A Constructive Approach to Infrastructure: Infrastructure 'Breakdowns' and the Cultivation of Rhetorical Wisdom

Jennifer Clifton
University of Texas at El Paso, jlclifton@utep.edu

Jordan Loveridge
Arizona State University

Elenore Long
Arizona State University

A Constructive Approach to Infrastructure: Infrastructure 'Breakdowns' and the Cultivation of Rhetorical Wisdom

Jennifer Clifton, Jordan Loveridge, and Elenore Long

It is not typically the bent of infrastructure to be continually responsive in a way that is expansive and inclusive; instead, for newcomers or those with alternative histories, aims, vision, values, and perspectives, the inertia of infrastructure is more likely to be experienced as infrastructural breakdowns. We ask: *What might wisdom look like in these "structured" encounters? That is, what is the intellectual work of rhetoric on those thin ledges where institutional chronos shapes and limits possibilities for knowledge work and working relationships among people who likely would not have otherwise met?* In response, we advance a framework for a constructive approach to infrastructure—one that prizes deliberation over rationalization and actively attends to the warrants underlying calls for public engagement. We first consider the relationship between infrastructure, rhetorical wisdom, and the imagination of possibilities, then lay out a framework for cultivating rhetorical wisdom in response to infrastructure breakdowns.

Keywords: infrastructure, rhetorical wisdom, phronesis, constructive planning, schemas

At its best, rhetoric tools the vital and difficult work of negotiating meaning with others, of making sense of each other's differences, of building a world we want to live in together. Of course, we do not build a world—a world as it "ought to be" (Horton qtd. in Branch 145)—from scratch. Instead, we start with a world ready-made where signs carry the slippery and contradictory meanings of others; where they signify differently for different folks, with real and uneven consequences; and where the systems we find ourselves part of work better for some and not others, putting us all "in [o]ur place" (Dryer 520). As James Berlin argues, rhetoric is not a neutral techne but "a part of social and political structures" that articulate the nature of the "individual within those structures and the distribution of power" (4). Our encounters with these "structuring structures"—as Pierre Bourdieu calls them— reveal the razor edge on which the promise of rhetoric and the scales of justice teeter. This volume of *Community Literacy Journal* dedicated to engaged infrastructure is an opportunity to ask: *what, then, might wisdom look like in these "structured" encounters? That is, what is the intellectual work of rhetoric on those thin ledges where*

institutional chronos shapes and limits possibilities for knowledge work and working relationships among people who likely would not have otherwise met?

But first some definitions are in order. In defining infrastructure, Susan Leigh Star and Karen Ruhleder note that infrastructure, like a tool, "is not just a thing with pre-given attributes frozen in time" but "something that emerges for people in practice, connected to activities and structures" (112). A thing becomes a tool when it is put to use; its tool-ness is then primarily a function of its material and symbolic affordances and constraints in relation to rhetorical exigencies. A chair, for example, may become a different kind of tool—something to sit on, to stand on, to fend off imaginary lions with—depending on different needs and different ways a person can construct multiple, perhaps unconventional, uses for a chair *in situ*. Like a tool, infrastructure is not simply something on its own; instead, infrastructure is fundamentally relational and appears—makes itself visible—"as a relational property, not as a thing stripped of use" (Star and Ruhleder 113). Neither is infrastructure only below the surface, something that makes something else go (112). As Star and Ruhleder explain, "for the plumber, the waterworks system in a household connected to the city water system is target object, not background support" (113). This situated, relational, ecological approach to infrastructure leads them, and us, to "ask, *when*— not *what*—is an infrastructure" (113).

This definitional shift focuses attention on infrastructural relations and how we do infrastructure—and especially how we face infrastructural "breakdowns" and tensions between multiple local uses and needs and broader scaled and standardized uses. These breakdowns are when normally invisible infrastructure is suddenly rendered visible and a site of conflict, necessitating deliberation. Breakdowns naturally emerge from the paradox of *structuration*—what becomes stabilized becomes fodder for adaptations which in turn are calibrated, standardized, and calcified in use with others (Star and Ruhleder). Further, breakdowns are inevitable in light of the dispersed nature of large-scale infrastructure—like the infrastructures of our institutions, our disciplines, and like any infrastructure — that may emerge among us as scholars of community writing that needs to meet the demands of multiple communities of practice with their own standards and varied needs. Infrastructure, and thus, infrastructure breakdowns are, then, not only material and technological, but also organizational, cultural, and political. If inevitable sites of infrastructure breakdowns are to be more than mere sites of sustaining power relations and insider rationalizations, they must be recognized as generative sites of knowledge-building and especially as sites for the cultivation of rhetorical wisdom.

