places the doula next to the mother without a partner—does, in fact, replace the father/partner with a doula.

Additionally, because expectant fathers or partners are never visually featured alongside a doula, the message design limits the opportunity to persuade both expectant mothers and fathers/partners about the benefits of using a doula. The potentially positive relationship between a doula and an expectant father or partner remains visually and textually absent. For lay audiences unfamiliar with doulas, the absence of a father or partner may not present the whole story of what a doula is and how a doula assists both the mother and the partner/father in the childbirth experience.

IMPLICATIONS, LOCAL IMPACT, AND LIMITATIONS

Using the lens of presence and absence, our rhetorical analysis provides insight into specific communication design choices that shaped the presentation of the volunteer doula program to audiences in our community. In this section, we provide implications, explain how these suggestions were integrated into the local hospital's marketing materials, and consider limitations of the study.

Implications

We first consider implications for public communication, rhetorical studies, and communication design. These implications demonstrate how to improve public communication about doulas and how to increase their use in our community as well as in other communities and health contexts.

Public communication. Because women are increasingly choosing to use a doula in childbirth, this study fills an important gap in studying public communication in relation to discourses about doulas. Our study extends literature that analyzes health discourses about midwives (Lay, 2000; Lay, Wahlstrom, & Brown, 1996; Spoel, 2007, 2008), breastfeeding (Koerber, 2006; 2013; Rose, 2012), and pregnancy (Dobris & White-Mills, 2006; Kroløkke, 2010; Landau, 2012). Public communication about doulas shapes the lay audience of expectant parents' perceptions about doulas and their health decisions in relation to childbirth. Our analysis suggests that specific communication design choices, such as making some individuals present and others absent, in promotional messages could limit the reach of such communication.

Furthermore, our methodological approach highlights the importance of community-based collaboration in the study of public communication. Our team was interdisciplinary and included the community members responsible for generating the communication design for the promotional materials. By working with these community members, we had unprecedented access to all of the materials, including those no longer available online. This allowed for a truly comprehensive picture of the entire promotional effort related to the volunteer doula program. By having an interdisciplinary team, we were able to develop an analytical framework that incorporated both rhetorical and health communication perspectives on message design choices. The analysis of every promotional message, then, speaks to broad concerns about how the hospital used presence and absence, and focuses on specific message design elements as evidence to support these broader claims.

Rhetorical studies. In addition to implications for the study of public communication, this project has implications for rhetorical studies. The rhetorical analysis shows the importance of considering visual and verbal/textual elements of message design in conjunction with lay audiences' perceptions of health discourse. This analysis demonstrates that incorporating more traditional theoretical approaches to health discourses has value for analyzing health and medical discourses (Prelli & Condit, 2013). In this study, we use presence and absence, a traditional critical perspective in rhetoric and argumentation. The rhetorical analysis of promotional materials provides unique insights into the volunteer doula program that extend past what we learned through other phases of this project, including focus groups and interviews. In this essay, we demonstrate that beyond studying public argument, presence and absence can be a useful rhetorical lens for analyzing promotional materials related to health behaviors such as choosing to use a doula. Such rhetorical analysis shows the material consequences of health and medical discourses for lay audiences, and how the expert discourses found in different message design elements can shape how audiences receive health messages and ultimately decide whether or not to enact a particular health behavior (Landau, 2011).

Communication design. The analysis of presence and absence illustrates specific communication design choices, guiding our recommendations for future communication design around the use of doulas and other maternal health issues, such as prenatal care or breastfeeding. We recommend featuring first-person narratives from fathers or partners on the benefits of using a doula, alongside images of doulas that incorporate mothers, fathers/partners, and medical staff. This message design recommendation reflects a blending of the general rhetorical analysis of presence and absence, as well as the specific message design choices of narratives, gain frames, and visuals.

First, we recommend using first-person narratives to describe mothers' and fathers' or partners' experiences with doulas. Our analysis shows that the promotional narratives largely use second-person narratives in which fathers or partners are absent. Instead the text refers to the audience as "you and your partner" or refers to the "mother-friendly environment" of the hospital. Indeed, in emphasizing the presence of the mother, the texts strongly indicate the absence of a father or partner. This absence is important to understand in considering a lay audience's judgment of the argument and future actions (Chidester, 2008; Landau, 2011). Because fathers or partners are an integral part of the birthing process with doulas (Klaus et al., 2012), their absence makes these narratives lack fidelity (Fisher, 1984). Simply put, the narratives are not true to the lived experience of birthing with a doula. In order for narrative accounts to be persuasive, they must also be accurate. Therefore, we suggest increasing the presence of fathers or partners within narratives about doula-assisted births. We also suggest continuing to use narratives rather than numerical or statistical information, but using first-person testimonials, which are more persuasive (Winterbottom et al., 2008).

Second, we recommend framing the use of a doula in terms of gains, or benefits, rather than losses. Much of the language used to persuade audiences to use a doula focused on potentially negative outcomes (e.g., stress, anxiety) that might occur if a doula is not used. However, few promotional materials communicated the benefits of using a doula (e.g., greater emotional connection with father/partner, improved understanding of medical interventions). Previous research indicated that, with a simple preventive behavior

like doula use, gain frames are typically more persuasive than loss frames (Cho & Boster, 2008; Rothman & Salovey, 1997). Future promotional efforts for the use of doulas, or other preventive maternal health behaviors like prenatal care or breastfeeding, should focus on the benefits of the behavior. For example, previous research suggested that women who used doulas experienced positive feelings about the birth experience, improved self-esteem, and greater bonding with their child and spouse/partner (Scott, Klaus, & Klaus, 1999). These types of benefits could be highlighted in gain-framed narratives about doula-assisted births, as well as in other women-centered health discourses.

Third, we recommend using visual cues to demonstrate that the father or partner and the medical team are part of a doula-assisted birthing process. Our analysis demonstrates that doulas are typically visually represented alongside a mother, and no one else—not the expectant father or partner, or the hospital staff. The doula is essentially absent from the medical team in these discourses. Visual depictions of health-related behaviors can be cues about what is normative (Koerber, 2006). Thus, we suggest that images of doulas incorporate fathers or partners as well as medical staff, so that the combination of medical staff, doula, father/partner, and mother appears as a normative birthing practice. Similarly, visual representations of a maternal health issue such as breastfeeding could depict the mother with a father/partner, a health care provider, and a lactation consultant. These types of visuals could help normalize the role of non-medical support persons such as doulas and lactation consultants, in the context of maternal health care.

Finally, in developing messages for future campaigns, particular attention should be paid to designing messages that resonate with the lived experience, or material reality, of the audiences. In addition, future research on communication design in local communities should try to include local audience perceptions alongside the campaign or promotional texts, in order to arrive at deeper insights in the analysis of communication design choices. This will also allow researchers to offer recommendations that will not only improve the persuasiveness and appeal of the messages, but also present a more accurate picture of the phenomenon.

Taken together, these recommendations show how to improve public communication aimed at increasing the use of doulas. First, begin with an interdisciplinary team that includes message design experts as well as message creators. Second, use rhetorical analysis to evaluate communication design choices that may limit the reach of promotional messages. Third, make strategic communication design choices to enhance the persuasiveness of the messages. These choices include: using first-person narrative accounts from mothers and fathers/partners, choosing gain-framed narrative accounts that focus on the positive outcomes of using a doula, and developing visual representations of doula-assisted births that include fathers or partners and medical staff. Finally, allow lay audiences to review messaging to ensure that the final promotional materials resonate with the lived experience of the intended audiences. With these changes, messages about doula use will give presence to important aspects of the doula experience such as the father's/partner's role, the benefits for the mother and the father/partner, and the integration of the doula with the medical team.

