Review Essay

Writing in Digital Environments: Everything Old Is New Again

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Alexander, Jonathan, and Jacqueline Rhodes. *On Multimodality: New Media in Composition Studies*. Urbana: CCC and NCTE, 2014. Print. 230 pages.

Barton, David, and Carmen Lee. *Language Online: Investigating Digital Texts and Practices*. New York: Routledge, 2013. Print. 208 pages.

Berry, Patrick W., Gail E. Hawisher, and Cynthia L. Selfe. *Transnational Literate Lives in Digital Times*. Logan: Computers and Composition Digital P/Utah State UP, 2012. Web.

Borrowman, Shane, ed. *On the Blunt Edge: Technology in Composition's History and Pedagogy*. Anderson: Parlor P, 2012. Print. 178 pages.

Braun, Catherine C. *Cultivating Ecologies for Digital Media Work: The Case of English Studies*. Carbondale: Southern Illinois UP, 2014. Print. 224 pages.

Delagrange, Susan H. *Technologies of Wonder: Rhetorical Practice in a Digital World*. Logan: Utah State UP/Computers and Composition Digital P, 2011. Web.

Halbritter, Bump. *Mics, Cameras, Symbolic Action: Audio-Visual Rhetoric for Writing Teachers*. Anderson: Parlor P, 2013. Print. 275 pages.

Journet, Debra, Cheryl Ball, and Ryan Trauman, eds. *The New Work of Composing*. Logan: Computers and Composition Digital P/Utah State UP, 2012. Web.

McKee, Heidi A., and Dànielle Nicole DeVoss, eds. *Digital Writing Assessment and Evaluation*. Logan: Computers and Composition Digital P/ Utah State UP, 2013. Web.

National Writing Project (Dànielle Nicole DeVoss, Elyse Eidman-Aadahl, and Troy Hicks). *Because Digital Writing Matters: Improving Student Writing in Online and Multimedia Environments*. San Francisco: Wiley, 2010. Print. 194 pages.

Palmeri, Jason. *Remixing Composition: A History of Multimodal Writing Pedagogy.* Carbondale: Southern Illinois UP, 2012. Print. 194 pages.

Rice, Jeff. *Digital Detroit: Rhetoric and Space in the Age of the Network.* Carbondale: Southern Illinois UP, 2012. Print. 247 pages.

Ulman, H. Lewis, Scott Lloyd DeWitt, and Cynthia L. Selfe, eds. *Stories That Speak to Us.* Logan: Computers and Composition Digital P/Utah State UP, 2013. Web.

> *The web is a fabulous—and dangerous—resource.*

> —Anonymous survey respondent in Braun

Claude Shannon liked to work in the old West Village headquarters of Bell Laboratories. Trains ran right through the building, and Shannon preferred it there to the New Jersey location where most of his colleagues kept their offices. His Murray Hill employers, tucked away in the pastoral suburb of northern New Jersey, were not really sure what he was up to, rambling around Manhattan. That was for the best because he was secretly working on cryptography that would allow Franklin D. Roosevelt and Winston Churchill to communicate across the Atlantic without interception from the German military. As Shannon would later tell interviewer Robert Price, his original interest was information theory, and he used cryptography as a way of legitimizing his work.

When "A Mathematical Theory of Communication" was published in the October 1948 issue of *Bell Systems Technical Journal*—the paper that would first use the term *information theory* and ensure Shannon's legacy as founder of the digital age—few libraries carried copies of the journal, and fewer still were those who could understand the mathematics. But Warren Weaver grasped the implication. As the director of natural sciences for the Rockefeller Foundation, he wrote an essay that made Shannon's ideas intelligible for general readers with definitions of terms ("The word communication will be used here in a very broad sense to include all of the procedures by which one mind may affect another" [Shannon and Weaver 95]) and analogies drawn from the lecture circuit ("By direct analogy, if you overcrowd the capacity of the audience you force a general and inescapable error and confusion" [Shannon and Weaver 116]). Along with Shannon's paper, Weaver's translation of it was published as a book in 1948. Calculations for bit storage, the estimation of entropy that could account for information capacity, became the blueprint for the world we now know.

"Information is what our world runs on: the blood and the fuel, the vital principle," James Gleick wrote in 2011 as he told the story of information theory as it sprung from the imagination of Shannon and became manifest in the socially networked world of Web 2.0. As Gleik demonstrates in his engaging history, information permeates and transforms. Because information is about communication, as Shannon well knew, words have multiple meaning even if we have to deny that fact to develop the technology for channel capacity and bit storage.

There are many ways to legitimize work. "Naming is an ideological act," Jacqueline Rhodes and Jonathan Alexander remind us in their 2014 special issue of *College English* (483), and the social turn that examines relationships among language, meaning, and context is everywhere apparent in remarkable books on writing in digital environments that have appeared over the past four years. As this review of digital writing's history, theory, pedagogy, identity, representation, research, and future demonstrates, our field—classified under the title Rhetoric and Composition/Writing Studies (Phelps and Ackerman)—is especially well positioned to make sense of what happens when Shannon's encoded signal gets complicated by its destination: the humans at the end of the information flow.

