



Collectives, Common Worlds, and the Idea of Sustainability: An Introduction

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As anyone who has been involved with computer-supported instruction knows, after the momentous effort to initiate and develop digital classes and programs, there comes the even more momentous effort to sustain such efforts—to ensure that at the same time these projects meet their goals, they also don't suck the intellectual and pedagogical spirit out of those involved.

When we put out the call for this collection we were overwhelmed by the response. Clearly we had struck a nerve in the field: scholars, teachers, and administrators were eager for the opportunity to discuss and reflect on the local, national, and/or international projects in which they had been or were currently involved. In discussing their work, authors in this collection propose a variety of perspectives for analyzing and approaching sustainability. An overarching framework is, of course, evident in the title of this collection, *Technological Ecologies and Sustainability*. The term *technological* is meant to signal our focus on computers and computer networks, although the authors in this volume cover a wide range of digital environments: from personal computers in local classroom contexts to more extended networked environments that affect, and are affected by, institutional and global concerns. The terms *ecologies* and *sustainability* are meant to suggest the important task of maintaining the richly textured technological environments in which composition teachers and students learn, study, and communicate. These environments—which include both human and technological actors—are akin, as many scholars have suggested, to ecological systems (Davison, 2001; Latour, 2004; Nardi & O'Day, 2000; Selfe & Hawisher, 2004) and deserve to be studied in all their layered, interconnected complexity.

In the chapters that follow, contributing authors approach technological ecologies and sustainability from a variety of angles. A few key examples suggests the range of these projects and approaches; Patricia Ericsson, for instance, draws on a number of environmental theorists to view *sustainable development* as analagous to a stool with three equally important legs: the environment, the economy, and society. Kip Strasma applies a “green” industry process—Leadership in Energy and Environmental Design (LEED)—to analyze and assess complex first-year digital literacy programs. And in her usual creative and compelling way, Kathleen Yancey ties the sustained practices of embroidery sampling to our understanding of electronic portfolios. As editors, this variety delights us and reinforces our initial decision to keep an open mind about the terms in our title and the multiple ways of understanding them. But, interestingly, as we review the full range of projects and approaches taken by contributors to this collection, it also makes us, as editors of this collection, feel a bit uneasy. Now that contributors have done the hard theoretical and pragmatic work of defining the key terms *technological*, *ecologies*, and *sustainability* for themselves, we feel the need to do the same.

Perhaps one of our central motivations in this effort is recognizing that the language we use is not necessarily our own. As many readers are aware, there is a strong community of English studies scholars working at the intersections of science, environmental issues, and rhetoric. That community—from whom we borrow terms like *sustainability* and *ecologies*—are rightly



concerned about how those terms are employed. Quite likely, they are tired of corporate entities and governmental groups reducing bio-environmental arguments to “sustainable development” with the intent of justifying their “business as usual” practices, practices based largely on economic concerns rather than environmental goals (see Davison, 2001; Harvey, 1998). The fact that we have combined the term *technological* with the valued concepts of *sustainability* and *ecologies* might lead one to assume that we are also appropriating the terms, not in corporate contexts, but in the context of composition studies. Certainly, we hope this is not the case. Although we don’t apologize for taking fiscal concerns into account when we talk about sustaining the technological ecologies associated with composition programs and classrooms, we also want to devote most of this introduction to a focus on both *why* educators in writing studies might want to sustain such technological efforts and projects and, importantly, *how* to create computer-supported teaching and learning environments that are directly and visibly informed by humanistic values and, thus, are *worth sustaining*.

To accomplish this important work, we use the germinal work of Bruno Latour (2004; 2005) and Aiden Davison (2001) to focus more deeply and fully on the three key terms of this collection’s title: *technological*, *ecologies*, and *sustainability*. Although the chapter authors have identified their own theoretical and methodological approaches to digital teaching and learning environments, as editors, we find Latour’s and Davison’s work compelling because they help us explain both how and why writing teachers and scholars might take on such difficult work.

CONSIDERING THE TECHNOLOGICAL: BRUNO LATOUR, THE “SOCIAL,” AND REASSEMBLAGE

In our effort to unpack the key elements of this collection’s title, we turn first to the term *technological*. Our starting place, however, may seem an unlikely one to some readers because we locate our effort in Bruno Latour’s understanding of the term *social*. Latour, however, distinguishes more conventional conceptions of *Social* (capital “S”) with his own understanding of *social* (lower case “s”) by noting that social systems consist of dynamic connections and relationships between both humans (actors) and non-humans (actants). As Latour (2005) noted, “social does not designate a thing among other things, like a black sheep among other white sheep, but a type of connection between things that are not themselves social.” (p. 5).

