# Rhetorical Theory in a Transdisciplinary Mode

## *The Rhetoric of Inquiry and Digital Humanities*

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> **Abstract**: The sciences and humanities have long been regarded as discrete intellectual cultures, separated by a sharp epistemic divide. Recently, however, turns toward "transdisciplinarity" have intimated the growing importance of overcoming disciplinary boundaries. The Rhetoric of Inquiry and Digital Humanities are two transdisciplinary projects that have attempted, respectively, to bring humanistic inquiry to the sciences, and to bring scientific inquiry to the humanities. This paper attempts to trace the parallel genealogies of both projects in an attempt to theorize some common traits of theory in a transdisciplinary mode. I suggest that articulating these projects with one another enables us to suppose that building transdisciplinary theory will entail a heightened reflexivity concerned with questions about scope, methods, and epistemic value

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On May 7, 1959, C.P. Snow delivered his famous Rede Lecture at Cambridge University, subsequently published as *The Two Cultures and the Scientific Revolution*. His provocative claim was that "the intellectual life of the whole of western society is increasingly being split into two polar groups" (Snow, 1959, 4). One group, what he called the "traditional culture" of literary intellectuals, and the other, the scientists, were to Snow, even in 1959, "dangerously separate sixty years ago" (Snow, 1959, 18). The chasm between the

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two cultures, he intimated, was a problem of communication. Marked by insularity, mutual ignorance of the other, and not a little animosity, the rift left "no place where the cultures meet" (Snow, 1959, 17). For Snow, the consequence of this divide was nothing less than the calamitous obstruction of the world's intellectual and social progress. Although Snow subsequently posited a "third culture" that might become a communicative medium between the two sides (Snow, 1963), it's his "two cultures" phrase that has "lived on as a vague popular shorthand" for the rift that remains between the sciences and humanities today (Kimball, 1994, 1). This paper concerns some recent efforts to address that rift through the growing prevalence of "transdisciplinarity" as a keyword in twenty-first century intellectual life.

According to Katri Huutoniemi and her collaborators, attempts to overcome disciplinary divides are typically distinguished by three widely recognized categories of research: multi-, inter-, and transdisciplinarity (Huutoniemi *et al.,* 2010). Generally, *multidisciplinarity* involves researchers working from within a specific disciplinary home to address common issues being addressed in parallel by other disciplines. *Interdisciplinarity* involves researchers from different disciplinary bases working together toward common problems, albeit employing their own discipline's framework. *Transdisciplinarity* involves researchers from across disciplines working together to develop new and shared conceptual frameworks, theories, and approaches to common problems that would transcend extant barriers of inquiry (Rosenfield, 1992, 1351). In a conceptual way, these distinctions make sense. But as transdisciplinarity gains traction as an intellectual value and priority, better understanding the actual practice of building transdisciplinary theory becomes more important.

Certainly, evidence of its practice is clear enough. The field of rhetorical studies in particular has lately invigorated its efforts to cast rhetoric as a transdisciplinary art—as a kind of "third culture" that transcends hidebound epistemic divides. This effort is evident in such initiatives as Penn State University Press's new book series on transdisciplinary rhetoric, or in the choice to make "Border Rhetorics" the theme for the Rhetoric Society of America's 2014 meeting—borders being precisely what rhetoric purportedly transcends. The growing membership of the Association for the Rhetoric of Science and Technology also underscores a shift in the field toward greater appreciation of rhetoric's transdisciplinary nature, marked by ongoing discussions about changing the division's name to accommodate its still-widening purview: the

reach of rhetoric now permeating science, technology, and medicine. While it may still be premature to proclaim a transdisciplinary "turn" in the field, it is surely possible through these and other examples to identify a growing institutional attentiveness to rhetoric as a valuable means to overcome the innumerable divides that partition our pluralistic world.

And yet, any contemporary interest in understanding rhetoric as transdisciplinary must be considered a *renewed* interest. Conversations about the boundary-crossing range of rhetoric date back to antiquity and have recurred in our literature ever since. We could, for instance, just as well read rhetoric's transcendent potential through Kenneth Burke's rehabilitation of the ancient concepts of *rhetorica utens* and *docens* (Burke, 1969), which illustrate rhetoric's inescapability from both practice and theory, as we could read it through conversations started by Richard McKeon's sense of rhetoric as architectonic, which suggests that rhetoric organizes and structures all other disciplines and arts (McKeon, 1970). Conceivably, the rhetorical tradition's longstanding investment in a *sensus communis*—traced well by John Schaeffer as an historically evolving commitment to commonsense as an arch-value underwriting all knowledge—could even suggest that these recurring conversations may be more than occasional *topoi*, but rather constitutive of the whole tradition (Schaeffer, 2004).

There are, however, important differences between our literature's innumerable claims for rhetoric's transcendent qualities—a review of which would absurdly encompass nearly the whole tradition—and the metatheoretical lessons to be learned from the traits that rhetorical theory exhibits when invoking transdisciplinarity as its salient feature. This paper is concerned with the latter: with what it means to practice rhetorical theory in a transdisciplinary mode. More broadly, I ask how *any* academic or intellectual tradition goes about claiming transdisciplinary relevance. My argument is that theory in a transdisciplinary mode does not require articulating, *ab ovo*, a "new" language or paradigm—a "third culture—through which divergent cultures might be united, but in practice involves "importing" or "exporting" one culture's metatheoretical assumptions into another's to form something new. This dialectic occurs through theory building discourses that take on conspicuous self-reflexivity: an inward gaze of metadiscourse directed in three areas. Such discourse is concerned with *epistemology* (i.e., with what counts as a valid knowledge claim), with *ontology* (i.e., with what the transdisciplinary enterprise is or is not, as reflected in its scope);

and with *methodology* (i.e., with what approaches to scholarship are appropriate to its values and practices).

