To Whom Do We Speak? The Audiences for Scholarship on the Rhetoric of Science and Technology

Leah Ceccarelli
Department of Communication, University of Washington
Seattle, WA, USA

Poroi 9,1 (April 2013)

The charge given to scholars in this special issue was to look at recent work on the rhetoric of science and technology to project our field's "horizons of possibility." I should note that before beginning this paper, I had just finished writing a book on the problems that arise when scientists imagine themselves as frontiersmen pushing ever forward toward new "horizons" of knowledge (Ceccarelli, 2013). So the prospect of imagining our future as a space of opportunity to be entered and productively developed made me a bit apprehensive.

However, after examining some of the most recent work on rhetoric of science and technology, it became clear that I had no need to worry; the self-image of the rhetorician developed in our literature is nothing like the competitive, risk-taking, rugged explorer and exploiter of terrain that I had found so enthusiastically set out by scientists as their preferred persona. In fact, it turns out that the central problem for rhetoricians is not that we present ourselves as overly aggressive transformers of all we survey, but that for the most part, we fail to creatively project ourselves onto horizons of possibility as forces of change at all. In articles written to each other, we find ourselves preaching to the choir, with only passing mention of our obligation to reach out to the very audiences who are empowered to make the alterations to practice that our critical findings recommend.

To demonstrate this point, I begin this essay with a look at the first and second persona (Black, 1970) set out in contemporary rhetoric of science and technology research. What identity do we establish in our scholarly writing? Is there a match between our self-conception as established in the written record of our research and the actual purposes and practices that drive our professional lives? In order to answer these questions, I decided to examine the most recent articles on the rhetoric of science and technology, focusing in particular on how authors justify their research and argue for the significance of their findings.

The first striking thing I found from my review of this literature is that rhetoricians of science and technology are publishing an impressive amount of scholarship. Surveying just the academic articles that came out in the first few months of 2012, I counted 23 essays in 13 venues. Rhetorical studies of science and technology are being published in

journals devoted to the study of technical communication, science in society, the medical humanities, critical media studies, public address, rhetoric, composition, and argumentation. Rhetoricians of science and technology are producing a great deal of research, and its publication in peer-reviewed journals gives us reassurance that this work is valued across our various disciplinary homes.

But what kind of work is it that we are we doing? In most cases, the reader implied by these articles is a fairly passive one, seeking primarily to "understand" (e.g., Applegarth, 2012, p. 453) or gain "insight" (e.g., Kelly & Hoerl, 2012, p. 127) about something that the author of the article will "illuminate" (e.g., Derkatch, 2012, p. 211), "show" (e.g., Gorsevski et al., 2012, p. 316), or "reveal" to them (e.g., Skinner, 2012, p. 308).[1] We are interpellated by these articles as a people who "consider" things (e.g., Von Burg, 2012, p. 9); we are interested in "broadening our thinking" so we can be "more attuned" to contradictions and complications (e.g., Pender, 2012, p. 323, p. 340); we are the sort of people who strive to "heighten our awareness" (e.g., Homchick, 2012, p. 14). Such language suggests that the intellectual quality of detection, or the ability to discern, is most valued in the academic communities toward which these journal articles are directed.

Beyond this somewhat passive attribute of taking in all that we observe, another more active characteristic of our persona makes a fleeting appearance in a few of these articles. For example, we are told that what we learn about rhetorics of science and technology from these articles should be "made part of a wider public discussion" because our understanding of these things "helps disrupt the existing norms and conventions of a practice, and in so doing opens possibilities for the deliberative re-creation of these norms and practices" (Majdik & Platt, 2012, p. 138). By "paying closer attention" to the relationships revealed by these rhetorical studies, we "provide a check on the self-interested manipulation" of policymakers, "developing critical tools" that "may license more regulations of the kind that everyone should endorse" (Paroske, 2012, p. 489, p. 491). The "detailed excavations" of public arguments about science that we share with each other not only work to "increase our abilities to understand," but to "anticipate, and intervene therapeutically in future instances of these complex and important public dialogues" (Walker & Walsh, 2012, p. 29). Such are the horizons of possibility for the rhetorical critic.

However, what these articles do not specify in their brief remarks about our potential impact on the world is how rhetoricians can actually accomplish the shift from understanding to action. Also missing is any evidence that our attempts at intervention have the slightest chance of achieving such worthy goals. Can the rhetorical criticism we publish in academic forums really help to disrupt existing norms and conventions?

---

[1] Multiple variants of each of these terms appear in my corpus of 2012 rhetoric of science and technology articles, so to keep my citations from being too unwieldy, I only offer one example of each here.

Will those empowered to create new regulations or remedy harmful discursive patterns listen to us if we offer to intercede with the critical tools and detailed excavation methods we have developed for use in a scholarly literature established for our own consumption? Ironically, a community of scholars who so value the making visible of all that has been obscured offers no explicit insight into how a reader can walk the path from understanding to active disruption of norms, restraint of excessive power, or therapeutic intervention in public discussion.