Just as Michel Foucault (1995) showed us in *Discipline and Punish: The Birth of the Prison* that power is not a thing to possess but a set of constantly shifting power *relations*, Latour (2005), in *Reassembling the Social*, asks us to understand what has been called the “Social” (upper case “S”) not as a “thing among other things,” but as moments of social (lower case “s”) connection in the process of constant re-creation or “reassembly.”

Within this context, our editorial goal for this collection is to examine a series of social moments in the process of reassembly—moments of technology use, system design, teaching, learning, and digital scholarship. These are social moments that we consider valuable and important in literacy instruction and scholarship. We also, however, hope that readers will reassemble for themselves technological ecologies like those that the authors of this collection have found compelling.

Navigating dynamic moments of technological reassembly, however, is not a simple matter, especially for those actors operating in the context of fundamental changes in scholarship and learning. As Latour (2005) suggested, these are “situations where innovations proliferate, where group boundaries are uncertain, when the range of entities to be taken into account fluctuates” and where conventional methodologies are “no longer able to trace actors’ new



associations” (p. 11). In such situations, Latour argued for actor-network theory (ANT), a framework of understanding based on the “sociology of associations” (p. 9) among human and non-human actors. As Latour noted, “when you wish to discover the new unexpected actors that have more recently popped up and which are not yet *bona fide* members of ‘society,’ you have to travel somewhere else and with very different kinds of gear” (p. 22). In the spirit of Latour, we believe the chapters that follow, the analyses the authors provide, and the different tools that can be culled from the rich diversity of their work are the collective gear readers can use to implement productive social ecologies of humans and machines at their own institutions and within their own localized contexts. This gear is portable, and the work of these authors provide navigational aids for the controversies in which teachers are immersed, and the projects they are spearheading and championing at their institutions. We hope that this gear helps techno-activists, techno-ecologists, and techno-rhetoricians to, as Latour put it, “trace connections *between* the controversies themselves rather than trying [immediately] to decide how to settle any given controversy” (p. 23). We believe each chapter of this collection, then, involves controversies with which we must engage rather than rushing to conclude or stabilize. Authors attempt to be descriptive enough to shine a new light on matters of both local and global concern, without the additional burden and fiction of trying to define “matters of fact” (p. 261) and come to final conclusions.

In this regard, as authors in the following pages describe specific technological ecologies in considerable detail, the volume as a whole, we believe, attests to the five key sources of uncertainty that Latour (2005) noted as characteristic of all ANT projects:

1. **No groups, only group formation:** There are no stable groups to study within social networks; rather, there are groups forming and reassembling on a constant basis. Authors in this collection identify shifting associations of people and digital technologies that are “provisional product[s] of a constant uproar” and groups of actors defining “who they are, what they should be, what they have been” (p. 31). Thus, the *TES* authors—by describing specific networks of human and technological actors in complex technological ecologies—can help readers locate similar relationships at their own institutions so that they, too, can imagine new trajectories of work within their own dynamic educational environments.
2. **Action is overtaken:** As Latour reminded us, “action should. . . be felt as a node, a knot, and a conglomerate of many surprising sets of agencies that have to be slowly disentangled” (p. 44). Instructors who teach in digital environments, for example, might be called on to act or engage by students, upper-level administrators, instructional technology staff, outside vendors, etc. One of the challenges of working within robust technological ecologies, then, is trying to follow the proliferation of actors involved in our projects. Who is connected to whom and how are they connected?
3. **Objects have agency:** Teachers and scholars miss a great deal of the real action in a technological ecology if they only attend to intentional, meaningful action performed exclusively by humans. Latour has made the case, in many of his works, for including non-human actants in the social collectives we study. The agency of the non-human actants requires the situated attention of teachers and scholars if our profession is to sustain and nourish healthy technological ecologies. In this collection, readers will note, contributors discuss a number of non-human agents, among them machines, software programs, classrooms, electronic portfolios, input devices, screens, physical and wireless networks; protocols for teaching and learning; institutional procedures (including paths to tenure and promotion, graduate program requirements, etc.), budgets, and lab spaces.