Because observing only the rhetorical tradition's transdisciplinary claims would not illustrate more than that tradition's potentially singular approach to building transdisciplinary theory, in the pages ahead I put two separate transdisciplinary projects side-by-side: first, Rhetoric of Inquiry (RoI), and then, Digital Humanities (DH). My premise maintains that these discrete but clearly transdisciplinary projects each move toward (but have not quite achieved) the "third culture" that Snow described. Roughly, RoI has advanced a sense of rhetoric as a critical and hermeneutic tool able to crack fissures in the epistemic certainties of some fields by exposing how even the most rigid knowledge claims are inevitably made through persuasive means. DH, meanwhile, uses computational technologies as disambiguated and quantitative tools to create more empirical certainty in acts of critical interpretation that are otherwise marked by ambiguity and multiplicity.

The purpose of putting RoI in conversation with DH in this way is not just to reveal some instructive insights about ways to bridge the sciences and humanities. It is likely that humanistic and scientific projects—to the extent we even accept Snow's binary—do have recalcitrant and irreconcilable differences, and probably always will. The goal is rather to look more closely at those *characteristics of inquiry* that would endeavor to transcend hidebound disciplinary divides. By better understanding the chiasmatic relationship between two major transdisciplinary projects, we might improve our ways of thinking about the actual practice and limitations of building theory in a transdisciplinarity mode.

## THE RHETORIC OF INQUIRY

As readers of this journal likely know, the "Rhetoric of Inquiry" as such came together as a project in the 1980s when John S. Nelson, Allan Megill, and Dierdre (*née* Donald) McCloskey, collaborating from different departments at the University of Iowa, began thinking about how different fields of study produce knowledge and come to agreement about things.  Of course, these sorts of inquiries had been happening for millennia, at least since Socrates held forth about differences between truth (*epistêmê*) and opinion (*doxa*). What happened at Iowa in the eighties brought together these timeless inquiries under a new name, institutionalizing the "Project on Rhetoric of Inquiry" as a way to examine how knowledge claims pertinent to academic disciplines and public affairs are reached,

then settled, and how these claims are in turn communicated across disciplines. My argument maintains that RoI, at least in the trajectory cast from its roots at Iowa, has sought implicitly (not necessarily deliberately) to diminish the chasm between Snow's two cultures; and, moreover, it has done so by *exporting* its metatheoretical assumptions into a different tradition.

The argument suggests that RoI has, by and large, exposed as fallacious the chasm between the two cultures of science and humanities. It has done so by virtue of some three decades now of deeply self-reflexive scholarship, which has time and again smartly and coherently revealed the rhetorical underpinnings of even the most empirical scientific claims for Truth. In doing so, it has not undermined science so much as demonstrated the productivity of its deep-set relationship with humanistic, rhetorical culture. As its name suggests, RoI views rhetoric as immanent in all inquiry. It has thus been a call, on one hand, to urge a diverse range of scholars to think more seriously about rhetoric as a valuable heuristic for understanding their work; and, on the other, to rally those scholars already studying rhetoric (mostly in speech communication, but also in English departments) to spearhead these new transdisciplinary but fundamentally rhetorical understandings of argumentation, logic, and processes of discovery.

In many ways 1984 was the foundational year for RoI. That was the year the University of Iowa Humanities Symposium on the Rhetoric of the Human Sciences brought together scholars from across a nearly comprehensive range of disciplines in the humanities and social sciences for a veritable carnival of productive navel gazing. The panels and essays presented at this symposium were later collected in an edited edition called *The Rhetoric of the Human Science: Language and Argument in Scholarship and Public Affairs* (1987)—essentially the *urtext* of the emergent field, at least as it was grounded at Iowa.[2] In its lead essay, Nelson *et al.* trace RoI back to its precursors in the Sophists of ancient Greece, beginning with Socratic dialogues and developing on through "the Ciceronian view that rhetoric is the whole of argument" (Nelson *et al.*, 1987, 6). As they tell the story, such views thrived until the seventeenth century, when philosophical arguments about the subject/object dichotomy positioned "conversation and rhetoric" on

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[2]Herbert Simons foregrounds a different, albeit overlapping story in *The Rhetorical Turn* (Simons, 1990). Other volumes depict their own histories. I do not claim to be comprehensive here, but rather to emphasize one key strain of RoI's development and assimilation by the academy. (I capitalize the phrase as a reminder of that emphasis).

one side against "truth and rationality" on the other (Nelson *et al.*, 1987, 6). More specifically, they trace the modern denigration of rhetoric to René Descartes, whose rationalism trumped rhetoric's claims at epistemic validity, relegating rhetoric to a place somewhere outside of what counts in the process of arriving at truth. In their symposium essay and elsewhere (*cf.* Nelson and Megill, 1986), Nelson *et al.* suggest that subsequent attempts to revive rhetoric have taken an anti-Cartesian form. Tracing its gradual revival through the destabilizing philosophies of Nietzsche, Heidegger, Wittgenstein and others, Nelson *et al.* suggest that contemporary scholars must again be attentive to the rhetorical nature of all argument and inquiry. RoI, they conclude, "explores how reason is rhetorical," effectively relocating rhetoric as integral to any discipline's pursuit of knowledge (Nelson *et al.,* 1987, 17).