Local Impact

We concluded that the hospital's communication design choices limited the reach of public communication about the volunteer doula program by only conveying a small part of the benefits of

this program to the community. We reported these results back to the hospital's staff and doulas (Meloncon, 2013), both to check for the veracity of our findings and to provide meaningful feedback to the participants. During this meeting, we shared our concrete recommendations for improving the design and overall persuasiveness of the promotional materials. Since we worked with the hospital from the beginning of the project, our community-based research team agreed to generate findings that could be both theoretically meaningful and practically relevant. The community partners were eager to hear the recommendations and put them into practice.

Updates to the hospital's web-based promotional efforts have enhanced the visual and textual presence of fathers/partners and have shifted from loss to gain framing through the use of first-person narratives. For example, the hospital created a series of testimonial videos that use first-person narratives. Importantly, one of the testimonial videos features both a mother and father/partner who tell their story of using a doula at the hospital (Brookings Health System, 2014b). In addition, the messaging on the OB webpage that guides the viewer to the volunteer doula page now states that "our volunteer doulas help *daddy* and mommy to [get] through the labor and delivery process as well as the postpartum period" [emphasis added] (Brookings Health System, 2014a). This change in messaging highlights the expectant father or partner right away, and invites the audience to click on the link. Once the audience follows that link, the volunteer doula page explains doula benefits in brief sentences, with hyperlinks (Brookings Health System, 2014a).

One change that the hospital has not been able to implement is the use of images that depict doulas with medical personnel, as well as the father/partner and mother. The hospital has not yet been able to respond to this recommendation, in part, because stock images of medical teams with doulas are not widely available. This demonstrates doulas are typically—not just in this context—absent from medical discourse about birthing, much like midwives (Lay et al., 1996). Although the hospital did move forward with many of our recommendations, we have not assessed the doula program since the recommended changes were put in place.

Limitations

Although this project had a local impact on the volunteer doula program, the major limitation of this study stems from its context, and applications drawn from this study should be done with careful consideration of context. The promotional materials were developed before the program began, and thus the marketing and PR director was unsure about how the program would work or how to market it. However, patients had been using private, hired doulas during labor and delivery, so testimonials from these experiences could have been one resource in constructing first-person narratives. At the time the study was conducted, the birth doula program had only been running for approximately a year and a half; the postpartum doula program had only been initiated six months prior, and only about 3% of families delivering at the hospital had used the volunteer doula program. Thus, this analysis is based on a small program, with limited usage, at a small, rural hospital. Applications to other promotional efforts for doula programs are therefore limited. However, the theoretical implications for message design, as well as for research approaches to analyzing message design, are not weakened by these limitations.

CONCLUSION

A rhetorical analysis of presence and absence in promotional materials about this volunteer doula program revealed that mothers are present through narrative texts as well as material images, and that the benefits of doulas—especially for fathers or partners—are largely absent. Based on these findings, the hospital responded to our communication design recommendations by creating new materials that use a gain frame, featuring first-person narratives from fathers/partners who explain the benefits of using a doula. In addition to this local impact, our study approach (i.e., an interdisciplinary, community-based partnership) also provides implications for message design choices and research on communication design.

REFERENCES

- Anderson, J., & Kuehl, R. (2014, November). Social support for birthing mothers: Evaluation of a volunteer doula program at a rural hospital. Paper presented at the *National Communication Association Annual Convention*, Chicago, IL.
- Atkinson, N. S., Kaufer, D., & Ishizaki, S. (2008). Presence and global presence in genres of self-presentation: A framework for comparative analysis. *Rhetoric Society Quarterly*, 38(4), 357-384. doi:10.1080/02773940802167583
- Brookings Health System (2011a, July 21). Brookings Health System aims to improve new parents' birth experience [Press Release]. Brookings, SD.
- Brookings Health System (2011b, August 29). Brookings Health System starts new volunteer doula program [Press Release]. Brookings, SD.
- Brookings Health System (2011c). DONA birth doula workshop [Print advertisement]. Brookings, SD.
- Brookings Health System (2011d, Fall). Working for expectant parents. *Inspiring Health* [Newsletter]. Brookings, SD.
- Brookings Health System (2011e, Winter). Mothering expectant mothers. *Inspiring Health* [Newsletter]. Brookings, SD.
- Brookings Health System (2012a). Brookings Health System doula [Facebook advertisement]. Brookings, SD. Retrieved from <http://brookingshealth.org/services/women-s-services/obstetrics/volunteer-doula-program/>
- Brookings Health System (2012b). Doula program [Brochure]. Brookings, SD.
- Brookings Health System (2012c). Inspiring Health [Print advertisement]. Brookings, SD.
- Brookings Health System. (2012d). *New Beginnings Birth Center Patient Handbook* [Handbook]. Brookings, SD.
- Brookings Health System (2012e). New Beginnings Birth Center Video [Television]. Brookings, SD. Retrieved from <http://brookingshealth.org/services/women-s-services/obstetrics/>
- Brookings Health System (2014a). Obstetrics. Retrieved from <http://brookingshealth.org/services/women-s-services/obstetrics/>
- Brookings Health System (2014b). Volunteer doula program. Retrieved from <http://brookingshealth.org/services/women-s-services/obstetrics/volunteer-doula-program/>
- Brookings Health System (2014c). Weekly pregnancy emails. Retrieved from <http://brookingshealth.org/services/women-s-services/obstetrics/resources-for-expectant-parents/weekly-pregnancy-emails/>
- Chidester, P. (2008). May the circle stay unbroken: Friends, the presence of absence, and the rhetorical reinforcement of whiteness. *Critical Studies in Media Communication*, 25(2), 157-174. doi:10.1080/15295030802031772
- Cho, H., & Boster, F. J. (2008). Effects of gain versus loss frame antidrug ads on adolescents. *Journal of Communication*, 58, 428-446. doi:10.1111/j.1460-2466.2008.00393.x
- Condit, C. M. (2008). Race and genetics from a modal materialist perspective. *Quarterly Journal of Speech*, 94(4), 383-406. doi:10.1080/00335630802422212
- Condit, C. M., Gronnvoll, M., Landau, J., Shen, L., Wright, L., & Harris, T. M. (2009). Believing in both genetic determinism and behavioral action: A materialist framework and implications. *Public Understanding of Science*, 18(6), 730-746. doi:10.1177/0963662508094098
- de Wit, J. B. F., Das, E., & Vet, R. (2008). What works best: Objective statistics or personal testimonial? An assessment of message evidence on risk perception. *Health Psychology*, 27, 110-115. doi:10.1037/0278-6133.27.1.110
- Dobris, C. A., & White-Mills, K. (2006). Rhetorical visions of motherhood: A feminist analysis of the What to Expect series. *Women & Language*, 29(1), 26-36.
- Feeley, T. H., Marshall, H. M., & Rienhart, A. M. (2006). Reactions to narrative and statistical written messages promoting organ donation. *Communication Reports*, 19, 89-100. doi:10.1080/08934210600918758
- Fisher, W. R. (1984). Narration as a human communication paradigm: The case of public moral argument. *Communication Monographs*, 51, 1-22. doi:10.1080/03637758409390180
- Foucault, M. (1977). *Discipline and punish: The birth of the prison* (A. Sheridan, Trans.). New York: Vintage.
- Gronnvoll, M., & Landau, J. (2010). From viruses to Russian roulette to dance: A rhetorical critique and creation of genetic metaphors. *Rhetoric Society Quarterly*, 40(1), 46-70. doi:10.1080/02773940903413415
- Gross, A. G. (2005). Presence as argument in the public sphere. *Rhetoric Society Quarterly*, 35(2), 5-21. doi:10.1080/02773940509391308
- Gross, A. G., & Dearn, R. D. (2003). *Chaim Perelman*. Albany, NY: State University of New York Press.
- Hanson-Easey, S., Williams, S., Hansen, A., Fogarty, K., & Bi, P. (2015). Speaking of climate change: A discursive analysis of lay understandings. *Science Communication*, 37(2), 217-239. doi: 10.1177/1075547014568418
- Hinote, B. P., & Wasserman, J. A. (2012). The shifting landscape of health and medicine: Implications for childbirth education. *International Journal of Childbirth Education*, 27(2), 69-75.
- Howell-White, S. (1997). Choosing a birth attendant: The influence of a woman's childbirth definition. *Social Science &*