Infrastructure, like any rhetorical in(ter)vention, presents numerous dangers if it is not continually attentive not only to new exigencies that might arise but also to changes of people, values, resources, and constraints. Community literacy scholars warn of town-gown in(ter)ventions that create uneven demands on time and resources, hierarchical relationships, less than useful practices, transactional and superficial learning opportunities, and more structured rather than flexible interactions beyond the academy (Ackerman and Coogan; Flower *Community*;

Goldblatt *Because*; Grabill *Community*; Mathieu; Restaino and Cella). Of course, these possibilities rightly haunt community-writing advocates because town-gown in(ter)ventions are inevitably inflected with power. Just as patterns and structures of power make us wary about our in(ter)ventions beyond the academy, they should also make us wary within the academy, and thus, eager to foster a constructive approach to infrastructure within and across institutions. And yet it is not typically the bent of infrastructure to be continually responsive in a way that is expansive and inclusive; instead, newcomers or those with alternative histories, aims, vision, values, and perspectives are more likely to "wrestle with the inertia of the installed base" (Star and Ruhleder 113) and its particular values, standards, strengths, limitations, and machinations. This is the paradox we seek to make actionable in this article.

Inquiry into engaged infrastructure for community writing invites consideration of not only the day-to-day functionality involved in sponsoring community writing (however defined) but also the underlying assumptions that serve to warrant a given version—a specific schema—of community writing. Schematic approaches to engagement and infrastructure are the result of the accretion and transmission of past instances of rhetorical deliberation about public engagement; they represent the accumulating attempts at considering the ways, means, and ends of engagement and the infrastructure to achieve it. Each schema (e.g. grassroots organizing, service-learning, intercultural inquiry, and so on) circulates its own logics and warranted assumptions about *circumstances* that give rise to the need for community writing; about *practices* that support available roles, activities, and tools; and about *outcomes* including consequences, stranger-relationality, and deliverables.

Schema-driven approaches to infrastructure rely on a well-structured body of shared information, structured by and shared through previous specific instances but functioning primarily as abstract or prototypical representations (Flower, *Construction* 132). They tend to function "as a set of instructions, first, for interpreting a new situation (i.e., by identifying it as an instance of the schema) and, second, for generating schema-supplied information to the gaps in what is given" (133). That is, schema-driven approaches to infrastructure rely heavily on *past types* of experiences and responses to inform what comes next. Previous experiences of this schema create the conditions for uptake, suggesting ready-made exigencies, packaging pre-formed practices, and producing familiar outcomes.

Certainly, there can be wisdom in the shorthand of schema-driven approaches to infrastructure. However, schema-driven approaches also reach their limits in what is recurrent and recognizable when the task at hand is more complex than a previous schema can account for, or when the warranted assumptions underlying a schema for community writing conjure and produce a value-laden world that others don't want to inhabit, for whatever reason. Sometimes some structure is needed that is more tailored and precise to the particular, and likely multiple, demands and constraints of this new exigency; sometimes a situation or the knowledge and tools that can be brought to bear must be transformed in some way; sometimes the world that came before is not the world that is wanted now. Sometimes the world that is needed is

not a world that yet exists—which is to say sometimes there is no previous world, no prior schema, that is entirely sufficient for structuring just and flexible responses to contemporary hurdles. Especially under such circumstances, a constructive approach (Flower, *Construction* 52-55) to infrastructure is called for. Such an approach prizes flexibility and *rhetorical* wisdom over efficiency and learned conventions. Where schema-driven approaches rely on past types to reproduce particular kinds of community writing, constructive approaches take a critical and inventive approach to schemas and to rhetorical exigencies to draw on moments of conflict—particularly infrastructure breakdowns—as generative sites for re-building shared processes and shared knowledge.

