

Reclaiming Rhetoric of Science and Technology: Knowing In and About the World

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Meta-cognitive work and consideration of relevant philosophical issues are widely recognized as vital for evolving fields of study. This article suggests that a number of common research practices (over-reliance on case studies and contextualization, in addition to the globalization of rhetoric) have delayed real contemplation of larger issues in RST. The author calls for closer scrutiny of philosophies underlying the practice of RST and a negotiation of social and philosophical vision for the discipline.

“The aim of philosophy... is to understand how things in the broadest possible sense of the term hang together in the broadest possible sense of the term.”

—Wilfrid Sellars, “Philosophy and the Scientific Image of Man”

In the rhetoric of science and technology (RST), we have called for a pause at the end of the day. In so doing, we call upon philosophy. Under the incessant pressure that disciplinarity exerts, a newer field such as RST can become distracted; it can lose its commitment to understanding how things “hang together.” In RST, what disciplinary conditions interfere with its ability to philosophize? How might it once again do philosophy? And why would it even want to?

In this essay, I will argue that some dominant disciplinary practices in RST indeed circumvent philosophical deliberation. Here, I will discuss three: the profusion of case studies, the indiscriminate reliance on contextualization, and the globalization of rhetoric. The boundless supply of case studies, the infinite combination of contexts for studying science and technology, and the enumerable rhetorics of *X* (Goankar, “Idea” 75) portend no shortage of research sites and perspectives for up and coming scholars. In this sense, RST seems like an active discipline with a bustling research agenda. However, I will argue, RST currently lacks

the philosophical vision to synthesize its knowledge into a coherent story about science and technology.

The philosophical growth of RST may have been impeded by its separation from Science and Technology Studies (STS), one of its early travelers. The declining presence of STS in RST signals at once RST's disciplinary consolidation and dwindling of possibilities for synthesizing what we know about science and technology from its scientific and humanistic study. RST needs philosophy to understand science and technology "in the broadest possible sense." But, more urgently, RST needs philosophy in order to understand itself.

TENDING YOUR OWN GARDEN

Case studies are common currency in RST (as well as STS). Case studies signify a coalesced, active field of inquiry to researchers, administrators, and funding agencies. Fuller characterizes the embrace of case studies in RST as "a kind of Kuhnian normal science," in which practitioners toil on a defined set of problems in a predictable, forward-moving fashion ("Globalization" par. 5). Following Fuller's logic, RST "converts the concepts of classical rhetoric into analytic techniques that can be unleashed on virtually any unsuspecting text to produce a distinctly 'rhetorical' brand of research" (par. 5). Gaonkar ("Idea" 41) also notes that the RST case study is a methodological commonplace: "A case study typically takes some structured episode (say, a controversy) or some specifiable dimension (say, writing) of scientific practice and analyzes it from a rhetorical perspective.... [O]ne can always find a hesitant gesture towards generalization... about an inward connection between science and rhetoric derived from a certain version of philosophical anthropology... that makes rhetoric simultaneously unavoidable and erasable" ("Idea" 41). Although the case study may have helped RST to achieve disciplinary legitimacy, the case study seems unable to offer unique conclusions about its object of study.

Case studies are an efficient scholarly technique for building disciplines. Legitimate disciplines need graduate programs. Case studies can be molded to fit the closely monitored timetable for getting a graduate degree. Given the general methodological flexibility of the case study—elastic historical beginning and end points, for example—the breadth and depth of the case study can be made to fit the genre of theses, dissertations, and the next generation of academic books. Case studies are empirical, get positive results, and can be tailored to the requisite graduate student or assistant professor timetable. The humanities look more scientized, which academic administrators often recognize as valid knowledge production and which they fund. The work gets published. It can fit publishers' demands, is marketable, and fits in what is recognizable in terms of disciplinary progress as seen in the social sciences.

The ethos of case studies in science studies is that the researcher's approach reveals something real, and somehow buried (or tacit), about the object of study. The *locus classicus* of the science studies case study, initially rendered as fiction, is Bruno Latour and Steve Woolgar's *Laboratory Life*. *Laboratory Life* showed the sustained social and material conditions necessary for the production of scientific knowledge. Latour and Woolgar's blend of authoritativeness (in part from associating with Jonas Salk), thoroughness, and mysteriousness made the book ripe for critical response (see the postscript for the second edition) and imitation. *Laboratory Life* would come to represent the genre of the sophisticated, but doable, case study. Interdisciplinary researchers adapted the case study to satisfy the varied constraints imposed by the diverse political economies of academic research.