- Medicine*, 45(6), 925-936.
- Iedema, R. (2003). The medical record as organizing discourse. *Document Design*, 4(1), 64-84. doi:10.1075/dd.4.1.07ied
- Keränen, L. (2010). *Scientific characters: Rhetoric, politics, and trust in breast cancer research*. Tuscaloosa, AL: University of Alabama Press.
- Kiene, S. M., Barta, W. D., Zelenski, J. M., & Cothran, D. L. (2005). Why are you bringing up condoms now? The effect of message content on framing effects of condom use messages. *Health Psychology*, 24(3), 321-326.
- Klaus, M. H., Kennell, J. H., & Klaus, P. H. (2012). *The doula book: How a trained labor companion can help you have a shorter, easier, and healthier birth* (3rd Ed.). Boston, MA: DeCapo Press.
- Koerber, A. (2006). Rhetorical agency, resistance, and the disciplinary rhetorics of breastfeeding. *Technical Communication Quarterly*, 15(1), 87-101. doi:10.1207/s15427625tcq1501_7
- Koerber, A. (2013). *Breast or bottle? Contemporary controversies in infant-feeding policy and practice*. Columbia, SC: University of South Carolina Press.
- Kroløkke, C. H. (2010). On a trip to the womb: Biotourist metaphors in fetal ultrasound imaging. *Women's Studies in Communication*, 33, 138-153. doi:10.1080/07491409.2010.507577
- Landau, J. (2011). Women will get cancer: Visual and verbal presence (and absence) in a pharmaceutical advertising campaign about HPV. *Argumentation & Advocacy*, 48, 39-54.
- Landau, J. (2012). Reproducing and transgressing masculinity: A rhetorical analysis of women interacting with digital photographs of Thomas Beatie. *Women's Studies in Communication*, 35(2), 178-203. doi: 10.1080/07491409.2012.724527
- Landau, J., Groscurth, C. R., Wright, L., & Condit, C. M. (2009). Visualizing nanotechnology: the impact of visual images on lay American audience associations with nanotechnology. *Public Understanding of Science*, 18(3), 325-337. doi:10.1177/0963662507080551
- Lantz, P. M., Low, L. K., Varkey, S., & Watson, R. (2005). Doulas as childbirth paraprofessionals: Results from a national survey. *Women's Health Issues*, 15, 109-116. doi:10.1016/j.whi.2005.01.002
- Lay, M. M. (2000). *The rhetoric of midwifery: Gender, knowledge, and power*. New Brunswick, NJ: Rutgers University Press.
- Lay, M. M., Wahlstrom, B. J., & Brown, C. (1996). The rhetoric of midwifery: Conflicts and conversations in the Minnesota home birth community in the 1990s. *Quarterly Journal of Speech*, 82, 383-401. doi:10.1080/00335639609384164
- Meloncon, L. (2013). Visual communication in environmental health: Methodological questions and compromises. *Communication Design Quarterly*, 1(3), 34-37. doi:10.1145/2466489.2466497
- Owens, K. H. (2011). Reviews and reactions: A rhetorical-cultural analysis of The Business of Being Born. *Rhetoric Review*, 30(3), 293-311. doi:10.1080/07350198.2011.581947
- Paliewicz, N. S. (2014). Taking it to the streets: The rhetorical mobility of expert arguments in public settings. *Argumentation and Advocacy*, 51(1), 42-57.
- Perelman, C., & Olbrechts-Tyteca, L. (1969). *The New Rhetoric* (J. Wilkinson & P. Weaver, Trans.). Notre Dame, IN: University of Notre Dame Press.
- Pezzullo, P. C. (2007). *Toxic tourism: Rhetorics of pollution, travel, and environmental justice*. Tuscaloosa, AL: University of Alabama Press.
- Prelli, L. J., & Condit, C. (2013). Projecting Possible Lines of Sight for RSSTM. *Poroi*, 9(1), 1-6. doi:10.13008/2151-2957.1166
- Romano, A. M. (2007). A changing landscape: Implications of pregnant women's internet use for childbirth educators. *Journal of Perinatal Education*, 16(4), 18-24. doi:10.1624/105812407X244903
- Rose, L. M. (2012). Legally public but privately practiced: Segregating the lactating body. *Health Communication*, 27, 49-57. doi:10.1080/10410236.2011.568999
- Rothman, A., & Salovey, P. (1997). Shaping perceptions to motivate health behavior: The role of message framing. *Psychological Bulletin*, 121, 3-19. doi:10.1037/0033-2909.121.1.3
- Rowland, R. (2009). The narrative perspective. In J. A. Kuypers (Ed.), *Rhetorical criticism: Perspectives in action* (pp. 117-142). Lanham, MD: Lexington Books.
- Scott, K. D., Klaus, P. H., & Klaus, M. H. (1999). The obstetrical and postpartum benefits of continuous support during childbirth. *Journal of Women's Health and Gender Based Medicine*, 8, 1257-1264. doi:10.1089/jwh.1.1999.8.1257
- Spoel, P. (2007). A feminist rhetorical perspective on informed choice in midwifery. *Rhetor: Journal of the Canadian Society for the Study of Rhetoric*, 2, 1-25.
- Spoel, P. (2008). Community through health-care websites: Midwifery's online ethos and public communication in Ontario. *Technical Communication Quarterly*, 17(3), 264-288. doi:10.1080/10572250802100360
- Stover, S. A. (2011). Born by the woman, caught by the midwife: The case for legalizing direct-entry midwifery in all fifty states. *Health Matrix: Journal of Law-Medicine*, 21, 307-351.
- Thompson, R. (2012). Looking healthy: Visualizing mental health and illness online. *Visual Communication*, 11(4), 395-420. doi:10.1177/1470357212453978
- Tversky, A., & Kahneman, D. (1981). The framing decisions and the psychology of choice. *Science*, 211, 453-458. doi:10.1126/science.7455683
- Winterbottom, A., Bekker, H. L., Conner, M., & Mooney, A. (2008). Does narrative information bias individual's decision making? A systematic review. *Social Science & Medicine*, 67, 2079-2088. doi:10.1016/j.socscimed.2008.09.037

Assessing the Accuracy of Trauma Patient Prioritization: Communication Design of the M.I.S.E.R Information System Protocol and Communication Channel during Crisis Communication Exchanges

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ABSTRACT

This study sought to investigate the effectiveness of an information exchange protocol (M.I.S.E.R) designed to increase the effectiveness of messages pertaining to rural trauma patients and triage prioritization. Trained coders were randomly assigned to three conditions; audio, transcript, and transcript and audio. Participants coded several hundred actual information exchanges between first responders and medical command operators. Findings confirm the effectiveness of the M.I.S.E.R. information exchange protocol as well as the effectiveness of exchanging crisis messages via two-way radio as compared to having a transcript of the call or both audio recordings and transcripts. Implications for communication design, healthcare practitioners, and effective modes for exchanging crisis communication messages are presented.