The historical disparagement of rhetoric and its occasional resurgence has been well traced by Michael McGee and John Lyne in the essay they contributed from the same symposium (McGee and Lyne, 1987). In the common story, rhetoric's historical quarrel with a fixed ideal of truth has lingered since Plato demoted rhetoric to mere cookery, thereafter posing a challenge to rhetoric's status and to attempts to write its history (Hariman, 1986; Blair, 1992; Aune, 2008). I cannot chart here the full breadth of these historical disputes about rhetoric's epistemic and ethical validity. Suffice to say, if they began in disagreements between Plato and the Sophists, and reappeared through the modernist view of truth expounded by Cartesian rationalism, they took new form in the foundationalist views suggested by logical empiricists in the early twentieth century. It's the logical empiricists, finally, that provide a more immediate context for Snow's claims about the irreconcilable "two cultures" of science and humanities.

The basic project of the logical empiricists—beginning with David Hume's empiricism, evolving through Auguste Comte's "positivism," and reaching its full incarnation in the Vienna Circle of Rudolf Carnap, Carl Hempel and others—can be summarized "by being *against metaphysics*" (Hacking, 1983, 42). Their attempt to make philosophy scientific began by denying realism: that is, with the premise that no *a priori* truth exists before observation. The goal of such science is not to describe metaphysical reality, but to foster prediction and control. Truth begins with sense-data, follows the machinery of logic, and is confirmed by a verification principle that will only grant a statement's truth if it can be verified. Under such a model, the physical and natural sciences gain an especially revered epistemic authority: their inquiries are made following the logical empiricist's insistence on quantifiable empirical data.

Inasmuch as that insistence was born in philosophy departments of early twentieth-century Vienna and Germany (and later moved to Cambridge philosophy departments to escape Nazism), it wants to retain for philosophy the disciplinary authority to verify knowledge. Don Howard has argued that the philosophy of science—essentially this idea of science being subsumed by the supremacy of philosophic epistemology—has declined as a result of "our loss of the sense of a cultural, social, and political mission" (Howard, 2003, 77). But RoI tells a different story in its "turns away from modernism and foundationalism in the philosophy of science," and in its outright rejection of "the notion that there can be a single and autonomous set of rules for inquiry" (Nelson *et al.*, 1987, ix).

Some important players in how this rejection came to be reached include W.V. Quine, Stephen Toulmin, and Thomas Kuhn, all of whom helped shift mid-century notions about a logic of inquiry toward a rhetoric of inquiry. Characterized largely by post-positivism, the rejection "emerged in philosophy of science and it escalated into philosophy of language." (For those interested in a good account of the rejection of logical empiricism, see Zammito, 2004, 3.) For example, Quine's ontology of "semantic ascent" moves us away from talk about so-called empirical truths and toward talk about the language we use to arrive at them, which is to say that Quine recognizes the fallibility of the logical empiricist philosophy of science and replaces it with a philosophy of language that sees all observation as theory laden. Toulmin—influenced by his older colleague Wittgenstein (a legend in the shift to philosophy of language)—showed in *Uses of Argument* how the warrants of knowledge claims depend largely on field-contingent rules of argumentation (Toulmin, 2003/1958). His notion of "fields of argument" thus destabilizes the epistemic authority of positivist philosophy and the hard sciences that execute its principles, instead suggesting that legitimate warrants for truth claims vary from field to field.

Once Kuhn published his *Structure of Scientific Revolutions* (1996/1960), the prior work of Wittgenstein, Quine, Toulmin, and others[3] could be read retrospectively as an inevitable progression toward a radical shift in what counts as a legitimate basis for knowledge. Kuhn showed that, even in the hard sciences, standards of judgment are attached to "paradigms" that can't be extrapolated beyond their specific historical context, though they change in

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[3]Chaïm Perelman is relevant here, too, though philosophers mostly ignore him, just as N.R. Hanson is important but more or less unknown by rhetoricians.

periods of scientific revolution. That is, our observations are always colored by pre-observational suppositions we have by virtue of the regnant paradigm. This claim caused a veritable revolution in itself, insofar as it suggested that a given paradigm demands, leads to, and makes possible only certain kinds of arguments and warrants. In other words, if an abiding paradigm determines what means of persuasion can be used in a given situation, then paradigms themselves are inherently rhetorical. Accordingly, understanding scientific progress through a paradigm model, as opposed to a cumulative one, makes science itself rhetorical—a hitherto unthinkable possibility. As Richard Rorty puts it, ever since Kuhn's monumental book, "Philosophers have been debating whether science is rational" (Rorty, 1987, 41).

The point of sketching all this well-trodden context is to show that RoI's foundational moment, as well as its subsequent development, relies on overt self-reflexivity about its epistemological position. This self-reflexivity is part of why RoI is able to do meaningful work overcoming Snow's two cultures binary. In place of a view of science that holds it apart from the humanities because of its comparatively quantifiable, logical, and verifiable veracity, there now emerges a strong sense of transdisciplinary hybridity, with rhetoric as the commonality *all* inquiries share. As Robert Scott famously put it, this view implies that rhetoric is epistemic (Scott, 1967). For scholars who study rhetoric, what Herbert W. Simons calls this "rhetorical turn" has turned a 180° on the field's traditionally maligned status, making rhetoric central to just about every kind of scholarship and public affair (Simms, 1990).[4] And given the now seemingly endless implications of rhetoric, rhetoricians began turning in the 1990s to a heated period of self-reflection about their discipline's scope and methods—the other varieties of self-reflexivity mentioned in this paper's opening pages.