In STS, Malcolm Ashmore's *The Reflexive Thesis*, a case study about the Sociology of Scientific Knowledge (SSK) through the process of his own academic credentialing, shows how a cleverly conceived case study can be successfully deployed no matter the academic genre. The unmistakable innovation of Ashmore's work offers a sure sign of the viability and entrenchment of STS research. In RST, Leah Ceccarelli's *Shaping Science with Rhetoric* offers a somewhat more earnest, traditional take on the case study. Still, the work's plasticity—as dissertation; as comprised of related but autonomous cases suitable for journal articles; as coherent book; as methodological innovation (examining a case of failed rhetoric for example)—marks the maturity of RST.

I take the work of Ashmore and Ceccarelli as an apparent historical indicator of the next generation of scholarship in their respective fields. Dissertations in STS and RST, respectively, had become heralded books. That the dissertations were case studies, albeit markedly different approaches, suggested a lesson for scholars in the field and administrators of rising graduate programs. The features of the case study could be manipulated to produce good, widely valued work. Consequently, academic researchers set forth to ethnographically toil in the fields and bring back their stories.

What is the problem with being an honest toiler in the STS and RST fields? The absence of a moment of synthesis. As Fuller points out: “The case study method so cherished by science studies practitioners often appears as carping from the sidelines; the research is so focused on particular cases, it seems to have no implications for the ‘big picture.’ Yet the public understanding of science seems to demand such a picture . . . the overall impression is that science studies has abdicated any responsibility for constituting the future of science” (qtd. in Atkinson-Grosjean, par. 10).

CONTEXT AND GLOBALIZATION

Like case studies, contextualization is a salient feature of scholarship in RTS. Context is invoked as a way of more broadly understanding a given object of study. In

The Structure of Scientific Revolutions, Kuhn ushered in the historical turn in the philosophy of science, and in doing so unwittingly ended positivism. For many scholars, Kuhn seemed to teach a methodological lesson: science is best understood scientifically, through empirical social science. However, once science became the object of study for history and sociology, context-based studies of science and technology mushroomed. While many researchers tend to privilege historical contexts as a way to set the stage for their accounts, they rarely discriminate among the number and kinds of contexts within which an object of study can be placed—the more contexts, the more knowledge, the better and more comprehensive the account. The problem with this assumption is obvious. For any given object of study, the number of contexts one might consider seems practically infinite and remarkably indiscriminate.

In appropriating interdisciplinary pluralism from STS, the additional problems of fragmentation and globalization have been visited on RST. For rhetoric, the object of study can change constantly. While science and/or technology can be the object of study, the number of “coarticulations”—“the rhetorics of X” (Gaonkar, “Idea” 75)—ceaselessly multiply. Gaonkar lists twenty-three such coarticulations (“Idea”). Those who now care to count will likely find exponentially more. Rhetoric’s globalization (Schiappa, “Second Thoughts”) brings attendant disputes regarding its disciplinary status. Examples include Simons (“Globalization”) and Fuller (“Globalization”); Cherwitz, Hikins, and Schiappa et al.; and Simons (“Rhetorical”) and Keith et al. Each of these debates addresses issues elaborated by several prominent scholars (Gross and Keith), extended by Gaonkar (“Idea”), and raised by Melia. Contemporary arguments regarding rhetoric’s scope and purpose reach back at least to the postwar period. Gross and Keith designate Bitzer and Black’s *The Prospect of Rhetoric* as an historical endpoint. I cite this long history to suggest the constancy of disputes over the status of rhetoric’s globalization and object of study, which brings us back to the case study, that handy tool of globalization.

While these debates continue, so, too, do the case studies. At best, the attention of RST is divided between “general essays and case studies” (“Idea” 41). And while general studies attempt to sort out “how [RST] is positioned in relation to the received traditions in science studies...[they] invariably conclude by calling for more case studies....” (Gaonkar, “Idea” 41). RST lacks a meta-theory for sorting out, comparing and contrasting, and evaluating the significance of case studies. Meta-theory would be especially helpful as we pause to consider whether rhetoric of technology is to be a separate field of inquiry (Miller, “Learning”; Bazerman, “Production”), or if rhetoric can account for artifacts in the networked continuum of “technoscience” (see Latour, *Science*). The assumption appears to be that the coarticulation itself—a rhetoric of ... science, technology, science and technology, or technoscience—smoothes out the ontological difference in the objects of study. In the quest for academic legitimacy, we keep piling up case studies.