It Happened in Athens

There is only one problem with Shane Borrowman's edited collection *On the Blunt Edge: Technology in Composition's History and Pedagogy*: it's just too brief. Adopting the analytic framework of Science, Technology, and Society studies (McGinn), Borrowman has assembled leading scholars to provide perspectives on the history, values, politics, and economics of those technologies that came before IBM PCs and Macintosh computers found their way to our desktops in the early 1980s. Present scholarship suggests that the origin of graphical representation of language is found in Mesopotamia and Egypt at the end of the fourth millennium BCE, in China at the end of the second millennium BCE, and in Mesoamerica by the middle of the first millennium BCE (Houston; Woods et al). The collection of nine case studies begins with a cultural analysis of the range of writing in classical Athens, an ideal selection of a city that prized the social turn of its literacy. Analyzing the educational, civic, commercial, and expressive uses of writing allows Richard Leo Enos to reveal a rich culture of functional literacy in the city extending beyond utilitarian commercial transactions into broader ranges of daily life. In a related demonstration of cultural complexity associated with the technology of writing, Daniel R. Frederick examines the development of the Greek alphabet by focusing on modes of transpor-

tation facilitating rhetorical education. If Gorgias walks the twenty-two miles from Leontini to Syracuse on the first leg of his lecture tour, Frederick reminds us, he will need a boat to carry him over the sea to Athens. From Greek shoes (*anthrokinetic* power) to Roman roads (*Via Appia*), Frederick provides an absorbing account of the material world facilitating the convergence of teacher, student, and facility in ancient education.

As might be expected in such a collection, market forces play a distinct role. From the moveable type of Johannes Gutenberg's printing press in 1450 to the first typewriter of Christopher Latham Sholes in 1873, there is a palpable absence of benevolent and philanthropic principles, as Richard W. Rawnsley demonstrates. Raw capitalism is the order of the day, and even our most beloved narratives must be jettisoned as we examine the role of efficiency in the pursuit of profit. The QWERTY arrangement of letters on the keyboard is not there for scientific principles associated with ergonomics after all; the letters are in that order to keep the typebars from sticking. Even handwriting, a technology that can express our most intimate selves in the most evocative ways, is a vehicle for the study of consequence. For Kathleen Blake Yancey, handwriting is shaped by, and shapes, culture—including the contact zone between students, the SAT Writing section, essay readers, and admission directors. As is often the case when technology and society intersect, there are occasions for what Yancey calls "a perfect storm of anxiety" as college admission is determined by handwritten essays (80).

Augmenting the Science, Technology, and Society approach of Borrowman is Jason Palmeri's *Remixing Composition: A History of Multimodal Writing Pedagogy*. Palmeri examines the heritage that compositionists bring to the study of multimodal composing—communication combining the verbal and the visual to achieve a desired aim. This perspective means that his history takes a dim view of an imagined death of print; instead of such fear mongering, Palmeri is dedicated to analysis of the complex role technologies have played within the field of writing studies. Avoiding the rhetoric of crisis surrounding literacy, a phenomenon explicated by Richard Ohmann through Marxist critique, Palmeri provides a history that challenges value-laden taxonomies of print versus digital writing and teleological narratives in which the past inevitably results in improved present practice.

Emphasizing a language arts approach, Palmeri begins his periodization with Janet Emig's classic, *The Composing Process of Twelfth Graders*. A 1971 write-up of research that occurred just before the enormous national push for state-wide assessments described by Edward M. White, Emig advocated for attention to "experiences in allied arts through creative arts workshops" (98). Painting, songwriting, and sculpting are all occasions for the study of

composing, as Palmeri notes, and he recalls Emig's emphasis on the value of instructors themselves composing in alphabetic, aural, visual, and spatial modalities to help them understand the complex processes that occur when one moves beyond formulaic, product-centered models that often accompany standardization through testing. In Palmeri's subsequent chapters, attention is turned to auditory pedagogy (1965–1987), composition's first multimedia turn (1967–1974), and the relationship of writing to photography and film (1971–1984). In addition to this meticulous and thoughtful history, Palmeri also provides "macro theoretical" sections accompanying each historical episode to help readers "reimagine what it means to study and teach composition in the contemporary digital moment" (44). His "refrains," as he calls them, range from the pedagogically aphoristic ("Alphabetic writing is a profoundly multimodal process" [44]) to the theoretically generative ("Media critique and media production are symbiotic activities" [145]). The brief epilogue is worth the price of purchase for its pedagogical goals. It is heartening to see such detailed, intelligent, reflective historical accounts from an early career researcher. As is the case with the Borrowman book, also by an early career scholar, one simply wants more.

8 Mile

Because they provide an excellent background for historical examination on the role of early technologies and multimodal practice in our literate lives, Borrowman's collection and Palmeri's study should be read just before *Digital Detroit: Rhetoric and Space in the Age of the Network* by Jeff Rice. As precious to Rice as the handwriting of her parents and grandparents is to Yancey, Detroit becomes the source of Rice's theory of the network. As a way to understand the relationships between rhetorical understanding and corporeal embodiment in the digital age, Rice proposes the network as a moveable trope that functions through fluidity, not fixity. To explain how this theory works, Rice provides an example. Imagine using Google Maps to locate a jewelry and loan shop on 8 Mile Road in Detroit. Because you watch the television series *Hardcore Pawn*, you find the street address of American Jewelry and Loan, the setting of the series. Provided by Google Maps, however, this address is mediated by interlinked, non-mapping programs such as Flickr and its micro-blogging feature. Ranging from casual comments on the reality series to reflections on the racialized transactions within the pawnshop, observations posted on the weblog accompanying Flickr restructure your interpretation of the physical location. The location is surely there, but the interpretations of it keep meaning in flux.

Because the network is not a thing but a concept (as Latour has noted), Rice uses it to examine the role of information in a digital society. The index of names trotted out to support this theory is as varied as its applications. References to Michel de Certeau appear alongside Bob Dylan, and both Marshall McLuhan and Eminem lend support to Rice's proposal of using the network to understand location. Because the use of theory always has an outcome, this one is no exception: Since there is no location, there is no sense of an ending. There is no resolution of stories captured in the network, no sad or happy ending. There is only that which is good enough. For Rice, interpretation is non-teleological, with final causes and consequences hustled off stage as fiction. There is no myth of progress for those along 8 Mile, a road where life is lived on *La Frontera* as complex as any described by Gloria Anzaldúa. All that can be hoped for in Rice's Detroit is to dispel myth with the realities of contingency.