As such, in this essay we advance a framework for a constructive approach to infrastructure—one that prizes deliberation over rationalization and actively attends to the warrants underlying calls for public engagement. In order to do so, we first consider the relationship between infrastructure, rhetorical wisdom, and the imagination of possibilities, then lay out a framework for cultivating rhetorical wisdom in response to infrastructure "breakdowns."

Infrastructure, Rhetorical Wisdom, and the Possible

The intellectual work of creating and sustaining infrastructure, as routine and ordinary as that work may be, builds in assumptions about how the world—of ideas, of people, of materials—*should* be organized (Johnson 1) and transforms those assumptions into how the world *is* organized. With its heavy reliance on practices, materials, and aims that emerged in the past and its often-unquestioned embrace of efficiency, infrastructure tends to convert reasoning—a deliberative occurrence in the present—into rationalization—an already-made justification of a past decision. This ongoing and often invisible conversion in which "[ra]tionality presented as rationalization is shown to be a principal strategy in the exercise of power" (Flyvbjerg 2) is more insidious and, perhaps also more effective, when carried out and distributed through the routine and sometimes hidden mechanisms of infrastructure.

Infrastructure, is, then, the healthy and material "thinking out" of an institution— a "thinking out" that qualitatively shapes the entire set of activities in which workers engage (Spinuzzi 38), "materializ[ing] the situated knowledge work of the past and us[ing] it to organize *and produce* the present and future" (Johnson 1). Infrastructure, thus, *encodes* the values of the past into what become institutional habits. It operationalizes institutional warrants—institutional logics embedded in processes and social activities that allow, perpetuate, and shape what *is* possible as well as what *seems* possible—without requiring deliberation over the warranted assumptions that supported the move from past exigencies to current possibilities, or impossibilities.

As institutionalized social relations accrue and sediment over time, an origin point becomes perhaps less important than the ongoing production of warranted

assumptions through the persistence of practices that absorb, delay, frustrate, defer, and bind up alternative and emergent ways of being. In the case of engagement, this persistence impacts the ways we come to imagine ourselves, strangers, institutions, and public life—what kinds of people, relationships, activities, and publics *are possible*—all deeply connected to the development of practical *rhetorical* wisdom. After all, rhetoric deals with "contingencies and … decisions about future courses of action, whose outcome is unknown and whose consequences are unforeseen" (Poulakos 61). In an uncertain world in flux, the work of rhetoric is to "determin[e] 'points of reference'" in order "to create paths in uncharted territory—to help one find one's way in the dark" (Atwill 68); in other words, the work of rhetoric is to cultivate wise judgments. And in this vast expanse where a person might determine points of reference and create paths that are to some degree useful or harmful, the possibility of wisdom relies on an artful rhetorical response (Long)—strategic, subject to revision, and ever attentive to the stochastic pursuit (Clifton) of a shared world as it "ought to be" (Horton qtd. in Branch).

Infrastructure, at its best, carries and produces value-oriented wisdom, charted over time and across familiar and changing circumstances. It scaffolds and coordinates how we manage "the circumstances which [we] encounter day by day," and it informs and produces judgments about the course of action best suited to those circumstances (Isocrates, *Panathenaicus* 12.30). And yet, infrastructure tends toward the stability and predictability of the past rather than the uncertain and unforeseen of the now and next. In fact, in institutions, staying power is often held up as proof of infrastructure's wisdom; but staying power, stability, and historical precedent are not necessarily markers of *rhetorical* wisdom, which is more concerned with value-oriented collaborative inquiry, imagination, and invention in the face of uncertainty.

Infrastructure gains its efficiency and constrains imagination through repetition and recurrence, which produce what seem to be fixed boundaries. Existing infrastructure held together and operationalized in the most mundane and ordinary ways—through emails, memos, meetings, and so on—cues us about institutional norms as it orders and normalizes relationships and activities. In perceiving and recognizing what we are now part of and in taking up an institution's call for particular kinds of relationships and particular schemas of activities, over time, we see and learn and produce the kind of institution and infrastructure we've come to recognize:

> It is like going to a dining room or a dance hall, or seminar or church. You know what you are getting into and what range of relations and objects will likely be realized there. You adopt a frame of mind, set your hopes, plan accordingly, and begin acting with that orientation.
> (Bazerman, "Genre" 14)