In short, the meta-impulse of this period found scholars of rhetoric doing work *about* what work scholars of rhetoric do.  At turns prescriptive and descriptive, such confined scholarship attempts both to position the study of rhetoric ontologically within an interdisciplinary purview that makes the most sense, and to determine how to go about doing such scholarship. These two strains of self-reflection have been characterized, respectively, by

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[4]Considering that Quine, Toulmin, Kuhn and many others integral in this turn were not working under the aegis of rhetoric, it's worth asking whether those who study rhetoric haven't seized such ideas as an opportunistic chance to reclaim some status for their own discipline.

debates between Big Rhetoric vs. Little Rhetoric, and Critical Rhetoric vs. Rhetorical Criticism.

The Big Rhetoric vs. Little Rhetoric debate concerns the viability of what Edward Schiappa describes as "the theoretical position that everything, or virtually everything, can be described as 'rhetorical'" (Schiappa, 2001, 260). That is, the "rhetorical turn" raised questions about rhetoric's universality that some scholars have tried to contest. The idea of "the rhetoric of science"—first described by Philip Wander in a paper bearing that name —has become the most disputed byproduct of universal or Big Rhetoric, and Dilip Gaonkar has been the most outspoken of its critics (Wander, 1976; Gaonkar, 1990a, 1990b, 1993). Schiappa's useful narrative of the debate isolates three primary critiques of Big Rhetoric: (1) if rhetoric is everywhere, it's nowhere (the *definitional* critique); (2) Big Rhetoric leads to weak scholarship (the *evaluative* critique); and (3) without a discrete identity and clear disciplinary history, the discipline of rhetoric is doomed (the *political* critique) (Schiappa, 2001, 267). As for critiques about the rhetoric of science—this inevitable byproduct of rhetoric's expanding claims to relevance—Leah Ceccarelli likewise finds three main tacks mobilized by those trying to defend science from the slippery reach of rhetoric and the humanities: (1) the "recalcitrance of nature;" (2) the "exegetical equality" of scientific communication; and (3) the "institutionally driven" nature of scientific text production (Ceccarelli, 2001, 315). Both Schiappa and Ceccarelli argue that these critiques don't hold up. Rhetoric really is everywhere, and much of what rhetoricians do is show how.

In that case, though, the tradition becomes vulnerable to questions about what it is those studying rhetoric are supposed to practice, and how they ought to do so. Gaonkar traces the foundations of rhetorical criticism to Herbert Wichelns's interest in the literary criticism of oratory, suggesting that, "Wichelns sets into motion a particular dialectic between object and method that later critics have had to negotiate" (Wichelns, 1925; Gaonkar, 1990, 292). Raymie McKerrow earlier hinted at this dialectic in his suggestion that what we commonly call "rhetorical criticism" might more meaningfully be called "critical rhetoric"—the change in emphasis indicating an important difference in approaches to our work (McKerrow, 1989). If the dialectic can be split into two sides— a *critical* rhetoric or a *rhetorical* criticism—Michael Leff and Andrew Sachs, and Michael McGee, respectively, make the best candidates to represent either one. Leff and Sachs advocate for the textual object as that which does the rhetorical acting, while the critic's job is to illuminate the object and the artistry behind it (Leff

and Sachs, 1990; McGee, 1990). Conversely, McGee argues that it is critics who perform the rhetorical act of giving otherwise fragmented texts the unity of a meaning and value. In light of claims, post-Scott, that rhetoric is epistemic, the methodological debate between critical rhetoric and rhetorical criticism bears crucially upon a RoI that would *use rhetoric to expose rhetoric* in knowledge claims. In other words, the debates over scope and method here find their solution in hybridity, whereby rhetoric is both object *and* method—a key move to theorizing in a transdisciplinary mode.

Notwithstanding the fair objection that not all critical rhetoric scholars see rhetorical reflexivity as endemic to their project—a project interested rather in merging rhetoric and critical theory in service of social critique—I think we at least have to recognize that RoI and Critical Rhetoric are mutually implicated in a measure of reflexivity that one brings out when read through the other. Certainly RoI, at least, is both constrained by rhetoric and inexhaustible because of it. The rhetorical practice RoI describes is one both attentive to manifestations of rhetoric in everyday life and to the inescapable rhetoricity inherent in shoring these manifestations together from the discursive practices all around us. In its transdisciplinary register, rhetoric resides not just in the academy or dizzying heights of theory, but in the micro-political and vernacular realm. To discuss it is to enact it.

In the long rhetorical tradition, no project has mobilized a more concerted effort to imagine rhetoric's transdisciplinarity in this way than the Project on RoI. Yet, while such a project survives at Iowa, both in this journal and in academic courses that bears its name, and while it occasionally emerges elsewhere in graduate courses that treat RoI largely as an amberized historical movement, it's worth noting that references to the "rhetoric of inquiry" as such have all but disappeared from current conversations in the field. Google's Ngram Viewer, for instance, which scans millions of books to measure the recurrence of words over time, reveals a graph for a "rhetoric of inquiry" search that looks like a single beat on an EKG: the phrase is nonexistent until 1984, spikes in 1993, and is virtually nonexistent again today. One question to follow from this is whether RoI has become so well established that its tenets are now assimilated into the field's unstated assumptions—rendering RoI "invisible"—or whether RoI's project has rather been refuted and rendered obsolete, untenable, or irrelevant to how scholars want to understand rhetoric today. The recent (re)turn in the field of rhetorical studies to theorizing in a transdisciplinary mode makes a strong case for the former. By comparison, a similarly

transdisciplinary project still very much invested in establishing its own stakes and identity can be seen in the Digital Humanities, to which I now turn.