Categories and Subject Descriptors

H.0 Information Systems: General

General Terms

Documentation, Design

Keywords

Communication Design, First Responder Communication, Triage Communication, Trauma Medicine, Medical Communication, Health Communication, Crisis Communication, Patient Safety

INTRODUCTION

Medical error and patient safety are two aspects of healthcare that have received an abundance of attention from scholars and healthcare providers. In a report from the Joint Commission on Accreditation of Health Care (2012), 2,455 sentinel events (i.e., an event causing or risking serious injury or death to the patient) were analyzed for root-cause analysis. Of these, 60% were directly related to communication. Of this 60% of communication-related sentinel events, 75% resulted in death. Such error is not necessarily due to medical incompetence but due to the inherent power differences embedded in the culture of medicine—power differences which prevent appropriate and effective communication. More specifically, according to Pronovost (2010) in his analysis of errors within hospitals, 90% of the time a mistake is made someone in the room or at the scene knew that the mistake was being made yet failed to speak up or publically dissent. The main reason cited was the hierarchical power structure of the healthcare system that suppresses dissent from subordinates. Such embedded cultural practices demonstrate the existence of “sets of competing discourses and practices within situations characterized by the unequal distribution of power” (Taylor, 2003, p. 555-559). As these data indicate, effective communication system design is vital to patient safety, which has resulted in an abundance of resources being employed within hospitals in the form of education and training.

However, the pre-hospital processes regarding communication and error are all but ignored in existing literature. Yet, pre-hospital processes influence the survival of the patients. Given that communication failures in medicine can be due to an established hierarchically structured communication design within the healthcare system (Leonard, Graham, & Bonacum, 2004) and that pre-hospital care scenarios are generally crisis-filled and time-dependent, focusing research efforts on pre-hospital communication processes becomes an imperative. According to Ramanujam, Keyser, and Sirio (2005):

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Communication Design Quarterly. ACM SIGDOC, New York, USA.
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The challenge of patient safety is not only clinical, but also organizational. To succeed, patient safety initiatives must be designed and executed using change management principles such as congruent changes targeting multiple components, specific change management roles of different participants in the care delivery process, implementation through dedicated support structures and multiple tactics and institutionalization through enhanced work force capabilities and opportunities for continuous learning. (p. 455)

The current study sought to create and assess a comprehensive communication design focusing on pre-hospital care and effective trauma prioritization.

The exchange of information during crises is something that has been studied in other disciplines (e.g., the aviation industry). Reason (1990) argued that anytime people make decisions under pressure, standardization of information exchange can serve to enhance accuracy of information and thus increase patient safety. It is difficult to standardize information in the pre-hospital arena given the differences in both the medical and communication training backgrounds of the various medical personnel involved. Some sort of standardized communication design that also integrates the specific contextual parameters needs to be developed. Talbot and Bleetman (2007) reported that only 19.4% of ambulance personnel receive any formal training in standardization of information exchange. The majority of training provided to pre-hospital personnel is from *Mosby's Paramedic Textbook* (Sanders, Lewis, & Quick, 1994) which recommends that information rely on the SOAP system: Subjective (i.e., symptoms, past history and allergies), Objectives (i.e., examination and vital signs), Assessment (i.e., clinical impression), and Plan (i.e., patient management). Similar to the power differences observed between physicians and nurses as well as other inter-hospital personnel, so too do power differences exist among pre-hospital personnel such as the EMT-Basic and the EMT-Paramedic. Such ingrained cultural power differences, if not addressed as part of any large communication design effort, will result in unnecessary liability via poor information exchange—and thus an increased threat to patient safety.

The vast majority of error occurs when (mis)information is relayed from one care provider to another. In the treatment of any given patient, there are a number of patient hand-offs that occur during pre-hospital treatment. Each time this occurs, essential information needs to be relayed completely and concisely. According to the Joint Commission Handbook (2006) the primary objective of a 'hand-off' is to provide accurate information regarding the patient's treatment, services, current condition, and any recent or anticipated changes in the patient's status. In light of educational, power, and status differences among healthcare providers, many barriers to effective hand-off communication need to be addressed. One such area is that of hand-off communication during pre-hospital treatment. Problematic communication in pre-hospital treatment significantly impacts subsequent inter- and intra-hospital treatment. This is exacerbated when dealing with trauma patients as injuries in such cases vary greatly.

In the care of the trauma patient, the importance of efficient triage is predicated on the Golden Hour of Trauma. That is, if the patient is treated within the first hour of trauma, there is a 10% mortality rate versus a 75% mortality rate if treatment occurs between one and eight hours (Cowley, 1975). Although these numbers,

originally derived from WWI casualties, are dated, it is safe to assume that timely treatment is critical to survival rates. Therefore, communication between and among pre-hospital team members is critical in efforts to provide efficient and proper triage. According to the American College of Surgeons (1993), 50% of trauma patients are over-triaged with an estimated 5-10% of trauma patients being under-triaged. That is, patients will either be prioritized as being more injured than they actually are or be prioritized as not being as injured as they actually are. It is believed that effective and appropriate triage can result in a 15-20% reduction in death rates as well as significant financial and resource savings (Jurkovich & Mock, 1999).

One additional complication to effective and efficient triage is the environment in which treatment is administered. More specifically, rural trauma patients, when compared to their urban counterparts, experience higher fatality rates from otherwise non-fatal injuries. The reasons include delays in reporting, limited access to definitive care, and lack of infrastructure (e.g., lack of modern highway systems, etc.) (Rogers, Shackford, Osler, Turner, Vane, & Davis, 1999; Waller, Curran, & Noyes, 1964). Recently, several studies have looked at inter-hospital processes revealing that effective and appropriate communication training programs significantly decrease the time it takes to transfer a trauma patient between healthcare facilities with limited resources to facilities that provide definitive care (Avtgis & Polack, 2013; Kappel, Rossi, Polack, Avtgis, & Martin, 2011). While this research into inter-hospital processes has resulted in improved care, little research has been conducted on first-responder communication or pre-hospital communication, which are vital for the initial treatment of the patient and directly impact medical outcomes. More specifically, comprehensive communication design must be developed and utilized as standard protocol in order to have a systematic effect on improving patient treatment.

COMMUNICATION AND MEDICAL PRIORITIZATION

The need for effective and appropriate trauma prioritization is not only vital for patient care but it also has an effect on the entire healthcare system both financially and operationally. According to the American College of Surgeons Committee on Trauma (1993) and Sassu et al. (2009), the trauma triage criteria for prioritization is based on

- physiologic (e.g., What are the vital signs?),
- anatomic (e.g., Where on the body did the injuries occur?),
- mechanism of injury (e.g., How did the injury occur?), and
- other risk factors (e.g., pregnancy, mental disorder, intoxication).