While readers of philosophy may wonder if this project is merely an extension of that begun by Richard Rorty in *Contingency, Irony, and Solidarity*, there is a difference that lies in Rice's reliance on narrative. While recognizing that Detroit suffers, Rice also realizes that repeating the narrative of failure has done little to alter the city's conditions. The result of the Grand Narrative of Failure has been only the repetition of failure. Rice, therefore, proposes that we use the digital environment to reconceptualize location, saturate it with meaning, and interrupt the existing dysfunction. To understand the nuance of Rice's proposal for reconceptualization, one need only to compare it with the capital projects in downtown Detroit sponsored by Quicken Loans billionaire owner Dan Gilbert (Austen). For Gilbert, success is measured by occupied commercial real estate; for Rice, success is measured by improved realism through better information. For Gilbert, a 99% residency rate is the outcome of success; for Rice, this outcome is only temporal and tangential to deeply ingrained problems such as those found along 8 Mile. In the network, those problems can only be understood through a process of information gathering that results in moments of understanding that are, well, good enough.

The concept of that which is good enough—a still place symbolizing a realistic level of decision-making in light of complex factors—also plays a role in *The New Work of Composing*, edited by Debra Journet, Cheryl Ball, and Ryan Trauman. In an especially intriguing chapter, Joddy Murray, who has also been reading de Certeau, uses cityscapes to extend the concept of non-discursive rhetoric he developed in his earlier book on image and artifact in multimodal composition. Augmenting concepts from Susanne Langer, Murray deals with the importance of non-discursive rhetoric and its reliance on simultaneous perception. In such a rhetorical environment,

the ends of logic (the series of strategies leading toward a 99% residency rate in, say, downtown Detroit) are set aside in favor of ineffable experiences (the voices of those living in the shadows of the restored National Bank of Detroit Building).

Significant in *The New Work of Composing* is both the message and the medium. Murray's ideas are presented in an 8:35 minute YouTube video. Sentences advance and recede, and architectural images cascade across the screen. "The work of composing must be entirely rethought in the digital domain," N. Katherine Hayles writes in the foreword, and one cannot help but imagine her delight after reading this digital collection that there may indeed be more pleasure than terror after all in a post-human world. The digital world need not be antihuman or apocalyptic, as Hayles described it in 1999; instead, it can be seen as a reflexive nexus between established and new ways of thinking about authors and authority, composing and production, scholarly genres, and new spaces and ecologies—the four central themes of this edited collection. Because the format is multimodal in this "born digital project," as Kaitlin M. Clinnin has described it, the table of contents need not appear as stacked. With a click, the twelve chapters swirl and reorganize themselves so that readers can visualize the themes and their connections to each chapter. The article by Murray is no longer Chapter 6. With a click, it is grouped with others chapters covering the theme of new spaces and ecologies.

With just such a click, the chapter by Jacqueline Rhodes and Jonathan Alexander stands out as indicative of the benefits of a digital nexus and the subsequent challenges of the network. Created by Rhodes and Alexander, "Experience, Embodiment, Excess: Multimedia[ted] [E]vsiceration and Installation Rhetoric" is an account of a multimedia installation presented at the 2008 Watson Conference at the University of Louisville. Conference participants entered into a semi-dark room to view images of texts and bodies. The texts rotated among various quotations from *Writing Machines* by Hayles, *Publics and Counterpublics* by Michael Warner, and three questions: Where is my body? How can I imagine my body? Where are my desires?

As the authors reflect on their installation, "Our bodies *are* projected. Constantly. Ubiquitously. But in the lags, corruption, and error—even in the excesses of bodies in simulation—lies perhaps the possibility to think [about] our bodies, our desires, and our intimacies differently." Lest this connection between our bodies and our writing appear yoked together by will, we need only to remind ourselves that writing studies involves the production of texts that appear in both print and digital embodiment. We are thus always and everywhere obliged to understand the varied spaces of composition, as Nedra Reynolds recognized in *Geographies of Writing:*

Inhabiting Places and Encountering Difference. Indeed, bodily representation need not occur according to normative boundaries. Required, Rhodes and Alexander write, "are productive new ways of thinking rhetorics, thinking bodies, and thinking connections between rhetorics and bodies." Here is work in a new genre for writing studies, yielding benefits of theory-building that simply could not occur by focus on print alone. Winner of the 2012 Distinguished Book Award from *Computers and Composition*, *The New Work of Composing* is a substantial contribution to our field.

Seriously!

Among the many voices in *The New Work of Composing*, we also find those of students. Calling themselves The Normal Group, undergraduates who attended the Watson Conference posted a video of their experiences. In "Gotcha," at 2:27 minutes we hear the voice of a scholar telling the audience that he will read his slides to the audience. A sentence scrolls over his voice: "So you want us to read what you're reading as you read it to us?" Then, just after the word "Seriously?" appears, the camera pans to sleeping students in the audience. Cap on backwards, one of them then asks, "Whose fault is it that they're asleep?"

As only bright undergraduates can, The Normal Group presents an LOL treatment of the need for alignment between theory and practice. As they write, "We acknowledge that the conference is mainly for other teachers, not undergraduates, but through this video, we playfully question whether that assumption continues to be worthwhile in a world where digital immigrants (teachers) and digital natives (us) need to learn from each other in order to succeed."