The elephant in the room that we rhetoricians are oddly overlooking, despite our heightened critical awareness and our prime directive to always consider audience, is that no matter what our purpose as rhetoricians of science and technology—whether it be critical or ameliorative, focused on scientists or science writers or the publics affected by them—in every case, the people we *should* be addressing with a report of our findings are not the people we *are* addressing with our most valued academic work, and we have no established apparatus to facilitate the translation of that most valued academic work to the empowered stakeholders who could benefit from it.

A lot of ink has been spilled in the larger field of rhetoric about the need for rhetoricians to engage in public scholarship or civic engagement, with special issues of *Technical Communication Quarterly* (Dubinsky, 2004), *Philosophy and Rhetoric* (Hauser, 2006), and *Quarterly Journal of Speech* (Gunn & Lucaites, 2010) all devoted to the topic in recent years; there is also a recent edited collection (Ackerman & Coogan, 2010) and an even more recent review essay on the subject (McConnell, 2012). But beyond acknowledgement that a problem exists, there has been little written to address the disconnect between the generic expectations of our internal discursive form and our aspirations for external exchanges of consequence (see, e.g., Clark, 2004; McGowen, 2010). As Steve Fuller (2004) put it, the "restricted codes in which academics normally communicate" contribute to a situation in which "critiques can be lodged without concern for how—or even whether—the targets are affected, let alone motivated to reorient their course of action" (p. 155).

The recent explosion of commentary on the subject of public scholarship has established that there are two modes by which rhetoricians can have an impact on the world around us—through our teaching and through our extradisciplinary service. I trust that all of us who do research on the rhetoric of science and technology have experiences with both. We devote much of our working time to helping students (many of them future scientists or journalists) develop the critical sensibilities and communication skills they need to become active participants in their professional and civic lives. We also volunteer our services to the working professionals (in our case, mostly scientists and science writers) and civic actors who would presumably benefit from our insights. I am not arguing that we need to *start* doing this kind of work; we already *are* doing it. What I am arguing is that we need to think more and talk more about *how* we do this work so that we can help each other more effectively transform our scholarly findings into meaningful action in these fora.

Part of the problem we face is that our work as researchers is valued by our academic institutions with the highest financial rewards, job security, and status, while our pedagogical and service work is comparatively less compensated. That said, it is the unrewarded work that promises to turn our literature of passive understanding into achievements that have positive and lasting effects; it is also this relatively unrewarded teaching and service work that makes our research valuable to those outside our disciplines who might otherwise question our worth. So we would do well to find our own ways to support the development of outreach methods that help us share our research findings with others, even if our current institutional structures do not provide such support.

The privileging of basic research in today's institutions of higher education might be attributed to the influence of science on the academy. Scientists are committed to building literatures that exist primarily for the sake of expanding knowledge. But they can justify this priority to those who fund their research by arguing that a focus on basic science will eventuate in practical applications that benefit others (cures to disease, new technologies, etc.), and they back up this argument with a long history of examples. We rhetoricians, as scholars of the humanities, have a more difficult time justifying the resources we devote to our impenetrable research publications. When those outside our disciplines question our worth, we cannot whip out an impressive list of transparently successful applications of that research to warrant it. So in a time of ever-shrinking budgets, it behooves us to think about how our basic research supports our outreach in the classroom and in the public and technical spheres, so that we can articulate the means and effects of that transformation of knowledge to ourselves and to others.

With regard to the classroom, we will likely have to discuss this subject in person, since barriers to publication of pedagogical reflections are high in the academy. As a case in point, we had an Association for the Rhetoric of Science and Technology preconference on pedagogy in 2004. It was a well-attended, thoughtful, and lively conversation about how we might go about converting our scholarly understandings into knowledge and skills that students can use. But the book that was supposed to come out of that discussion never materialized, and another book that Alan Gross proposed around the same time on the rhetoric of science pedagogy had similar problems getting published. Given the institutional priorities of the research university complex, written work about how we can best convey our scholarly insights to our students is especially difficult to get published. We need to find other ways of sharing our ideas about pedagogy with each other, devoting future preconferences and seminars to the subject, or building websites for the sharing of teaching materials.

With regard to our outreach outside the classroom, we are likely to face the same difficulty with publishers if we propose a writing project designed to share advice with each other about best practices for transforming our basic research into community action. But there might be a way around this problem. We rhetoricians of science and technology have done an excellent job of studying how scientists reach out to external audiences with reports that are designed to transform internal communication practices to external understanding (Rude, 2004),

reports that sometimes include prefigured accommodation for public consumption (Leake, 2012). What if we examined our own discourse in this way, and then began applying what we find to our future work? Gordon Mitchell and Kathleen McTigue (2012) recently argued that since "communication tools can facilitate translation of basic science into improved health outcomes," rhetoricians can serve as "potential collaborative partners for physician-citizens interested in refining their public advocacy efforts" (p. 100). To this excellent proposal, I extend the following appeal: doctor of rhetoric, heal thyself. Some scholarly reflection is needed on how rhetoricians of science and technology can best facilitate translation of basic research *on the rhetoric of science and technology* into improved public communication of science and technology.