## THE DIGITAL HUMANITIES

If the metatheoretical assumptions of RoI can be traced to give its project a semblance of coherence, the same luxury cannot so easily be claimed for the still emergent area of scholarship known as Digital Humanities. Indeed, the first thing to say about DH is that it's terribly difficult to say anything definitive about it. Even the grammar is problematic: is it DH plural, or *the* DH singular? (Fitzpatrick, 2011). Whatever the usage, when articulated with RoI, the DH can be treated as a similarly general category of transdisciplinary inquiry with a traceable history, albeit no clear consensus surrounding its identity. From case to case, the inquiries, methods, and metatheoretical assumptions of scholarship undertaken in its name are just too diverse to accommodate any unanimity of DH's scope or purpose. For that reason, and so not to succumb to reductionism in this section's effort to describe DH at large, I offer a necessarily different approach than the close exploration of those metatheoretical underpinnings I tried to illuminate for RoI.  I will suggest, though, that precisely its want of a unifying metatheoretical sensibility has given rise in DH scholarship to the same heightened reflexivity, ontological questions about scope, and concerns about epistemology and methodology that we've already seen RoI exhibit.

Indeed, DH's resistance to definition may be its most unifying trait. Literally *hundreds* of divergent definitions have been proffered to explain DH.[5] There's just no consensus about what DH is or does, if it's a field, a discipline, a subject, a method, an epistemic culture, or, generally, whether its instantiations cohere around any particular set of theories, directives, interests, or priorities. "'Digital humanities,'" as Patrik Svensson puts it—and notice his scare quotes—"probably defies any precise definition" (Svensson, 2010, 20). Dave Parry goes so far as to suggest, "none of us really knows what digital humanities is" (Parry, 2011, 429). These positions are as close to a consensus as we are likely to get. As a result, even those who attempt to define DH gesture toward its undefinability, tending to be broad and vague, as if afraid, on one hand, to limit its possibilities, and on the other, to exclude any of its many iterations.

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[5]See www.whatisdigitalhumanities.com for a compendium of 500 such definitions.

For instance, Burdick *et al.*, in a major book on the subject, define it like this:

> Digital Humanities refers to new modes of scholarship and institutional units for collaborative, transdisciplinary, and computationally engaged research, teaching and publication.

> Digital Humanities is less a unified field than an array of convergent practices that explore a universe in which print is no longer the primary medium in which knowledge is produced and disseminated (Burdick *et al.*, 2012, 122).

As definitions go, that's awfully capacious. Though they elaborate, the difficulty of pinning DH down leads them into apophasis, describing DH by what it is *not*. Similarly, Alan Liu, in his attempt to assess the state of DH in the academy today, admits to defining it "with unusual breadth" and a "supervening sense that combines 'humanities computing' or 'text-based' digital humanities . . . and new media studies" (Liu, 2011, 10). Any number of similarly broad definitions could be furnished. The point is that just about *all* characterizations of the DH as a field or idea virtually tremble with the discomfort of self-definition; there are just no ready-made academic or epistemic frameworks into which DH neatly fits.

The reason for this is clear once one understands DH as fundamentally *transdisciplinary*. Indeed, the definition proffered by Burdick *et al.*, quoted above, names "transdisciplinarity" as one of DH's constitutive features. In their understanding, this transdisciplinarity is one way of marking DH's status as a set of "new modes" for scholarship—a newness that, in turn, contributes to the apparently universal difficulty of finding a language appropriate to describe DH in the first place.  Others have made the case more directly. Yu-Wei Lin, in an essay included in an edited collection called *Understanding Digital Humanities* (which itself consists almost entirely of chapters devoted to its eponymous task), argues that DH signal a "shift toward transdisciplinarity in the humanities" by merging computer-assisted tools for both quantitative and qualitative analysis of texts with the more traditional humane analysis that has hitherto been the mainstay of humanities research (Lin, 2012, 312). Following work by Patricia Rosenfield (1992), Lin suggests that the DH are transdisciplinary in the sense that DH work "radicalizes existing disciplinary norms and practices and allows researchers to go beyond their parent disciplines, using a shared conceptual framework that draws together concepts, theories, and approaches from various

disciplines into something new that transcends them all" (Lin, 2012, 298). Again, this "something new" is at issue. In the language of Snow's two cultures model, a transdisciplinary notion of DH would seem to approach the elusive "third culture" for which there is no cohesive terminology, no methodology, no framework for conceptualization, and so on. No wonder no one can agree about understanding the DH.

But a comparative understanding, achieved by thinking metatheoretically about DH alongside RoI, may help to develop some ways to think through the implications of theorizing in a transdisciplinary mode. What's interesting about articulating these two particular cases within Snow's framework is the chiasmatic relationship that emerges in their comparison. To put it in terms Snow might have appreciated, RoI makes science humanistic; DH makes the humanities scientific. Put differently, just as RoI *exports* a rhetorical lens to inform the inquiries of other disciplines, the DH *import* into the humanities the epistemic tools of the sciences. Of course, the complexity of both projects goes well beyond such a simple import/export calculus.[6] But a closer look at the history of DH does begin to show that the metatheoretical stakes in its case are quite similar to those we've already seen in the parallel story of RoI.

Whereas the story offered about RoI traced its particular trajectory from its roots at the University of Iowa, the story offered here about DH follows its lineage back to a related field known as "humanities computing." Humanities computing is what one called DH before it existed under that name. The titular shift from one to the other has a specific history with implications beyond the scope of this essay. (For more on the change in terminology, see McCarty, 2005; Svensson, 2009; and Kirschenbaum, 2011.) In brief, though, while the two terms refer to and connote different enterprises, they can be understood as growing from a more or less common intellectual movement with a specific founder and moment of formation: Roberto Busa, in 1949.