In a study of trauma prioritization by Kouzminova, Shatney, Palm, McCullough, and Sherck (2009), 20,332 trauma cases were analyzed for activations for major trauma (Priority I) and minor trauma (Priority II). The findings indicated that 588 were activations for major trauma and 14,451 were activations for minor trauma. The cost differential between Priority I and Priority II is approximately \$3,726 per patient. It was estimated that more accurate prioritization would save the trauma center approximately \$53 million over a 10-year period. Such profound impact on both safety and financial fronts makes the communication exchanges that are used to determine trauma prioritization that much more critical, and an area where health communication scholarship can make a profound impact.

One such way to increase accuracy and timely exchange of information is through the development of a mnemonic device. Leonard et al. (2004) developed one of the first acronyms for use in an obstetrics ward within one of the largest managed care health maintenance organizations (HMOs) in the United States. Their approach centered on the notion that simple rules are best when faced with complex environments. The **S**ituation, **B**ackground, **A**ssessment, and **R**ecommendation acronym proved successful and provided evidence for the development and use of other acronyms in the practice of medicine and healthcare (Leonard et al., 2004).

Another acronym development effort showed improved information exchange within an ambulance service in South Wales, Australia (Trauma Triage Tool, 2001). M.I.S.T --**M**echanism of injury, **I**njury to the patient, vital **S**igns, and response to **T**reatment. worked well for ambulance service in Australia. However, given that there are many aspects of pre-hospital care beyond ambulance service, other acronyms specific to standardizing information unique to the type of crises and environment need to be developed. With this in mind, Kappel et al. (2011) developed M.I.S.E.R. (**M**echanism of injury, **I**njury to the patient, vital **S**igns, **E**nvironment, and **R**esponse to treatment) to reflect the rural environment of West Virginia in the treatment and triage of the trauma patient. This acronym was developed based on the assumption that these types of information would be vital in transferring the patient to a definitive care facility. The exigence for the M.I.S.E.R. system came from findings from a West Virginia STAR (State Trauma Audit Review) report. STAR, a continuous quality improvement process, found communication-related issues have a significant impact on the quality and accuracy of trauma care. This was further evidenced by emergency radio transmission conversations being overly complex, unfocused, and without consistent structure. As such, the current study sought to increase the efficiency of communication from field personnel to medical command in an effort to derive correct prioritization via the employment of the M.I.S.E.R. information system. In addition, the study also sought to investigate the influence that different modes of communication have on the quality of information exchange and accurate prioritization determination. Therefore, the following Hypothesis and Research Question were posed:

H1: Providing information per the M.I.S.E.R information system will result in greater accuracy of trauma prioritization determination than information not compliant with the M.I.S.E.R. criteria.

RQ1: Do communication channels influence the amount of information consistent with the M.I.S.E.R. information system?

METHOD

Participants and Procedures

Fourteen people (4 males; 10 females) attending a graduate course in Medical Communication at a large university in the mid-Atlantic region of the United States were utilized as subjects for assessing the M.I.S.E.R. application and priority determination. The subjects participated in the study as a course requirement. Given the goals of the study was coding communication exchanges between first responders and medical command operators to assess M.I.S.E.R. elements, quality of exchange, and triage prioritization, the researchers believed that the participants selected for this study were appropriate. Participants did not need to be practicing medical personnel; they simply needed to be trained in the M.I.S.E.R. system and triage prioritization. The participants' college majors were pre-med (n = 2), journalism (n = 1), and communication

studies (n = 11). All subjects were required to be Health Insurance Portability and Accountability Act (HIPAA) compliant before the trainings occurred.

All participants attended two 2-hour trainings (approximately three weeks apart) in the M.I.S.E.R. category system (**M**echanism of injury, **I**njury to the patient, vital **S**igns, **E**nvironment in which the accident occurred, and the patient's **R**esponse to treatment). The training consisted of two sessions in which participants reviewed a coding sheet to determine what constitutes Priority I from Priority II trauma designation as well as the dimensions of the M.I.S.E.R. information system and definitions. A sampling of radio conversations from first responders to the Medical Command Communicators were used to differentiate effective communication (i.e., information that contains all of the M.I.S.E.R. elements) from ineffective communication (i.e., information that is incomplete and does not address all of the M.I.S.E.R. elements) as well as to practice accurate trauma prioritization. Once there was 100% agreement as to which M.I.S.E.R. categories were addressed/omitted as well as accurate trauma prioritization for the sample communication exchanges, the training was concluded. At the conclusion of the second training, participants were randomly assigned to one of three conditions: a) an audio only (n = 5; 386 cases); b) transcript only (n = 5; 485 cases); c) both audio and transcript (n = 4; 389 cases). Each participant was instructed to not speak to any other participants regarding the cases through the duration of the study. Participants were provided with a compact disk that contained the cases to be analyzed, coding forms for each case and instructions to return the materials within one week. Given the number of cases, the researchers decided to provide the cases to the participants in three installments such that when the previous week's materials were returned, new material was provided until all of the cases were analyzed.

The M.I.S.E.R. information system was assessed through a series of questions resulting in:

- dichotomous data (i.e., did or did not contain the particular element)
- ratio-level data (i.e., data that has an absolute zero point and equal distance between data points resulting in a scale ranging from 1-10 for each element of the M.I.S.E.R)
- a composite score for all five elements of the criteria, overall call quality, call effectiveness, and call appropriateness (within a possible range from 0-150).

Call effectiveness and call appropriateness was adapted from the Spitzberg and Cupach (1984) interpersonal communication competence concepts of being able to successfully achieve one's interpersonal goals (i.e., effectiveness) while doing so without a loss of face to the other person (i.e., appropriateness). The presence or absence of these two factors coupled with the five M.I.S.E.R. elements determined the overall call quality.

RESULTS

Hypothesis 1 sought to investigate whether or not information that met the M.I.S.E.R information system resulted in a more accurate trauma prioritization determination. Chi Square tests were utilized where the participant rating of the information were separated into complete and incomplete M.I.S.E.R. compliant and correct and incorrect trauma prioritization determination. Results indicated

significant differences ($\chi^2 [1, N = 1259] = 10.13$); cases lacking complete M.I.S.E.R. information were appropriately prioritized 61.4% of the time whereas 71.4% of the cases were appropriately prioritized when M.I.S.E.R. information was complete. Therefore, Hypothesis One was supported.

Research Question 1 sought to investigate the influence that communication channel has on the amount of information consistent with the M.I.S.E.R. information system. One-way analysis of variance (ANOVA) with post hoc follow-up analysis (using Sheffé's method) where appropriate indicate significant differences among the various media channels and overall M.I.S.E.R. information quality ($F [2, 155] = 9.10, p < .001$). Audio significantly improved overall M.I.S.E.R. information quality as compared to both transcript and transcript with audio (see Table 1).

Focusing on each individual element of the M.I.S.E.R. information system, significant differences were observed for all four elements. Mechanism of injury ($F [2, 1257] = 3.70, p < .05$) indicated overall significant differences among audio, transcript, and transcript with audio (see Table 1). Although the F-test was significant, the follow-up comparisons (Sheffé) were not. This may be due to the fact that the Sheffé follow-up test is most conservative as it corrects for all pair-wise mean comparisons as well as complex comparisons as it attempts to control the overall alpha level. Significant differences were observed for injury information on the patient ($F [2, 1256] = 7.83, p < .01$) with audio reporting significantly more injury to the patient than either transcript or transcript with audio (see Table 1). Significant differences were observed for vital signs ($F [2, 1257] = 3.52, p < .05$). However, the follow-up comparisons indicated no significant differences among audio, transcript, or transcript with audio (see Table 1). For the environment, significant differences

were also observed ($F [2, 1256] = 31.23, p < .001$) with audio and transcript conditions reporting significantly greater information about the environment than the transcript with audio. For response to treatment, significant differences were observed ($F [2, 1257] = 5.63, p < .01$) with audio reporting significantly more information regarding response to treatment than either transcript or transcript with audio (see Table 1).