In this overtly spatial and institutional characterization of the ways readers and writers take up familiar recurring social situations, Charles Bazerman describes

genres. This characterization extends, too, to schemas of community writing that inform the materials, practices, tools, and relations of infrastructure—"not as inert containers of the social, but as fields with material and cognitive implications for those who enter them" (Dryer 504). The places we inhabit coordinate not only recurring activities, recognizable in their recurrence, but also recurring mindsets and possibilities. As responses to familiar situations recur and become routinized, so, too, do particular ways of knowing and being and doing—through which we come to perceive coherent schemas, in this case, for community writing. As we recognize and take on those mindsets and practices, we reproduce the value-laden warrants underlying them. Our imaginations—integral to rhetorical invention and rhetorical wisdom—are, then, constrained not only by the activities that seem possible but also by the warrants informing what possibilities might be desirable.

These constraints are not universal, applying to everyone in the same way; they are patterned and particular and unpredictable. Not only is paradox built into the nature of infrastructure but also into the conditions in which infrastructure needs to work. Thus, community literacy scholars, who regularly respond to constraints that are contingent and irregular, need practices that support artful and morally attuned responses, even—and perhaps especially—in relation to previous "points of reference" (Atwill 68) that structured activities and relationships useful to address what came before. Infrastructure's bent toward continuity can sometimes cue recurrent and familiar responses, even when conditions may be more new than given, and more or differently ambiguous than what was previously known. The cues and responses supported by infrastructure teach a sense of social location—teach us to literally know our place (cf. Dryer 504)—a 'placement' reflected and maintained by our felt senses of what a particular infrastructure deems appropriate, possible and available *for us* (Dryer 520).

A Constructive Approach to Infrastructure ''Breakdowns'':

Cultivating Rhetorical Wisdom

A constructive approach to infrastructure attends to exigencies at hand to draw insight from actually existing conflict—often over infrastructure "breakdowns" (Star and Ruhleder) that reflect a disjuncture in warranted assumptions embedded in infrastructure—as generative grist for re-building shared processes and shared knowledge. Below we commend three concepts for re-seeing "breakdowns" as productive disruptions and sites for cultivating rhetorical wisdom: interrogating routinized social relations that put people in their place (Dryer); dissensus as a measure of a healthy public (Bruner); and the moral underground as a check on institutional power (Dodson). We suggest these concepts as heuristics for operationalizing a constructive approach to infrastructure under conditions of uncertainty, conflict, and difference in which we all must chart out some course

of action not knowing exactly what will unfold. None of us knows the measure of our actions—the wisdom of them—if we know it at all, until well after we act. This uncertainty in charting out wise action and the necessary waiting as we make sense of the changes our actions have, intentionally or not, initiated, necessitates ongoing deliberation. Local deliberation that actively pursues these concepts-in-action may be the best chance we have of transforming the conflict affiliated with infrastructure breakdowns into possibilities for cultivating shared rhetorical wisdom. These practices offer glimpses for how to take up the work at hand—work and working relationships that call into being a public world that strangers desire, at least temporarily, to inhabit with one another.

Interrogating routinized social relations (Dryer)

Dryer warns that a danger of infrastructure is that it wears down differences—making ranges of people's aspirations and experiences less vivid and distinctive, folding differences into what has been uniform by re-directing them back to the routine. These disciplining routines don't have to be visible and often are not visible until a person attempts to question or re-write them. When an infrastructure relies too heavily on rationalization, it attempts to minimize, thwart, or evade the possibility of contestation, deliberation, and change, often through cumbersome requirements intended to frustrate dissenters until they become too weary to persist, saying, "I would like this to be possible, but those aspirations don't seem compatible with this infrastructure." The alternatives are clear: either get in line or conclude, "There's no space for me or for reconfiguring the world here." Such requirements engage dissenters in a frustrating and wearisome disciplining, of being "put in one's place" (Dryer)—a kind of a self-flogging in which a person participates in her own subjugation. Dryer urges readers into the fray to reconsider how what is familiar and recurring came to be so, and what happens to people who try to interrogate what's underneath. Interrogating how routinized social relations put people in their place is a necessary capacity for re-seeing infrastructure breakdowns as sites for cultivating rhetorical wisdom.