Answering the call of these students are three new books that focus on instruction and assessment of writing in digital environments. *Because Digital Writing Matters: Improving Student Writing in Online and Multimedia Environments* is a project of the National Writing Project (NWP), the gold standard network of educators who have been collaborating since 1984 to improve writing studies in the nation's elementary and secondary schools. For those welcoming high school students to their first college experience, Dànielle Nicole DeVoss, Elyse Ediman-Aadahl, and Troy Hicks of NWP have provided a wonderful guide to accompany the 2006 classic *Because Writing Matters: Improving Student Writing in Our Schools*. As education historian Robert L. Hampel has observed, grades 11 to 14 are often less coherent than the first two years of high school and the last two years of college. Add to this gumbo social networking and collaborative writing techniques that are the result of the Shannon-inspired bandwidth, and we

quickly realize the value of *Because Digital Writing Matters*. Here is a book that all post-secondary instructors specializing in first-year writing should have on their shelves.

Remarkable in this volume is the depth of the justification for attention to digital writing and the detailed mapping of its landscape. Whether the authors are synthesizing information from Pew Internet Research Studies or providing narratives from their own experiences, readers will appreciate the clarity of attention to key areas of importance to writing studies. From their treatment of the writing process to their use of the metaphor of ecologies, from their analysis of standards to their call for professional development of instructors, the authors have expertly charted the ubiquitous terrain of digital environments. "Something feels significantly different," they write,

> at this particular moment, both in terms of the larger field and in terms of what we have learned in our talks with educators across the nation. The tools and environments we have been discussing in this book are not particularly tools for schools to manage their job, as currently constructed, more efficiently. They are not primarily tools for institutions at all. They are tools for learners and writers, and as learners and writers begin to use them across many areas of their lives outside of school, these tools will have a profound impact on the core business of life itself—and that is the core business that schools and writing classrooms attend to. (142)

Linking in-classroom time to out-of-classroom time is an invaluable perspective of the volume, one that allows us to see students as active learners who have agentic roles in their own future.

But how will we make the new stick to the known? Duct tape, according to Bump Halbritter. In his *Mics, Cameras, Symbolic Action: Audio-Visual Rhetoric for Writing Teachers*, Halbritter has written a witty and perceptive account that ranges from Kenneth Burke's concept of the rebirth involved in terministic catharsis (linguistic transformation occurring when meaning shifts) to the necessity of always having a backup wired microphone (practical necessity when the net crashes). Winner of the 2013 Distinguished Book Award from *Computers and Composition*, Halbritter has provided a guide to multimodal writing as only a working musician can: by attending not to perfect systems but to that which is practically good enough. Arriving at a conference to present audio-visual research, he finds no screen so pulls a white table cloth off the stage and tapes it to the wall. An ad hoc fix, duct tape becomes the symbol of the way things are now as we scaffold our solutions together. Where there is enough duct tape, Halbritter proposes,

there may be more permanent answers. Imagined as a companion to *A Rhetoric for Writing Teachers* by his mentor, Erika Lindemann, Halbritter's book is just that. For two generations of writing instructors, Lindemann proved a reliable guide to rhetorical theory and practice, captivating readers with accounts of classical rhetoric that provided the bottom line on the nihilism of Gorgias and advice on how to handle the paper load. To help guide us through today's mashup, Halbritter quotes from John Dewey, provides layouts for mic placement in a presentation room, and lists tips for shot variety. May his guide be as useful as Lindemann's. Wise and full of tips for those teaching multimodal writing, *Mics, Cameras, Symbolic Action* should sit just beside *Because Digital Writing Matters* on the shelf.

Complementing calls for a more capacious understanding for digital tools and the student networks into which they are embedded is *Digital Writing Assessment and Evaluation*, edited by Heidi A. McKee and Dànielle Nicole DeVoss. The fourteen chapters in this volume provide a countermeasure to Michael R. Neal's 2011 treatment of digital assessment technologies. Aligned with the "values of efficiency, uniformity, speed, and mechanization," digital technologies hold the potential to usurp the values of teaching and learning, he warned (132). Emphasis on genre yields a different view. "Our focus with digital writing is on multimodal and/or networked texts for which essayistic assessment and evaluation of writing cannot necessarily port over seamlessly," the editors write in a remarkably understated sentence. Much of what we know about writing assessment is built on a single genre; shifting genres from the essay has allowed the editors to create a significant resource that will serve as a basis for future writing assessment scholarship.

Exactly what can be accomplished if we expand our genres? In 2003, the National Coalition for Electronic Portfolio research was founded. In 2006, to reflect its global membership, the organization was renamed the Inter/National Coalition for Electronic Portfolio Research (Cambridge, Cambridge, and Yancey). This period has witnessed the transition from ePortfolios as electronic filing cabinets into which files, often containing only essays, were uploaded to today's multimodal creations. Receding are the Web 1.0 static screens of the twentieth century; advancing are the twenty-first century Web 2.0 social networks with students anxious to use visual and audio techniques to produce the new work of composing. Offering a theory of assessing ePortfolios, Kathleen Blake Yancey, Stephen J. McElroy, and Elizabeth Powers focus on assessments that attend to the elements of personalization, coherence, reflection, context, and design. A new vocabulary for the traits to be assessed, the authors propose, is needed to

capture the complex, often non-discursive performances that emerge from the ePortfolios themselves.

Yet, although some aspects of assessment in digital environments are new (such as the increased potential for representations of the construct of writing), others endure (such as the need to ensure equity). Of special interest in this collection is the chapter by Mya Poe, "Making Digital Writing Assessment Fair for Diverse Writers." Advancing the work of her edited volume with Asao B. Inoue, Poe calls attention to enduring questions of fairness as they are addressed in large scale assessments that accompany digital writing instruction. Focusing on the *Standards for Educational and Psychological Testing* established by the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education, Poe identifies the need for an accompanying set of digital writing standards for fair assessment to be developed by the writing studies community. Faithful to the contextualized demands of writing studies, her analysis extends beyond guidelines. Emphasizing the need for information on all groups of students, Poe recognizes the need for collecting information on diverse student groups in the design stage of the assessment. Identity formation—race, gender, ethnicity, sexual orientation—can then be combined with information about the digital identities of students. Her precise identification of educational measurement concepts, combined with our field's demand for educational equity, deepens our knowledge of the issues surrounding contextualization in digital environments.