A series of ANOVA tests with post hoc follow-up comparisons (Sheffé) were conducted on only cases that were both properly prioritized and contained all of the M.I.S.E.R. information to investigate media channel differences. Results indicated significant differences in overall M.I.S.E.R. information ($F [2, 219] = 48.24, p < .001$) with audio and transcript reporting significantly greater overall M.I.S.E.R. information than transcript with audio (see Table 2). The specific categories of the M.I.S.E.R. revealed significant differences among all elements with mechanism of injury ($F [2, 219] = 29.44, p < .001$) in that both audio and transcript reported significantly more information than transcript with audio (see Table 2). Significant differences were observed for injury to patient ($F [2, 219] = 24.94, p < .001$) with audio and transcript reporting significantly more information than transcript with audio (see Table 2). For vital signs, significant differences were observed ($F [2, 219] = 23.10, p < .001$) with audio and transcript reporting significantly more information than transcript with audio (see Table 2). Environment also revealed significant differences ($F [2, 219] = 14.63, p < .001$) with audio and transcript reporting significantly more environmental information than transcript with audio (see Table 2). Finally, significant differences were observed for response to treatment ($F [2, 219] = 52.80, p < .001$) with audio and transcript with audio reporting significantly more information than transcript with audio (see Table 2).

Table 1 One Way Analysis of Variance of Media Channels and M.I.S.E.R for All Cases

Channel	Overall miser	Mechanism of injury	Injury	Vital signs	Environment	Response to treatment
Audio	93.03***	22.29	23.95**	22.64	9.25	14.90**
Transcript	86.18	20.89	22.06	21.40	9.00	12.80
Transcript and audio	83.62	22.32	22.35	22.92	3.84***	12.19
Note: Means with no subscripts in common differ at a statistically significant level according to Sheffé (* = $p < .05$; ** = $p < .01$; *** = $p < .001$).						

Table 2 One Way Analysis of Variance of Media Channels for Properly Prioritized Cases Containing Complete M.I.S.E.R Information

Channel	Overall miser	Mechanism of injury	Injury	Vital signs	Environment	Response to treatment
Audio	125.76	25.78	25.65	26.08	23.43	24.82
Transcript	126.19	26.34	25.13	25.96	23.86	24.91
Transcript and audio	94.87***	19.85***	19.44***	20.87***	18.03***	16.69***
Note: Means with no subscripts in common differ at a statistically significant level according to Sheffé (* = $p < .05$; ** = $p < .01$; *** = $p < .001$).						

DISCUSSION

The need for appropriate triage is contingent on the ability of important and relevant information to be communicated from field to medical command. The unique aspects of rural trauma, with its environmental and resource challenges, make such communication that much more important in the proper triage of the trauma patient. Taken as a whole, the results reveal that M.I.S.E.R. is an effective information system for relaying pertinent trauma patient information from the field. The 10% increase in correct triage prioritization when all elements of the M.I.S.E.R. were present reveals the importance of having such information present in prioritization determination. This finding is consistent with Reason's (1990) argument that when people are in chaotic and fast paced situations, it is best to follow standardized communication protocols. This is also consistent with the findings of Leonard et al. (2004) and the testing of the Trauma Triage Tool (2001) that simple rules are best when faced with complex environments. Our study focusing on pre-hospital trauma care in rural areas would constitute such an environment.

The Research Question sought to investigate the degree to which communication channels influence the efficiency of M.I.S.E.R. information exchange. Overall, the audio channel, closely followed by the transcript channel, significantly out-performed the transcript and audio channel on three of the five M.I.S.E.R. categories. This suggests that information exchange during crisis communication situations can actually be inhibited by information redundancy via different communication channels (i.e., having the information in both audio and transcript versions). For whatever reason, the written transcripts coupled with the audio of the information exchanges served to greatly detract from both the amount of information as well as the ability to properly prioritize the patient. One viable explanation is that in crisis situations, too much information—whether redundant or not—can serve to overwhelm the receiver of the message and as such, information should be adherent to parsimonious protocols (e.g., M.I.S.E.R.) whenever possible. These findings indicate that radio communication is an adequate mode of communication when relaying information from the field to medical command. We contend that it may be the ability of the Medical Command Communicator to distinguish the meta-communicative messages (e.g., relaying information in a tone of voice that signals uncertainty) that allow the medical command operator to prompt field personnel for additional information thus resulting in interpreting greater amounts of relevant information. This is seen to a lesser degree in the transcript channel and to a large degree in the combined transcript with audio channels. Perhaps there is a confounding effect on information due to the multiple modalities of communication channels and should be a factor to consider in future research studies.

The findings from the analysis of correct prioritization revealed significant increases in total amount of M.I.S.E.R. information present compared with correct prioritization was determined with incomplete M.I.S.E.R.. More specifically, when correct triage prioritization was achieved, audio M.I.S.E.R. information increased 32.72, transcript increased 40.01, and transcript with audio increased 11.25. Thus, it can be concluded that information acronyms developed for specific crisis communication situations (e.g., relaying information on a trauma patient) increases patient safety and reduces cost via proper triage prioritization. However, even with these dramatic increases in overall M.I.S.E.R. information, the data for the environment category increased modestly (audio [+14.18], transcript [+14.86], transcript with audio [+14.19]). Clearly, correct

prioritization is closely related to not only the amount of information being relayed but also the types of information relayed. This modest increase across all communication modalities regarding environment may indicate that the environment category may simply not be as important in the triage prioritization process than information regarding mechanism of injury, injury, vital signs, and patient response to treatment. Future assessment of the M.I.S.E.R. protocol should investigate relative importance of each category.

IMPLICATIONS FOR COMMUNICATION DESIGN

The results of this study have several implications for efforts targeting the intersection of technology and human interaction. First, embedded power structures at all levels of a system need to be recognized and accounted for, as any lack of acknowledgement of power and how it influences communication practice will inevitably influence communication effectiveness. Such embedded power structures were exposed in a study analyzing perceptions of interactions between trauma surgeons at definitive care medical facilities and doctors at referring medical facilities (Kappel et al., 2011). When designing such systems, organizational intelligence has to be assumed at all levels of the organization and among all members of that organization (in this case, ranging from the EMT-Basic to Medical Command Communicators).

Technology and media can only account for certain facets of communication effectiveness. As demonstrated in this study, technology and particular combinations of media can actually serve to confound effectiveness. With that said, we believe that a certain degree of human communication competence is a necessary condition and needs to be coupled with appropriate technological communication. If we simply view technology as the sole purveyor of information, we miss the fact that the information being created is being done by a human being and thus, a level of communication competence congruity between humans and technology needs to be addressed. In the current study, effectively using the M.I.S.E.R. information system is better served with a rather “archaic” communication technology system; two-way radio transmission.

Finally, information and information systems have to be designed to be as novel and organic as the situation or contexts in which they are employed. In the current study, given that we were investigating trauma in rural areas, environment and the mechanism of injury become important factors that would otherwise be less important when investigating trauma cases in urban environments. Taken as a whole, the findings of this study reveal the efficacy of implementing a communication design that involves the praxis of human and technological elements while also accounting for embedded power structures.