By looking carefully at the link between our research and our practices of teaching and extradisciplinary service (a task that should be easy for capable discerners like ourselves), we can turn what is currently no more than a trace in our scholarly articles, that fleeting acknowledgement of an aspiration to make our research meaningful beyond our insular communities, into an explicit mission of our field. It is a horizon of possibility that we are more likely to reach if we draw out thoughtful plans of advancement toward it. I am confident that rhetoricians of science and technology will make more of a difference in the world if we take more time to talk with each other about our methods for effectively reaching external audiences. As a fortunate side effect, we will also become more secure in our jobs as rhetorical scholars if we can collect success stories from such discussions for use when those who fund our professional work ask for a rationale concerning the time we spend on basic rhetoric of science and technology research.

References

Ackerman, J. M., & Coogan, D. J. (Eds.). (2010). *The public work of rhetoric: Citizen-scholars and civic engagement*. Columbia, SC: University of South Carolina Press.

Applegarth, R. (2012). Rhetorical scarcity: Spatial and economic inflections on genre change. *College Composition and Communication*, *63*, 453-483.

Black, E. (1970). The second persona. *Quarterly Journal of Speech*, 56, 109-119.

Ceccarelli, L. (2013, forthcoming). *On the frontier of science: An American rhetoric of exploration and exploitation*. East Lansing: Michigan State University Press.

Clark, D. (2004). Is professional writing relevant? A model for action research. *Technical Communication Quarterly*, *13*, 307-323.

Derkatch, C. (2012). Demarcating medicine's boundaries: Constituting and categorizing in the journals of the American Medical Association. *Technical Communication Quarterly*, *21*, 210-229.

Dubinsky, J. M. (2004). Guest editor's introduction. *Technical*

Communication Quarterly, *13*, 245-249.

Fuller, S. (2004). The public intellectual as agent of justice: In search of a regime. *Philosophy and Rhetoric*, *39*, 147-156.

Gorsevski, E. W., Schuck, R. I., & Lin, C. (2012). The rhetorical plasticity of the dead in museum displays: A biocritique of missing intercultural awareness. *Western Journal of Communication*, *76*, 314-332.

Gunn, J. & Lucaites, J. L. (Eds.). (2010). Forum on engaged scholarship. *Quarterly Journal of Speech*, *96*, 404-468.

Hauser, G. A., ed. (2006). Forum: The nature and function of public intellectuals. *Philosophy and Rhetoric*, *39*, 125-156.

Homchick, J. A. (2012). March of the pandas: Imitation and intelligent design. *POROI*, *8*, 1-17.

Kelly, C. R. & Hoerl, K. E. (2012). Genesis in hyperreality: Legitimizing disingenuous controversy at the Creation Museum. *Argumentation and Advocacy*, *48*, 123-141.

Leake, E. (2012). Science as sound bites: *The Lancet* Iraq casualty reports and prefigured accommodation. *Technical Communication Quarterly, 21*, 129-144.

Majdik, Z. P. & Platt, C. A. (2012). Selling certainty: Genetic complexity and moral urgency in Myriad Genetics' BRAC*Analysis* campaign. *Rhetoric Society Quarterly*, *42*, 120-143.

McConnell, K. F. (2012). Book review essay: The ethical and professional risks of engaged scholarship. *Rhetoric and Public Affairs*, *15*, 153-172.

McGowen, J. (2010). An immodest proposal. *Quarterly Journal of Speech*, *96*, 413-420.

Mitchell, G. R., & McTigue, K. M. (2012). Translation through argumentation in medical research and physician-citizenship. *Journal of Medical Humanities*, *33*, 83-107.

Paroske, M. (2012). Overcoming burdens of proof in science regulation: Ephedra and the FDA. *Rhetoric and Public Affairs*, *15*, 467-498.

Pender, K. (2012). Genetic subjectivity in situ: A rhetorical reading of genetic determinism and genetic opportunity in the biosocial community of FORCE. *Rhetoric and Public Affairs*, *15*, 319-350.

Rude, C. D. (2004). Toward an expanded concept of rhetorical delivery: The uses of reports in public policy debates. *Technical Communication Quarterly*, *13*, 271-288.

Skinner, C. (2012). Incompatible rhetorical expectations: Julia W. Carpenter's Medical Society papers. *Technical Communication Quarterly*, *21*, 307-324.

Von Burg, R. (2012). Decades away or *The Day After Tomorrow?*: Rhetoric, film, and the global warming debate. *Critical Studies in Media Communication*, *29*, 7-26.

Walker, K., & Walsh, L. (2012). "No one yet knows what the ultimate

consequences may be": How Rachel Carson transformed scientific uncertainty into a site for public participation in *Silent Spring*. *Journal of Business and Technical Communication*, *26*, 3-34.