Because this book is web-based, let's bookmark it along with *The New Work of Composing*. Let's also agree to keep track of journals featuring assessing performance in multimodal writing such as the 2014 special issue of *Computers and Composition* edited by Carl Whithaus.

Doing the Risky Thing

Let's ask that question about agency again, but this time, let's focus on the academic scene: As genres of writing are expanded, who is to gain and who is to lose?

In *Cultivating Ecologies for Digital Media Work: The Case of English Studies*, Catherine C. Braun has produced a detailed study of professional identity in the broad discipline of English Language and Literature. The first book-length empirical investigation of the challenges that face those in the field of writing studies as they pursue professional recognition of their own digital scholarship, this milestone volume is a clear-headed account that should be read by those who have the most to lose (administrators) and who have the most to gain (students).

As the sampling plan for her study, Braun selected departments in three public research universities in the Midwest. Each enrolled 35,000 to 40,000 students, with at least 10,000 undergraduate students. Because entering student data is not given, it is difficult to compare this study with other research on postsecondary education; nevertheless, it is probably safe to assume that these three universities are similar to either the flagship or state system universities identified in *Crossing the Finish Line* by William G. Bowen, Matthew M. Chingos, and Michael S. McPherson. Such comparison is important if we are to make inferences about the promotion and tenure practices in these departments as they are related to student success in our nation's universities. To deepen her study, Braun conducted interviews with key departmental administrators and surveyed seventy-eight doctoral students and twenty-seven assistant professors.

Analysis is drawn from three academic units: a print-centric department in which the products of both scholarship and teaching are understood solely in the essayistic tradition; a parallel cultures department in which print and multimodal scholarship and teaching are separate and sometimes equal; and the integrated literacies department in which interdisciplinarity is the order of the day. In an informed analysis appearing very early in the study, Braun identifies binary opposition—the value dualisms that insist on hierarchy of the book over digital scholarship—as a key interpretative framework. After analyzing a transcript of a graduate student in the parallel cultures department, Braun writes the following: "Digital media threaten the object of study central to [the student's] professional identity as a teacher and researcher; therefore, she navigates the binary opposition by emphasizing the book and distancing herself, as much as possible, from digital media" (26). In the integrated literacies department, an assistant professor expresses the polar opposite. "Everything I do," she tells Braun, "is mediated by the Web, Adobe Photoshop, MS Word, and Corel Word-Perfect, PowerPoint, etc. *Everything*" (26). And wedging the value dualism even deeper is the chair of the print centric department. For him, the question of digital scholarship "is moot as long as the monograph is king" (96).

Now in my own anecdotage, I confess to a great deal of sadness in reading *Cultivating Ecologies for Digital Media Work*. The wise advice of a senior scholar to graduate students considering digital scholarship—do the risky thing but make sure that someone's got your back—is all too common. Far too often, senior researchers have to intervene as systems designed to evaluative research and teaching falter due to the conceptual shortcomings and antiquated practices of chairs, deans, and provosts. In this war zone of conflicting values and personal cruelty, both early career researchers and capable students are collateral damage. As I sat waiting outside far too many

offices during a long career to make interventions on behalf of early career digital researchers due for promotion and tenure, I often reflected that those I was waiting to see had the most to lose by making these colleagues feel unwelcome in what was supposed to be their academic home.

If we take Braun's book as a way to understand more deeply the statistical findings of Bowen, Chingos, and McPherson regarding unacceptable retention and graduation rates, we gain a sense of why the "overall level of educational attainment in the United States today is both too low and stagnant" (223). In many ways, Braun's book provides a sense of context and detail absent from the quantitative research in *Crossing the Finish Line*. Official policy, chair and departmental leadership, public forums, curriculum design, mentoring, and facilities development are among the key areas identified by Braun as ways to obviate binary opposition for the good of students—those who have the most to gain. A remarkable book, *Cultivating Ecologies for Digital Media Work* is a superb way to understand the contexts for large scale studies that identify trends but fail to help us understand the deeply complex reasons for those trends.

Documentary Work

My anecdotage sadness is dispelled by turning to three marvelous scholarly works, each a model of new genres of multimodal research.

Winner of both the 2013 Conference on College Composition and Communication Outstanding Book Award and the Coalition of Women Scholars in the History of Rhetoric's 2012 The Winifred Bryan Horner Outstanding Book Award, *Technologies of Wonder: Rhetorical Practice in a Digital World* by Susan H. Delagrange is an elegant volume that substantiates just how to cultivate scholarship for digital media work. With "deep and satisfying roots in print culture" and "an equally intense and long-standing enchantment with digital media and visual rhetoric," Delagrange presents a hybrid project that must be read using Adobe Reader, Flash Player, and a keen mind. *Technologies of Wonder: Rhetorical Practice in a Digital World* is a detailed examination of the theoretical and pedagogical foundations for multimodal digital scholarship that also stands as an embodiment of such work.