An Italian Jesuit priest with a Ph.D., Father Busa used an early computer to make an automatically generated concordance of the works of Thomas Aquinas—totaling some 11 million words of Medieval Latin (Busa, 1980; Winter, 1999). Concordances had

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[6]It is not the case, for instance, that DH scholars rely *only* on what is sometimes called "distant reading" or "macroanalysis." Certainly "close reading" and the whole range of hermeneutic practices are also involved in work that falls under the DH name.

existed before[7] but never before had they been automated so as to make quantitative analysis of huge bodies of text convenient and efficient. Busa's concordance changed the nature of humanities scholarship, or at least its tools, giving a previously qualitative field greater quantitative exactitude. After Busa, humanities scholars began to recognize that computers could radically change the possibilities for critical engagement by increasing the verifiability of interpretive claims about different texts. Not only could they index, count word frequency, and create concordances of literary works, but computer-generated data could also be used to study style, authorship, and a host of textual attributions previously only accessible from a qualitative frame.

Cast in this lineage, it is easier to see how the quantitative empiricism and analytic efficiencies of the digital realm have imbued DH with a methodological rigor that descends from a decidedly non-humanistic cultural lens. To put a point on it, although concerned with understanding and interpreting humanistic texts—religious tracts, novels, plays, and so forth—humanities computing provided the basis for an emergent DH tied to the specific epistemic culture of the sciences.[8] As Stephen Ramsay sees it, that means that the whole *raison d'être* of the DH now "is scientific method joined to humanistic inquiry" (Ramsay, 2011, ix). Given its roots in humanities computing, the DH as such thus operates bestride, on one hand, an epistemic culture of science inherited from the modernist rationalism of Descartes and the foundationalism of the logical empiricists, and, on the other, a humanities tradition that honors the likes of Nietzsche's moves to renounce categorical conceptions of truth, or the subsequent poststructural and postmodernist rejection of the universal claims of grand narratives (Nietzche 2012/1873; Lyotard, 1979). By its very

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[7]The first known concordance was the *Concordantiae Sacrorum Bibliorum*, a concordance of the Vulgate Bible, dated to 1230 (Hindley, 2013). Of course, mechanisms to manipulate knowledge predate even that. We hardly recognize anymore that books themselves are one such mechanism. A book is, in the words of I.A. Richards, "a machine to think with" (Richards, 1926, 1). Such mechanisms continue to evolve over time, from ancient codices to Dewey's decimal system to the powerful search engine algorithms of today. The point is that Father Busa's concordance was the first to develop computing technology for use in the analysis of non-digital texts.

[8] Epistemic cultures, as Karin Knorr Cetina describes them, are "those amalgams of arrangements and mechanisms—bonded through affinity, necessity, and historical coincidence—which, in a given field, make up *how we know what we know*" (Cetina, 1999, 1).

nature, then, as Susan Hockey explains, DH "has had to embrace 'the two cultures', to bring the rigor and systematic unambiguous procedural methodologies characteristic of the sciences to address problems within the humanities that had hitherto been most often treated in a serendipitous fashion" (Hockey, 2004, 1). Clearly, in the lineage of Busa's humanities computing, the growth of DH has found it straddling Snow's two epistemic cultures.[9] The ubiquitous self-reflexivity that marks its academic discourse today might then be explained in part as an effort to understand on which foot to put the most weight.

Indeed, Patrick Svensson has argued that the expansion of DH has brought with it the inclusion of heterogeneous epistemologies from different disciplines, which is one reason DH is so difficult to pin down (Svensson, 2009). Its "intersectional position" makes it quintessentially transdisciplinary: DH, he says, "tend[s] to depend on interaction with other institutions to a larger extent than most traditional departments and disciplines" (Svensson, 2011, 37). Such dependence only complicates the epistemological foundation of the field, making it look inward for an epistemic trump card like the one RoI finds in a universal rhetoric. As was the case with RoI, the search to find and justify its own epistemic culture charges DH scholarship's indulgence in self-analysis.

In short, *as transdisciplinary projects*, DH and RoI both bring into focus the comparative epistemologies of the sciences and humanities. RoI's version of this story has been told. But DH, too, is invested in a self-reflexive effort to scrutinize its epistemological assumptions: "to ask, in the context of computing, what can (and must) be known of our artifacts, how we know what we know about them, and how new knowledge is made" (McCarty, 2003, 1231). The difficulty is, while RoI privileges rhetoric—amorphous, mercurial, slippery rhetoric—in the making of knowledge, DH seems to privilege the logic of the computer—"a device that is wholly intolerant toward equivocation and uncertainty" (Ramsay, 2011, ix). Accordingly, the "dominant assumption" of DH holds that "if the computer is to be useful to the humanist, its efficacy must necessarily lie in the aptness of the scientific metaphor for

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[9]Hockey seems to make this argument in her compelling four-phase genealogy of the field, beginning with Father Busa's work and its influence through the sixties, passing to a period of institutional consolidation in the seventies and eighties, expanding further with the growing ubiquity and repercussions of personal computing by the early nineties, and entering its current state of multiplicity in the Internet age today (Hockey, 2004).

humanistic study" (Ramsay, 2011, x). Here we have a problem. If, as we've seen, RoI makes problematic the "scientific metaphor" of knowledge, then where does that leave a DH held up by an epistemic culture of science, when that very culture is now thought in fact to be undergirded by an epistemic culture of rhetoric?