Valuing dissensus (Bruner)

The extent that a public can handle critique of itself is a measure of its capacity to pursue justice. M. Lane Bruner argues that "[t]he public work of rhetoric is to critique the distance between our ideational and material economies as best we can" (59). Such critique serves to expose the "deep distance" (Bruner 63) between what infrastructures profess about themselves and what people actually experience of infrastructure. Bruner describes this as "limit work" enacted through "the proliferation of counterpublics with sufficient force to ensure constant critique of laws, institutions, and disciplinary measures" (61). Such dissensus fosters better "understand[ing of] the relationship between discourse and the political" in order

to leverage available means to productively transform "breakdowns" into sites of building shared values, aims, and processes. Conversely when an infrastructure persists in telling people to get in line rather than attending to and negotiating new meaning and/or practices in light of dissensus—when it "suppress[es] critical thought" in any number of ways (63)—this exercise sustains existing relations of power that some may experience as ineffective and/or unjust.

The moral underground as a check on power (Dodson)

When people object to something about an infrastructure, often what they're objecting to are not the pragmatics—the policies and practices for accomplishing tasks—but rather particular self-other relations, the *morality*, that the infrastructure renders normal. In her study with working class laborers and middle class managers, Lisa Dodson observed that since business and labor institutions were no longer responsive to the community's ethical values (instead attempting to regulate their values and beliefs through the exercise of power), workers and managers turned their rhetorical attention to a subversive counterpublic which more closely represented their values and commitments. A moral underground emerges precisely because there is no legitimized space for consequential deliberation and usually in response to a dominant culture in which it is too risky to articulate alternative values or enact alternative structures. The construction of an underground is an overt acknowledgement that an infrastructure is, by Bruner's measure, demonstrably unhealthy in its inability to take a counterpublic critique seriously.

Together, these concepts call for actionable options at the nexus of dissensus and power. They highlight that dissensus is indicative of competing warrants of what ought to be. Those assumptions—often articulated even as they are routinely operationalized—indicate a reasonability at work, but one that the current dissensus is raising for re/evaluation. With regard to infrastructure for community writing, these concepts together reflect a need for a rhetorical wisdom that takes a constructive approach to infrastructure breakdowns—exigencies sometimes newly created by critique of the infrastructure itself.

Conclusion

Infrastructure, at times a necessary means of shared memory and efficiency, needs to also support constructive approaches to exigencies and just self-other relations, welcoming sites of dissonance and recognizing them as something sacred—as a window into a world underneath, as the possibility of something new to make together, as an invitation to revise our schemas of "rhetoric's role in reconfiguring the polis and in reconstituting the work of the polis" (Ackerman and Coogan 10). This work is not simply institutional or programmatic; it is deeply and artfully performative: as

kinetic as it is cerebral, as relational as it is point-driven, as poetic as it is practical. For scholars of community writing, a constructive approach to infrastructure and its inevitable breakdowns is also some of the most important work we can take up—not only because of the ways discourse enables or limits other practical actions we take, but more importantly because we make and re-make the worlds we inhabit through the ways we frame what we imagine to be possible as what is possible with each other through language.

Works Cited

Ackerman, John M. and David J. Coogan. *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*. Columbia: U of South Carolina P, 2010. Print.

Atwill, Janet. *Rhetoric Reclaimed: Aristotle and the Liberal Arts Tradition*. Ithaca, NY: Cornell UP, 1998. Print.

Bazerman, Charles. "Genre and Identity: Citizenship in the Age of the Internet and the Age of Global Capitalism." *Rhetoric and Ideology of Genre: Strategies for Stability and Change*. Ed. Richard M. Coe, Lorelei Lingard and Tatiana Teslenko. Cresskill: Hampton P, 2002. 13-37. Print.

Berlin, James. *Rhetoric and Reality: Writing Instruction in American Colleges, 1900-1985.* Carbondale, IL: Southern Illinois UP, 1987. Print.

Bourdieu, Pierre. *Pascalian Meditations.* Trans. Richard Nice. Palo Alto: Stanford UP, 2000. Print.

Branch, Kirk. *Eyes on the Ought to Be: What We Teach When We Teach About Literacy*. Cresskill: Hampton P, 2007. Print.