With Rhodes and Alexander, Delagrange insists on reinscription—the fluid performance of rhetorical conceptualization—as a vehicle for legitimacy that is both theoretical and pedagogical. At the heart of her book is *Wunderkammern*, collections of natural and human-made objects that inspire. As a form of visual inquiry, wonder allows us to express perplexity ("I wonder . . . ?") and delight ("Wonderful!"), and her digital volume

is a demonstration of the richness of the concept. Images from Albrecht Dürer's *On Symmetry* and Robert Hooke's *Micrographia* accompany film clips from Pierre Janet on dance and Christopher Baker on toy guns. The result is a rich rhetorical *techné* of invention—not so much sets of tools but rather complex rhetorical acts. Lest such theoretical premises seem forced (Seriously?), Delagrange often reflects on her own classroom practice. Realizing that an assignment asking students to identify a social issue, research it, and produce a public service announcement resulted in clichéd videos, she revises the assignment to allow students to investigate topics from multiple perspectives, build personal digital workspaces, and to come to their own conclusions about whether a problem exists in the first place. Results of reinscription, these shifts in pedagogy foster inquiry and thus unify theory and practice. Because the framework for *Technologies of Wonder* is feminist, theory and practice are no longer viewed as the killer dichotomies described by Ann Berthoff—the binary value dualisms that insist on rigid dichotomous hierarchy of one term (theory, mind) over another (practice, body).

An objective correlative, *Technologies of Wonder* embodies what T.S. Eliot described as "a set of objects, a situation, a chain of events" that are the very essence of a response (92). What does high-level digital scholarship look like? It looks like this book. As Delagrange demonstrates in her insistence on the unity of form and content, the monograph need not be king. Here is a beautiful book that must be read.

In *Stories That Speak to Us*, editors Lewis H. Ulman, Scott Lloyd DeWitt, and Cynthia L. Selfe have selected literacy narratives—descriptions of how individuals learned to read and write—from the Digital Archive of Literacy Narratives (DALN) and asked researchers to come to terms with what they found there. From within this publically available online archive of over 3,600 such narratives, eighteen are featured and explicated in varied print, video, and audio formats. Because it is an unruly collection, as David Bloom characterizes it, the collection may be read as both an archive and a theory.

As archive, *Stories That Speak to Us* becomes a digital documentary study. Read in this fashion, Flash presentations and text capture a range of literacy narratives from African-American women to Nepal cross-generational English language learners. Defined by Robert Coles as both explicit description and implicit instruction for the reader, the documentary tradition provides a record made in many ways with "different voices and visions, interests and concerns" (144). The twofold struggle of the documentarist described by Coles—the attempt to capture what can be found and the need to craft its context—is met in new ways by the multimodality of the eighteen narratives and the amplifications that accompany

them. Due to multimodality so expertly employed throughout the collection, there is vividness and immediacy that Coles, writing in 1997, could not imagine. As theory, Cynthia Selfe and the DALN Consortium present a scholarly reading of the collection by focusing on narrative. Calling on research by Deborah Brandt among others, Selfe reminds readers of the deeply situated nature of literacy. As such, the narratives evoke themes of identity, cultural context, individual agency, social action, and education as we watch "people fashion their lives and make sense of their world" in these stories as they speak to us.

If that project may be understood as a broad documentary study, *Transnational Literate Lives in Digital Times* may be understood as a structured investigation of digital literacy practices. Authors of landmark research of a generation of students with global connections, Patrick W. Berry, Gail E. Hawisher, and Cynthia L. Selfe asked thirteen study participants born between 1969 and 1988 about the contexts in which they learned to use digital communication technologies, especially computers, and about their experiences in doing so. The researchers also asked certain participants to create process videos in which they recorded their activities as they wrote. Additional stories and videos were then collected about context: family history, literacy practices and values, memories of schooling environments and workplace experiences, and descriptions of digital media avoidance and use.

From Sarajevo to Sydney, from Bangladesh to South Korea, from Peru to China, we observe individuals communicating across geographically discontinuous communities. Records of these digitally literate practices validate Rice's theory of the network: There is no simple mapping of meaning onto the longitude and latitude of geographic space. Skype emerges as transnational software facilitating the making of meaning, and the social networking of Facebook allows community formation. Keenly aware of the benefits and costs of digital technologies, participants deploy a wide variety of information and communication technologies, from text messaging when there is limited Internet access to mobile phone calls to aging parents. Using cell phones to cultivate personal relationships and email to communicate workplace complexity to employers, these study participants are keenly aware of the need to align rhetorical strategy with audience. With such rich linguistic resources at their disposal, participants avoid the killer dichotomies identified by Braun and Delagrange and embrace both print and digital literacies, often seeking connections between the lives of their parents and their own in terms of the value of education. Far from the reckless crowd depicted by Andrew Keen, participants had a keen sense of appropriate technology use to forge transnational, culturally diverse identities.

Technologies of Wonder, Stories That Speak to Us and *Transnational Literate Lives*—and all of the digital books presented in this review—have been published by Computers and Composition Digital Press (CCDP). An imprint of Utah State University Press, CCDP was founded in 2007 and is an example of what can occur when a wide variety of colleagues—from provosts to researchers to web design specialists—come together in support of multimodal digital projects receiving rigorous peer review. In their acknowledgments, Berry, Hawisher, and Selfe thank Michael Spooner, Director of Utah State University Press, for his long-standing support for such work. In the new world of digital scholarship, it is comforting to know that values of integrity, creativity, and collegiality endure in publishers. Let's agree to bookmark these five volumes.

Into the Field

Methodologically, Berry, Hawisher, and Selfe conclude that digital media are powerful research tools for collecting and exhibiting life history interviews, literacy narratives, and writing process videos when these tools are put in the hands of both researchers and research participants. In *Language Online: Investigating Digital Texts and Practices,* David Barton and Carmen Lee present a detailed account of why that is so.