RHETORIC IN AND ABOUT THE WORLD

Where do we find models of deliberation for RST and STS? Do we look to the past in order to recuperate what we find there, or do we look to the present with an eye toward the future, considering what we might now know, and to develop a procedure for shaping knowledge? (Either can be idealized.) Do we look to the past, to the Athenian forum to find, and model, participatory democracy (Leff)? Do we look to the Enlightenment tradition of Mill, Dewey, and Popper (Fuller, “Rhetoric”)? Do we look to the United States constitutional convention (Fuller and Collier)? Do we turn to Habermas, Rorty, or Rawls for direction? Do we look to the Discussion Movement and the Forum Movement (Keith, “Democratic”)? Do we look to science as an exemplar of the Athenian polis (Zinsel; see Fuller, “Rhetoric”)? Do we look to computers and cyberspace (Doheny-Farina; Gurak, *Persuasion*; Welch; and Warnick)? What if, instead, we looked inward, at academic disciplines (Fuller and Collier)?

Disciplines pose a unique problem in trying to understand knowledge as both in and about the world. Disciplinary knowledge is embodied in the world. It is subject to numerous caprices, not the least of which is the political economy of academia and our often vague approaches to given objects of study. In fully (even reflexively) disclosing the embodiment of our knowledge, we face criticism of our knowledge about the world—its basis, its veracity, its coherence. Given the complex and variable interactions of rhetoric, science, and technology, we are subject to charges (leveled by other experts—scientists, computer programmers, philosophers) of illogic, wrong-headedness, or sophistry. We may choose to embrace these criticisms—the reflexive turn in STS, the opening *apologia* of bringing together science and rhetoric in RST—or divide our attention, allowing disciplinary spokespeople to hash out the theoretical controversies while practitioners produce case studies. Yet managing these tensions is the task of how a discipline tells its story, its disciplinary history.

Once bounded, a field of study gets busy reproducing and sustaining itself. The apparent pluralistic virtues of interdisciplinarity gives RST both a ready-made argument for disciplinary agnosticism and the ability to hold off decisions about where it will locate. Does RST belong to NCA rhetoricians or is it a global citizen free to roam (Simons, “Globalization” versus Fuller, “Globalization”; and Simons, “Rhetorical” versus Keith, Fuller, Gross, and Leff)? Is contemporary rhetorical theory becoming a master trope provincially worried about its disciplinary impact and not its veracity (Cherwitz and Hikins)? Or is rhetoric a “vocabulary for redescribing communicative phenomena” (Schiappa et al.)? Rhetoric contemplates a disciplinary home—Communication, English, Composition, Technical Communication—while considering its own disciplining as RST or, perhaps, “captology” (not to be confused with captation; see Fogg; Latour, *Science*).

While motion and not method seems the current occupation of rhetoric, the ability to philosophize in a synthetic manner is swept aside. The question is not whether we can recuperate classical or modern rhetoric. We need a synthetic moment, a moment not at which we talk at each other, but where we collectively philosophize about the conduct of our inquiry. To some extent, STS took responsibility for this discussion, at least until *l'affaire Sokal*. In the wake of the Sokal hoax, STS and RST got religion in the form of pragmatism (Fuller, "Globalization"). And penance was performed by doing case studies.

For RST and STS, the project of theorizing how the knowledge production can be explicitly both in and about the world has been addressed by Fuller's project of social epistemology. Fuller's "alternative 'grand narrative'" (Atkinson-Grosjean) regarding science's future has been variously explored in his voluminous work. Here, I wish only to point out the need for RST to consider the normative implications of its work both in a disciplinary framework and about science and technology. While the mere mention of norms leaves many scholars cold, the explicit criteria, or rules, for a discussion of the future of RST and SRS requires, in part, a pause from the harried labors of discipline building. STS, for example, tried to reflexively consider its future on the fly and ran head-long into the science wars. I believe that by collectively, as it were, going meta—general essayists and case studies researchers in RST and STS alike—we may pause and collectively respond to the work that has gone before under the umbrella of the study of science. By "Going Meta," I am not necessarily referring to political confrontations of the type analyzed by Simons. Rather, at this pause, I am calling for the collective negotiation of the narrative we have constructed about science and technology. And we need to do so while being cognizant of the stories we tell.

FINAL THOUGHTS

In RST and STS, what do we know, and on what basis? It is time to adjudicate the knowledge that we purport to create. We need to negotiate social and philosophical syntheses. At one point STS promised a synthesized, interdisciplinary approach to the public understanding of science and technology. That promise has not been fulfilled. And, in the incessant pressure that disciplinarity exerts, we have lost the deliberative process in RST. Debates over globalization and disciplinarity focus on matters of producing and distributing the research. We try to find occasion for deliberation, but it tends to be ceremonial rather than a fundamental, normative feature of our practice. As we pause to consider the possibilities of RST, let us take up the deliberative process on the parapet where we can see the horizon.

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