Bruner, M. Lane. "The Public Work of Critical Political Communication." *The Public Work of Rhetoric: Citizen-Scholars and Civic Engagement*. Ed. John M. Ackerman and David J. Coogan. Columbia: U of South Carolina P, 2010: 56-75. Print.

Clifton, Jennifer L. "Mastery, Failure and Community Outreach as a Stochastic Art: Lessons Learned with the Sudanese Diaspora in Phoenix." *Unsustainable: Owning Our Best, Short-Lived Efforts at Community Writing Work* Ed. Laurie Cella and Jessica Restaino. Cultural Studies/Pedagogy/Activism series. Lexington Books, 2013: 227-52. Print.

Dodson, Lisa. *The Moral Underground: How Ordinary Americans Subvert an Unfair Economy*. New York: New, 2009. Print.

Dryer, Dylan B. "Taking Up Space: On Genre Systems as Geographies of the Possible." *JAC* 28.3/4 (2008): 503-34. *JSTOR*. Web.

Flower, Linda. *Community Literacy and the Rhetoric of Public Engagement*. Southern Illinois UP, 2008. Print.

_____. *The Construction of Negotiated Meaning: A Social Cognitive Theory of Writing*. Carbondale: Southern Illinois UP, 1994. Print.

Flyvbjerg, Bent. *Rationality and Power: Democracy in Practice.* Chicago: U of Chicago P, 1998.

Goldblatt, Eli. *Because We Live Here: Sponsoring Literacy beyond the College Curriculum.* Cresskill, NJ: Hampton, 2007. Print.

Grabill, Jeffery. *Community Literacy Programs and the Politics of Change*. Albany: SUNY P, 2004. Print.

Isocrates. "Panathenaicus." *Isocrates with an English Translation in Three Volumes*. Trans. George Norlin. Cambridge, MA: Harvard UP; William Heinemann Ltd, 1980. Perseus Digital Library. Web.

Johnson, Nathan. "Information Infrastructure as Rhetoric: Tools for Analysis." *Poroi: An Interdisciplinary Journal of Rhetorical Analysis and Invention.* 8.21 (2012). n.p. Web.

Long, Elenore. *A Responsive Rhetorical Art for Contemporary Public Life*. (In preparation)

Loveridge, Jordan, Elenore Long, and Jennifer Clifton. Institutional Logics: Prominent Schemas of Community Writing. (In preparation)

Mathieu, Paula. *Tactics of Hope: The Public Turn in English Composition*. Heinemann, 2005. Print.

Poulakos, Takis. "Isocrates' Use of Doxa." *Philosophy and Rhetoric* 34.1 (2001): 61-78. Print.

Restaino, Jessica and Laurie Cella. (Eds.), *Unsustainable: Re-imagining Community Literacy, Public Writing, Service-Learning, and the University*. Lexington, 2012. Print.

Spinuzzi, Clay. "Describing Assemblages: Genre Sets, Systems, Repertoires, and Ecologies." *Computer Writing and Research Lab*. (May 2004): 1-8. Web.

Star, Susan Leigh and Karen Ruhleder. "Steps Toward an Ecology of Infrastructure: Design and Access for Large Information Spaces. *Information Systems Research*. 7.1 (1996): 111-134. Print.

Author Bios

Jennifer Clifton, assistant professor of Rhetoric and Writing Studies at The University of Texas at El Paso, is author of *Argument as Dialogue Across Difference: Engaging Youth in Public Literacies* (Routledge 2017) and co-author of *Dialoguing Across Cultures, Identities, and Learning: Crosscurrents and Complexities in Literacy Classrooms* (Routledge 2017).

Jordan Loveridge, a PhD Candidate in Writing, Rhetorics, and Literacies at Arizona State University, specializes in the history of rhetoric. His work appears or is forthcoming in *Advances in the History of Rhetoric* and *Philosophy and Rhetoric*.

Elenore Long, associate professor of Community Literacy at Arizona State University, is author of *Community Literacy and the Rhetoric of Local Publics* (Parlor Press 2008). Her current project, A Responsive Rhetorical Art for Contemporary Public Life (in progress), theorizes early uptake—the call and response that sometimes coaxes, sometimes launches a public into being even while what a concern *is* and what's *shared* about it are still coming into focus.