As a guide for research methods used in the study of digital communication, theirs is the first single volume of its kind. Due to overwhelming forces of multilingualism, migration, and digital communication, Barton and Lee have found the study of language is at a tipping point. In response, they have produced a highly organized and very readable book that demonstrates the benefits of using defined, methodological frameworks for analyzing language online. Building on their own extensive research, the book provides theoretical perspectives, unifying frameworks, interpretive directions, and educational implications.

In essence, the book is fueled by seven key concepts for the study of digital language use (practices, textual mediation, possibilities, multimodality, stance, affinities, and globalization) as they are manifested in four digital writing spaces (Flickr, Facebook, YouTube, and Instant Messaging). This design allows the authors a way to educate their readers on the need for study of the wide range of intercultural communication—a world in which 73% of users have either a first language other than English and in which Chinese users (444.9 million) are rapidly gaining on English users (536.6 million), according to Internet World Stats. In this fluid world, Google Translate plays a major role. The sentence "Please wait behind the one-meter line" is translated as "Please wait outside rice-flour noodle" (63),

yet the world does not end. As one study participant observes, "My English is Google translator" (118). These international users are not passive victims but creative users "gradually teaching the web," as the authors perceptively put it, "their native language" (63). The result: The multilingual Flickr group Translate Me invites translations of each other's micro blogging. As we find new friends on Facebook, we use the translation app to understand the interface in different languages. Even minority languages such as Assyrian are maintained as participants in digital chat rooms code-switch to strengthen their cultural identity. Everyone seems to be writing without teachers.

For novices to this multifaceted, multilingual and fluid community, Barton and Lee prove knowledgeable guides. For researchers, their book provides excellent frameworks for investigating language online.

Imagining More

"Don't throw the past away/You might need it some rainy day/Dreams can come true again/When everything old is new again." So wrote Peter Allen and Carole Bayer Sager in *The Boy from Oz*. On one hand, the play is pure bubble gum musical, young-kid-makes-good; on the other, it is a tale of identity about coming to terms with homosexuality. Recalling that little musical seems somehow appropriate in its reliance on simple themes and intricate extensions as I conclude a review about books that capture complex phenomena.

So, here is the big question saved till the end: Is writing in digital environments simply an extension of writing in print environments? The answer rests in our understanding of multimodality. Using as a key periodization event the 2009 publication of "The Movement of Air" by Selfe, Alexander and Rhodes emphasize in *On Multimodality: New Media in Composition Studies* that conceptualizing digital composition as merely an extension of writing studies co-opts the very nature of multimodality. As they make clear, their book is focused on examining how multimodality challenges our rhetorical perceptions. Following an essential question first raised by Anne Frances Wysocki and Johndan Johnson-Eilola—"Why are we using literacy as an extension for everything else?"—Alexander and Rhodes refuse to extrapolate what we know about print technology to the study of multimodal composition. Not everything, they claim, is writing. Practically, this orientation means that the seven key concepts for the study of digital language identified by Barton and Lee are are unique—that is, mediated—in digital environments. Writing in digital environments is therefore not simply an extension of writing in print environments.

If this is indeed so, then what precisely are we doing in United States composition studies with multimedia? Alexander and Rhodes make an excellent case that we are probably under-representing the concept of multimodality in the curriculum. Because the technology accompanying multimodal composing is often seen as mere *techné*, as Delagrange cautioned, the generative power of the new media is lost. If, however, we think synergistically about both new media and composition studies, much is to be gained conceptually: a historical understanding of the media involved in multimodal composition; attendance to the rhetorical power of such compositions; and a historicized sensitivity to the development of new genres freed from the discursive and ideological considerations valorizing the essay as best possible form of all human communication. Regarding praxis, this synergy also provides an expanded view of the process of composing gained from multimodal practice; awareness of the rhetorical richness of video production and photographic manipulation on their own terms; and investigation of massively multiplayer online role-playing games as a way of understanding literacy, transliteracy, and collaborative practice. In terms of democratization, such synergy also sets the stage for robust participation in always complex and often poetic public spheres; avoidance of critique at the expense of production; and refusal to constrain categories of identify formation implicit associated with race, gender, ethnicity, sexuality. For devotees of Marxism itching to unclasp the "charm bracelet of composition's embrace of identity politics" (120), *On Multimodality* provides "an expanded view of commodity fetishism that indicts consumer capitalism for its trade in images" (111). In essence, Alexander and Rhodes provide a précis of the way we might live now.

To figure out how this vast project envisioned by Alexander and Rhodes might be brought to fulfillment, one need only to look back to the books reviewed above. While all the answers may not be there, it is clear that we are asking important questions aligned with the project of multimodality before us.

Toward a Body of Knowledge

Writing studies grew up in rebellion, lurking in the parking lot with poststructuralism, semiotics, feminism, and political criticism. Waiting around for modernism and formalism to become last year's models, writing studies was tuned to dissent. Whether our accounts of ourselves are traditional (Berlin) or counter-historical (Hawk), our field is deeply sensitive to rhetorical context and, as such, must ask precisely what a digital environment for writing signifies beyond itself. Based on thirteen books published over the

past four years that were reviewed here, four conclusions appear plausible regarding the scholarship of those who study writing in digital environments. Each is congruent with the sound advice of Randall W. Monty in his review of recent scholarship in multimodality: After reading, aim for pedagogical implementation. There is much for writing program administrators to do as they prepare for the advent of Web 3.0 and the semantic webs of meaning to come (Berners-Lee, Hendler, Lassila).