In a general register, one answer to this question might be that transdisciplinarity simply fails. But another, more interesting possibility is that a given transdisciplinary project may itself transcend disciplines, though that same transdisciplinary project may have a harder time jibing with another transdisciplinary alternative. Such a curious possibility suggests that talking across epistemic borders is feasible in itself, but that different attempts to do so may have a hard time finding a common language. The next question to ask, then, is a matter of scope. In other words, if the epistemic assumptions of one transdisciplinary movement are incommensurable with another, despite appearances to the contrary, where do we draw the limits on claims of metatheoretical commonality across areas of inquiry?

The Project on RoI spurred this question in the form of the Big Rhetoric vs. Little Rhetoric debates (Gross and Keith, 1997). In the case of DH, a corresponding concern can be found in the 2011 DH conference at Stanford University, which had the theme, "Big Tent Digital Humanities." Arguments about big tent DH have involved the field's disciplinary allegiances and the scope of its interests and responsibilities. Once thriving, the humanities have lately come upon tough times. As rhetoric has traditionally been maligned with low status in and out of the academy, and in turn sees hopes for redemption in the universalism of RoI, so too has hope for the bleak outlook of humanities scholarship been vested in the encompassing significance of DH. "Arguably," Svensson suggests, "much of the hope and interest currently invested in the digital humanities relates to an inclusive notion of the field and a sense of the digital humanities as a way of reconfiguring the humanities" (Svensson, 2011, 36). Debates over the "big tent" scope of DH thus have institutional and intellectual repercussions as scholars stake ground for the breadth of their inquiries and the institutional affiliations and funding necessary to carry them out.

But if ontological questions about DH's scope arise from its troubled epistemic footing, they're also implicated in equally animated debates about DH's methods. This, too, should sound familiar to the story of RoI; both find their investigation of scope and method inseparably intertwined. The link in both cases is each field's respective objects of inquiry. As Gaonkar illustrated, the implications of rhetoric's alleged universality made it necessary to

reevaluate the relationship between object and method that had existed in the discipline from the start (Gaonkar, 1990). The ensuing argument over rhetorical criticism and critical rhetoric took sides over what counted as the discipline's objects and methods. A parallel argument in DH troubles the field in the form of discussions about what counts as its texts and its tools.

It's not just that DH scholars use computers to crunch big data or aid in the analysis of "texts" pertinent to a humanistic interest. Some DH work also retains traditional humanistic methods and epistemological standards (for instance, the "close reading" done by a human interpreter-critic) to approach new objects of inquiry such as digital hypertexts or the implications of new media more broadly. In this sense, their objects of inquiry are digital, but their methods or basis for knowledge claims are not necessarily so. Arguments about the size of a DH "tent" are thus implicitly arguments about whether the tent "be taken to include critical work construing the digital as an object of inquiry rather than as a tool" (Svensson, 2011, 41). Here again, the comparative epistemologies of the sciences and humanities are never far away. Johanna Drucker points out that when humanistic scholars incorporate complex advances in data mining, geospatial representation, and visualization protocols into their work, they inevitably use methods "whose epistemological foundations and fundamental values are at odds with, or even hostile to, the humanities" (Drucker, 2011, 86). These methods, she says, are "positivistic, strictly quantitative, mechanistic, reductive and literal"—they are "anathema to humanistic thought" and "fundamentally resistant to qualitative approaches" (Drucker, 2011, 86). What Drucker calls "the persuasive and seductive rhetorical force" of these technologies ends up disguising the inevitable constraints of their method with the promise of their inexhaustible application, necessitating some reflexivity about the process of inquiry (Drucker, 2011, 86).

In the account I have been trying to present, this reflexivity comes to the fore. The DH began with scholars using the tools of computing technology to conduct more quantitatively grounded literary analysis. As the value of these tools for further applications such as database design, imaging, numerical analysis, cataloging, and other functions has become more clear to other disciplines, a "methodological commons" has arisen among several disciplines united by an interest in using digital technologies to improve their scholarship (McCarty, 2003). Inevitably, as technologies advance, these tools have become more complex; they've come to be guided by theories that challenge the positivist tradition of computing that made them such useful tools to begin with. By now tools themselves

have become worthwhile objects of inquiry, and their creation alone has become inherently valuable. Once that has happened, when what was once treated as an analytic tool itself becomes a text for analysis or invention, the question becomes, What tools or methods do we use to analyze the tools? A meta-discourse seems inevitable.

In short, the transdisciplinary nature of DH gives rise to stakes that are not just epistemological or methodological, but fundamentally ontological as the diversity and scope of its concerns become increasingly expansive. This is why DH so resists definition. Its epistemic culture, its methods, its scope, and what DH *is* in the first place all draw the field ever inward toward recurrent self-analysis. Given the metadiscursive parallels between RoI and DH, this begins to reveal a wonderful irony: namely, the attempt to chart and inexhaustibly expand a field's relevance and reach seems to require the extreme constraint of that field by limiting its discursive practices to discussion of its discursive practices. And what's more constrained than that?

## CONCLUSIONS: COMMUNICATION AND TRANSDISCIPLINARITY

Although self-reflexivity is a demonstrable characteristic of the two transdisciplinary projects I have discussed, this does not mean that where self-reflexivity exists so too necessarily does transdisciplinary theory. At some point or another, *all* academic fields probably engage in some reflection about their assumptions and values, their methods and epistemic commitments. Doing so is a useful way to monitor and ensure a discipline's internal rigor, coherence, and quality.  Doing so also creates an opportunity to address the politics of institutional practices that may or may not obstruct the field's ability to advance its aims; for instance, by questioning the prevalence of males in the sciences, examining citational politics relative to tenure, or challenging the peer-review process. Self-reflexivity alone, then, is not a sufficient condition for describing theory in a transdisciplinary mode.