Moving forward, acronyms such as the M.I.S.E.R. should be adapted and assessed in other high intensity crisis-oriented professions (e.g., military, police, 911 calls, fire) where time-restriction warrants exact and concise information transfer in the most efficient way possible. One may see such efforts as being a function of the respective professions. However, as evidenced in the current study, such communication design is a function of communication and as such, communication researchers are best equipped to develop and implement such systems.

REFERENCES

- American College of Surgeons (1993). *Resources for optimal care of the injured patient*. Chicago IL: American College of Surgeons.
- Avtgis, T. A., & Polack, E. P. (2013). Coming full circle in rural trauma: Chronicling the development and testing of communication systems in rural trauma networks. In R. Ahmad & B. Bates (Eds.), *Health communication and mass media*. Burlington, VT: Gower Publishing.
- Cowley, R. A. (1975). A total emergency medical system for the state of Maryland. *Maryland State Medical Journal*, 24, 37-45.
- Joint Commission on Accreditation of Health Care Organizations (2006). *National patient safety goals: Critical access hospital and hospital national safety goals*. Retrieved from http://www.jointcommission.org/GP/NPSG/06_NPSG_CAH.htm
- Joint Commission on Accreditation of Health Care Organizations (2012). *Sentinel events statistics*. Retrieved from www.jcaho.org/accredited+organizations/ambulatory+care/sentinel+events/sentinel+event+statistics.htm
- Jurkovich, G. J., & Mock, C. (1999). Systematic review of trauma systems effectiveness based on registry comparisons. *Journal of Trauma*, 47, S46-S55.
- Kouzmanova, N., Shatney, C., Palm, E., McCullough, M., & Sherck, J. (2009). The efficacy of a two-tiered trauma activation system at a Level I trauma center. *Journal of Trauma: Injury, Infection, & Critical Care*, 67, 829-833.
- Kappel, D. A., Rossi, D. C., Polack, E. P., Avtgis, T. A., & Martin, M. M. (2011). Does the RTTDC (rural trauma team delivery course) shorten the interval from trauma patient arrival to decision to transfer. *Journal of Trauma – Injury, Infection, & Critical Care*, 70, 315-319.
- Leonard, M., Graham, S., & Bonacum, D. (2004). The human factor: The critical importance of effective team work is communication in providing safe care. *Quality Safety Health Care*, 13, 185-190.
- Pronovost, P. (2010). People's pharmacy podcast (NPR 7-26-10). Retrieved from www.peoplespharmacy.com
- Ramanujam, R., Keyser, D. J., & Sirio, C. A. (2005). Making a case for organizational change in patient safety initiatives. *Advances in Patient Safety*, 2, 455-465.
- Reason, J. (1990). *Human error*. New York: Cambridge University Press.
- Rogers, F. B., Shackford, S. R., Osler, T. M., Turner, M., Vane, D. W., & Davis, J. H. (1999). Rural trauma: Challenge for the next decade. *Journal of Trauma: Injury, Infection, and Critical Care*, 47, 802.
- Sanders, M. J., Lewis, L. M., & Quick, G. (1994). *Mosby's paramedic textbook* (2nd ed.). Philadelphia, PA: CV Mosby.
- Sassu, S. M., Hunt, R. C., Sullevent, E. E., Wald, M. M., Mitchko, J., Jurkovich, G. J., Henry, M. C., Salomone, J. P., Wang, S. C., Galli, R. L., Cooper, A., Brown, L. H., & Sattin, R. W. (2009). Guidelines for field triage of injured patients: Recommendations of the national expert panel in field triage. *MMWR Recomm Report*, 58 (RR-1), 1 – 35.
- Spitzberg, B. H., & Cupach, W. R. (1984). *Interpersonal communication competence*. Beverly Hills, CA: Sage.
- Talbot, R., & Bleetman, A. (2007). Retention of information by emergency department staff at ambulance handover: Do standardized approaches work? *Emergency Medical Journal*, 24, 539-542.
- Taylor, J. S. (2003). Confronting culture in medicine's, "culture of no culture." *Academic Medicine*, 78, 555-559.
- Trauma Triage Tool (2001). Trauma triage tool: Major trauma criterion. Retrieved from syd-em.alphastudy.com/sites/document/goto/index.php?url=%2FMIST_Trauma-Triage_Tool.pdf.
- Waller, J. A., Curran, R., & Noyes, F. (1964). Traffic deaths: A preliminary study of urban and rural fatalities in California. *California Medicine*, 101, 272-276.

Book reviews

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***Rhetoric in the Flesh: Trained Vision, Technical Expertise, and the Gross Anatomy Lab.* T. Kenny Fountain. New York, NY: Routledge, 2014. 242 pp.**

Invaluable and expansive work has gone into exploring how health and medical experts perform within their professional workplaces and in the public, communicating with each other and with patients (Barton & Eggly, 2009; Graham & Herndl 2013; Hausman, 2000; Heiffferon & Brown, 2008; Munger, 2000; Schryer, Lingard, Spafford, & Garwood, 2003; Teston, 2009, 2012), but, much less scholarship has focused on how these medical experts *become* medical experts. To be fair, Schryer and Spoel (2005), Schryer (1994), and Hunter (1991) have critically and rhetorically addressed medical education contexts and the training of healthcare providers. But little to no scholarship in rhetoric and technical and professional communication (TPC) has looked at how medical education trains providers to see, know, and enact medical knowledge. It is here that T. Kenny Fountain's new book, *Rhetoric in the Flesh: Trained Vision, Technical Expertise, and the Gross Anatomy Lab* fills a substantial gap in the scholarly work on rhetoric of medicine and health. That is, understanding how pre-medical and medical students are inculcated through cadaver labs via what Fountain calls "trained vision" and "embodied rhetorical action" allows TPC and allied scholars to better understand how and why healthcare providers approach their practice, communication, and patients in the ways they do. Taking up ongoing scholarly conversations regarding postmodernism and new materialsms, Fountain takes on difficult questions of seeing, looking, knowing, and enacting in attempt to reconfigure how we might consider these in relationship and opposition to each other.

Largely, this book provides new insights into the role of a variety of visuals in the development of technical expertise through the study

of two anatomy cadaver labs—one for medical students, the other for undergraduates. Fountain investigates how experts learn “to see, think, and even embody knowledge” through bodies, visuals, and vision (p. 124). In so doing, this book works toward redefining notions of subjects and objects through embodied rhetorical action which Fountain explains as, “the connection of objects, discourses, lived bodies, and embodied practices—an object-body environment intertwining—that develops in participants the skilled vision that makes all technical and professional knowledge possible” (pp. 14-15).

In total, *Rhetoric in the Flesh* includes eight sections that cover a spectrum of cadaver lab experiences. These sections each rely on and develop the concepts of embodied rhetorical action and trained vision including the use of anatomical guides for dissection and instruction, the interaction between students and “hands-on visuals,” and the ethical questions and implications of using human bodies as tools for the development of technical expertise. Additionally, each chapter ends with concluding thoughts on how the book’s insight can be operationalized in TPC contexts. Drawing on a variety of scholarship from classical rhetoric, TPC, medicine, anthropology, and cognitive science, *Rhetoric in the Flesh* meets the needs of an interdisciplinary audience.

From page one, Fountain wastes no time in addressing one of the major and recurring questions in the book: where is the divide (is there one?) between subject (lived-in bodies) and object (cadaveric bodies) in anatomical cadaver labs? Like many scholars in rhetoric of medicine and science and technology studies, Fountain seems acutely aware of the subject-object binary and the new materialist approaches that in many ways challenge rhetorical theory. In particular, he questions how students in cadaver labs must negotiate subjects and objects when, at times, human bodies are simultaneously subjects and objects. He argues, “we perceive, think, move, and feel through our whole bodily interactions and corporeal entanglements with the world around us ... we are an assemblage made of bodies, objects, documents, discourses, and displays” (p. 49).