First, we may conclude that *a body of knowledge exists regarding multimodal composition*. We now have histories, theories, pedagogies, identities, representations, research methods, and even a projected future. While there does not yet exist an articulated expression of this knowledge as presented in the Body of Knowledge initiative by the Society of Technical Communication (Coppola), key features of the ontological, epistemological, and axiological positions of the present state of the field can be made. Ontologically, multimodal scholarship is rebellious in nature, refusing to see itself as a mere extension of writing studies for fear of hegemonic influence. Because transnational feminism (Hesford and Schell) and queer studies (Alexander and Wallace) were not there to interpret the impact of Gutenberg's printing press as the first big thing, theorists are not about to miss this opportunity to advocate for principles ensuring interpretative equity. In their epistemological beliefs, multimodal scholars call for theory, empirical study, and pedagogical transformation in equal parts. An emerging field, multimodal research in digital environments requires theory building, mixed methods research, and informed teaching to ensure its own future. By extension, the axiology of the system demands rejection of value dualism and value hierarchy. Such an embrace of contingency does not signal the end of progress but, rather, a progress built on an ever-present impulse to understand first, with interpretation trailing somewhat behind.

Practically speaking, the existing and emerging nature of this body of knowledge compels writing program administrators to reexamine the way that composing in multimodal environments is framed. Such framing becomes especially important in consensus statements such as the WPA Outcomes Statement (Harrington, Malencyzk, Peckham, Rhodes, and Yancey;) and the *Framework for Success in Postsecondary Writing* (O'Neill, Adler-Kassner, Fleischer, and Hall). In the WPA Outcomes Statement, for instance, the ability to compose in multimodal elements had been considered distinct from four other experiences of writing, reading, and critical analysis (rhetorical knowledge, critical thinking, writing processes, and knowledge of convention) at the time this review was going to press. The WPA Outcomes Statement was revised by a Taskforce that was appointed by the Council of Writing Program Administrators Executive Board. Along

with its historical evolution, the WPA Outcomes Statement 3.0 is included in this issue of the journal. As justification, the revision acknowledges the transformative power of technology: "Writers' composing activities have always been shaped by the technologies available to them, and digital technologies are changing writers' relationships to their texts and audiences in evolving ways" (142). Under rhetorical knowledge now appears the following curricular objective for first-year students: "Match the capacities of different environments (e.g., print and electronic) to varying rhetorical situations" (143). Such integration is a vast improvement over the way that technology was represented in previous versions—an attitude toward *techné* as a tool rather than as part of a complex rhetorical act. It remains to be seen if the habits of mind and the experiences with writing, reading, and critical analysis identified in the *Framework for Success* will be equally remodeled in recognition of the transformative power of multimodal composition. While such details are to come, it is important to note that scholarship such as that found in this review is having a direct impact on key consensus statements in our field.

Such re-examination leads to the second conclusion, w*riting is mediated in digital environments.* Whether the technology was the visible language created by movable type or digital pixel, all such mediation is a remix. Famously created by Jay David Bolter and Richard Grusin and often present in the books reviewed here, this concept allows us to understand more fully the allure of digital representation: investigation of the ways digital environments refashion thought and the language accompanying it. Depending on the extend of the mediation and the standpoint of the writer and reader, this mediation may be akin to that witnessed in print environments since 1450—or it may not. Depending on the extent of the remediation, the ability to compose in multiple environments may be one in a list of writing, reading, and critical analysis experiences—or it may be its own framework that demands that rhetorical knowledge itself be reconceptualized. It appears as if the ideas proposed by the authors of these books are as complex as the humans who will benefit by them.

Third, we may conclude that *extensive professional development will be needed if digital writing is to be included in the curriculum in ways that are non-cosmetic.* To understand just why, consider how this review would be changed if the title had been "Multimodal Communication in Digital Environments." From the beginning, terms would need to be defined, and even the subject under review—written communication—would have become slippery. So, too, curricular reconceptualization will be needed if the theories and practices contained in these thirteen books are to be offered to students in meaningful ways. The solution will no longer be

an invitation to multimedia staff to teach instructors sound editing, for example. Accompanying such training in production must be discussions of multimodal theory and methods of inquiry for those working in the new genres. Because long-term strategic planning will be needed, technological fixes will no longer be sufficient. These are heavy lifts that are not easily addressed, and new strategies will have to be identified to align the demands for innovation with the realities of economic constraint. At least part of the answer rests in the students themselves as we reconceptualize hierarchy and enlist a variety of agents as our new collaborators.

Fourth, we may conclude that *incongruity must be an important part of planning*. Kenneth Burke, whose appearance is frequent in these books, told the story of reporter Lincoln Steffens emerging from the New York Public Library to find himself accompanied by a man who found a plan for saving the world. The more the man spoke, the better the scheme sounded. Then, somewhere on Fifth Avenue, they were joined by Satan. He liked the plan a good deal. "Wouldn't it put you out of a job?" Steffens asked. "Not in the least," the Devil replied. "I'll organize it." Burke concluded with a lengthy warning against bureaucratization of the imagination. Among the remedies he listed were planned incongruity which would allow a "*dramatic* vocabulary" resplendent with "weighting and counter-weighting" yielding, in turn, "a multiplicity of perspectives" (311). Because Burke's perspective gets us pretty close to the heart of the matter regarding the perils and promise of multimodal communication, it is good to return to Shannon who, after all, provided the equations that caused all of this.

Price, Shannon's interviewer in 1984, had gotten ahead of himself and began to raise questions about a driving force of inquiry that led to information theory. Shannon replied:

> Bob, I think you impute a little more practical purpose to my thinking than actually exists. My mind wanders around, and I conceive of different things day and night. Like a science-fiction writer, I'm thinking, What if it were like this? Or, Is there an interesting problem of this type? And I'm not caring whether someone is working on it or not. It's usually just that I like to solve a problem, and I work on these all the time. (126)

The moral: Innovation is unruly.

One cannot help but wonder if Shannon was a fan of duct tape.

Professor White has made my work better. From 2009 to 2014, he has been book review editor for this journal. An individual talent, his is an impossible act to follow.

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