A key implication of this paper's discussion, however, is that self-reflexivity is a *necessary* condition of transdisciplinary theory. Admittedly, based on a comparison of only two projects, it is hardly justifiable to conclude that *all* transdisciplinary theory exhibits the traits shared by RoI and DH.  Investigating a wider sample size of other avowedly transdisciplinary enterprises would strengthen any claims for a wider "theory of transdisciplinary theory." But there's the rub. Transdisciplinary theory is, inevitably, a theory of itself.  It

is a theory in which metatheoretical commitments are asked to bridge disciplinary or two-culture divides. As such, it cannot *not* reflect on its own assumptions—epistemological, ontological, methodological—because the whole point of theory in the mode of its transdisciplinarity is to make a case for a transcendent kind of inquiry: a kind of inquiry possible precisely because of its attentiveness to which epistemological, ontological, and methodological commitments enable different "cultures" to interact.

At a minimum, I hope to have shown that such attentiveness is evident in the similar if chiasmatic trajectories, concerns, and practices of RoI and DH. To stop there would, I think, be valuable enough. But the implications of comparing these two projects go further. Curiously, the metatheoretical considerations of epistemology, ontology, and methodology that I've identified in both RoI and DH are almost exactly the same considerations that James Anderson has influentially identified as the fundamental types of metatheoretical assumptions undergirding all theories of *communication* (Anderson, 1996; Anderson and Baym, 2004)[10]. In this light, it is conceivable to imagine that transdisciplinary theories are inherently also tacit theories of communication. And in that case, the central challenge posed by theory in a transdisciplinary mode may be to identify what theory of communication it advances. How is communication itself, as C.P. Snow intimated in 1959, the most formidable barrier in the two cultures divide? The search for an answer would seem to make the field of communication theory itself the site of transdisciplinary inquiry *par excellence.*

One problem, though, as Robert T. Craig has drawn on Anderson's work to show, is that no coherent field of communication theory even exists (Craig, 1999). Instead, Craig has identified eight major yet discrete traditions of communication theory: rhetoric, semiotics, cybernetics, phenomenology, social psychology, socio-cultural theory, critical theory, and (in a 2007 extension of his original argument) pragmatism (Craig, 2007). Any theory of communication, he says, derives from the metatheoretical assumptions of one of these traditions. Craig's constitutive "meta-model" in turn suggests that in place of coherence we are better off addressing the "commonly understood (though always contestable) set of assumptions that would enable productive argumentation

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[10]Anderson includes methodology within separate *axiological* and *praxeological* categories. Although I have not used these categories in my analysis of RoI and DH, I suspect adhering fully to Anderson's heuristic would yield similar results.

across the diverse traditions of communication theory" at large (Craig, 1999, 120). Such a program, in other words, recognizes that to theorize communication in the first place is to engage in discourse about discourse, which is fundamentally the same self-reflexive position that RoI and DH have found themselves unable to escape, though each from their own traditions. Applied to transdisciplinarity, Craig's meta-model implies that despite transdisciplinary theory's aim of advancing metatheoretical commitments capable of transcending all disciplinary divides, different transdisciplinary projects will themselves always remain in negotiation with one another. A trans-transdisciplinary theory remains elusive.

Of course, if the RoI and the DH make communication an arch-concern of transdisciplinarity, they do not do so conspicuously. In fact, "communication" *per se* remains largely off their radar. The DH scholar Alan Liu has noticed this peculiarity and remarked that digital humanists in particular "rarely give equal weight to the idea of *communication*" as they do to the epistemological, ontological, and methodological concerns I've been considering here, even though communication seems rather at the shared heart of both a social science and humanistic project (Liu, 2011, 17). "The digital humanities on both its text-oriented and new media studies side," Liu concludes perplexedly, "have hit the mute button on communication" (Liu, 2011, 17). Considering that scholars of rhetoric are often housed within speech communication departments, the RoI's silence regarding communication is equally peculiar.

But the absence of an overt attention to communication from both projects makes some sense if we begin to understand theory in its transdisciplinary mode as *constitutive* of—not merely "about"—the communication theory tradition to which its import/export maneuvers are committed. RoI, obviously, privileges the metatheoretical assumptions of the rhetorical tradition. If DH scholars are still engaged in debates about their project's cohesiveness, that is perhaps because their transdisciplinary inclinations show inconsistent allegiances: to a cybernetic tradition here, to a semiotic tradition there, and so on. In the larger context of the differences between Snow's "two cultures," we would of course be wise to acknowledge that RoI, in its own self-conception, has been concerned specifically with the human sciences, and accordingly might be better seen as a kind of outreach from the humanities side that has largely been unreciprocated from the sciences. Conversely, the DH have reached out and pulled in some

aspects of scientific culture, from what I can see with little resistance or concern from the sciences.

That does not mean that either program is necessarily what we'd call the "third culture" that transdisciplinarity seems to promise. What it does suggest, I think, is that attempts at transdisciplinarity, such as these programs endeavor, are bound to implicate themselves in reflexive conversations about their epistemic values, methods, and scope of influence. Those of us invested particularly in the resurgence of transdisciplinarity as a privileged mode of rhetorical theory can benefit from these insights and endeavor to avoid, or at least acknowledge, the reflexivity that sometimes gums up our actual business. Ultimately, it may be wise to see transdisciplinarity in its own right as a kind of ninth tradition of communication theory—or perhaps, as some kind of meta-meta-model that requires the mind's equivalent of double-dutch just to comprehend. Theory in a transdisciplinary mode is fundamentally intertextual. Its discourses converge and diverge, collide and overlap, fragment and grow. These are all promising things.

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