Subjects and objects are further called into question through examination of multimodal displays such as the Netter’s *Atlas of*

Anatomy, an anatomical guide that students use as a reference and instruction manual to guide dissections. He argues that these guides are “tools for action” with both didactic and authenticating value, explaining how, respectively, these two types of displays offer affordances through the merging of the user and the object (p. 62). He explains:

we enact an object’s information through our physical, embodied interactions with that object’s affordances, which are opportunities for action that emerge from the mutual contact between object-ness of the object and our bodily capacities for perception, movement, interpretation, and meaning making. (p. 92)

Essentially, Fountain asserts that through embodied rhetorical action with these multimodal objects of the cadaver lab, students develop the trained vision necessary to “see, move, and be” (p. 92). He further explores these ways of *doing* in the anatomy lab in sections on “haptic gaze,” (Prentice, 2007) the sight gained through physical touch and embodied practices to explain how students learn anatomy and trained vision through not only sight but physical interactions with visuals of the cadaver lab. Here, Fountain calls on readers to reevaluate visuals in terms of material practices, highlighting that these material practices are what ultimately authorize visuals to have pedagogical implications.

Even more, Fountain examines the “making” and “unmaking” of bodies through dissection. It is through this process that students fully develop trained vision; students must learn to see and know the anatomical body by revealing it through visual and haptic activities in the cadaver lab. In comparing the public displays of *Body Worlds* to the cadavers in the dissection labs, Fountain provides meaningful insight into how students developed their trained vision through “skilled perspective” that is “ontological, epistemological, and aesthetic.” Interestingly here, Fountain notes that perspective can be at once both epistemological and ontological—an argument that seems outright contradictory. If ontological approaches require that we move beyond perspectives and knowing, how might a perspective be ontological? Fountain clarifies then, arguing,

Anatomical dissection not only trains their eyes, hands, and bodies to respond to cadavers in a manner structured by their budding expertise, but it also trains them to conceive of the body as a contradictory object and subject that is anatomical and philosophical, scientific and aesthetic, biological and personal. (p. 145)

In what I consider one of the most intellectually challenging sections of the book, Fountain pushes readers to simultaneously juggle epistemology and ontology as parts of the same whole, a task I'm not sure is possible. In so doing, he often uses and draws conclusions about both epistemology and ontology, though he never explicitly makes these arguments or defines how he is using these terms for readers. No doubt, with his continual turn toward TPC's relationship to cognitive science, Fountain is more concerned with how we might engage productively and collaboratively with scholarship in cognitive science directly, instead of making the interaction of epistemic and ontological work central. Nonetheless, epistemology and ontology underscore a substantial portion of Fountain's arguments.

While ontological questions are occasionally raised, particularly when discussing "embodied practices of demonstration, dissection, and observation ... [to] enact this anatomical body," Fountain relies on an epistemological binary to answer these questions, reinforcing notions of the knower and the known (Mol, 2003). *Rhetoric in the Flesh* leaves unanswered questions about how we might fully understand cognitive and pedagogical environments in ontological ways. The muddying of epistemology and ontology can be at times difficult throughout the book, but challenges readers to consider how our bodies are "more than just material inscribed by discourse" and are instead "our means of making sense of such discourse and our capacity for action" (p. 13). At times, it is difficult to disentangle epistemological and ontological arguments in *Rhetoric in the Flesh*, though this may be Fountain's intention given the ongoing new materialist conversations.

From beginning to end, *Rhetoric in the Flesh* returns to the notions of embodied rhetorical action and trained vision to help readers understand the complexities of seeing, knowing, and being the human body as both subject and object while deftly exploring the

entanglements of the lived body, the cadaveric body, and multimodal displays within these labs. Though *Rhetoric in the Flesh* may leave some questions unanswered about epistemology and ontology, I'd like to end with pointing out some of the invaluable insight, questions, and discussions that Fountain's book evokes. As Fountain summarizes, "in any technical domain, the multimodal displays that instantiate and facilitate expertise operate as rhetorical objects that induce in participants actions and attitudes, **ways of seeing, moving, and being in the world** [emphasis added]" (p. 92). Therefore, learning isn't just epistemological. Instead, Fountain uses "enact" to complicate learning as both epistemological and ontological (p. 28). Fountain shows the learning process in the anatomy lab is complex; anatomy students must *look at* and learn through multimodal displays, bodies, and even locations (p. 146) as well as *enact* and *embody* this knowledge by touching, exploring, and organizing bodies, both cadavers and lived. Understanding how these students develop trained vision and learn through embodied rhetorical action allows readers to draw larger connections about how healthcare professionals are educated and why and how they see, work with, treat, and communicate with patients/patient bodies. Not only does Fountain make an excellent contribution to the field with *Rhetoric in the Flesh* as it offers a theoretically rich dialogue between epistemology and ontology, it is an excellent tool for and about classrooms, for teaching, and for learning that can be applied both in TPC and across the disciplines.

REFERENCES

- Barton, E., & Eggly, S. (2009). Ethical or unethical persuasion? The rhetoric of offers to participate in clinical trials. *Written Communication*, 26(3), 295-319.
- Graham, S. S., & Herndl, C. (2013). Multiple ontologies in pain management: Toward a postplural rhetoric of science. *Technical Communication Quarterly*, 22(2), 103-125.
- Hausman, B. L. (2000). Rational management: Medical authority and ideological conflict in Ruth Lawrence's breastfeeding: A guide for the medical profession. *Technical Communication Quarterly*, 9(3), 271-289.

- Heiffler, B., & Brown, S. C. (Eds.). (2008). *Rhetoric of healthcare: Essays toward a new disciplinary inquiry*. Cresskill, New Jersey: Hampton Press.
- Hunter, K. Montgomery (1991). *Doctors' stories: The narrative structure of medical knowledge*. Princeton, NJ: Princeton University Press.
- Mol, A. (2003). *The body multiple: Ontology in medical practice*. Durham, NC: Duke University Press.
- Munger, R. (2000). Evolution of the emergency medical services profession: A case study of EMS run reports. *Technical Communication Quarterly*, 9(3), 329-346.
- Prentice, R. (2007). Drilling surgeons: The social lessons of embodied surgical learning. *Science, Technology, & Human Values*, 32(5): 534-553.
- Schryer, C. F. (1995). The lab vs. the clinic: Sites of competing genres. In A. Freedman & Peter Medway (Eds.), *Genre and the new rhetoric* (82-103). London: Taylor and Francis.
- Schryer, C. F., Lingard, L., Spafford, M., & Garwood, K. (2003). Structure and agency in medical case presentations. In C. Bazerman & D. R. Russell (Eds.), *Writing selves/writing societies: Research from activity perspectives* (62-96). Fort Collins, CO: The WAC Clearing House and Mind, Culture, and Activity.
- Schryer, C. F., & Spoel, P. (2005). Genre theory, health-care discourse, and professional identity formation. *Journal of Business and Technical Communication*, 19(3), 249-278.
- Teston, C. B. (2009). A grounded investigation of genred guidelines in cancer care deliberations. *Written Communication*, 26(3): 320-348.
- Teston, C. (2012). Moving from artifact to action: A grounded investigation of visual displays of evidence during medical deliberations. *Technical Communication Quarterly*, 21(3), 187-209.