4. **Matters of concern:** To trace, investigate, and act within networks of human and non-human actors a focus on matters of fact. Such situations are too fluid and variable, to unstable, to allow facts to speak for themselves. Instead, Latour argued that inquiries should focus on “matters of concern” (p. 115). In this context, each of the following chapters helps to spotlight matters of concern orbiting within and around each project. For example, Kristie S. Fleckenstein, Fred Johnson, and Jackie Grutsch McKinney don’t try to establish matters of fact (i.e., how ecologies of portable computers influence all classes); rather, they focus on transforming a conventional set of classrooms at a particular institution at one moment in time. Jeanne R. Smith and Jay D. Sloan aren’t interested in determining how technology works in all writing centers, but how one might first focus on the current, local matter of concern in a writing center before exploring a particular use of technology.
5. **Writing down divergent and risky accounts:** In shifting social terrains, Latour maintained, there is no single genre or model that successfully and completely accounts for all that is happening. Instead, scholars must focus on being “as reflexive, articulated, and idiosyncratic” (p. 121) in their descriptive accounts of social networks as possible. Doing so requires the ability to work—often swiftly—in different modes of analysis, with shifting genres, and with new forms and means of distribution. The wide-variety of modes of analysis and genres of reporting that readers encounter in the following chapters describe technological ecologies cumulatively, from a number of different perspectives, and using a range of methodologies and theoretical lenses.

As editors of this collection, we believe that the uncertainties Latour (2005) described in connection with the study of social networks are factors of the dynamic reassembly going on around and within all sustainable technological ecologies. In the chapters that follow, the authors in *Technological Ecologies and Sustainability* describe multiple actors and actants, knots of activities and agencies, and a wide range of matters of concern (e.g., video pedagogy, digital storytelling, digital programs, research centers). The authors are not in the business of defining what Latour would call “matters of fact” in hopes that they will remain stable but, instead, they identify for readers a number of “matters of concern,” offering “risky accounts” of actors and actants and the necessary uncertainties that undergird these complex relationships.

THE THIRD SOURCE OF UNCERTAINTY

Because it is such an odd request of humanist scholars and teachers, it is worth exploring briefly what Latour meant by including non-humans in our discussions. Although it varies in intensity from chapter to chapter, you’ll notice in this collection the inclusion of many non-human actors (or actants) in the citizenry of each collective: You’ll find objects galore, including input devices, screens, software programs, physical and wireless networks; protocols that allow for action and learning; procedures around which we manage our learning lives (including tenure paths, adjunct status, graduate program requirements, curricular arrangements, etc.); and concerns for fiscal accommodations (including salaries, replacement costs for hardware/software/netware, and the expenses of events and professional development efforts). This is but a truncated list; many other human and non-human agents will come to mind as you read.

Including these non-humans in our discussions, however, create what Latour (2004) called a sense of “definitive doubt” (p. 64). To give non-humans voice in the debates of the collective, Latour, in his own theory-laden and humorous way, runs through examples that involve



“speech prostheses” (p. 67), translators, “the distribution of forms of speech” (p. 68), and spokespersons” (p. 64). He situated himself as engaged “in the long and venerable tradition that has constantly *extended* (author’s emphasis) what was called humanity, freedom, and the right of citizenship” (p. 71) to non-humans. We also have to accept the uncertainty (“definitive doubt”) about who is speaking for whom. Questions like these come to mind: What human voice is speaking for the digital systems that techno-rhetoricians use daily? How reliable are those speakers? How thorough? We will always have to interrogate the translators of non-humans about their motives and speech acts, but the end result, though quite clumsy and complex, will result in descriptions that are much more representative and potentially sustainable than those where actants have been barred from the debates altogether.

INTERACTING AROUND RISKY ACCOUNTS OF TECHNOLOGICAL ECOLOGIES

Uncertainties abound; as editors, however, we have chosen to add yet another mode of uncertainty by increasing the tempo of the interaction between the writers and readers of this collection. We did this by choosing to publish the collection in a new digital space: the Computers and Composition Digital Press (CCDP). The CCDP is an open-access press built to accommodate digital book-length works and multimodal projects. By publishing this volume as open access and online, our hope is that the social networking functions of current Web 2.0 technologies will allow the collection to take on a discursive life of its own. We expect and hope that the creation of this networked document will add yet another level of uncertainty to the ANT process. We are providing a space for the rapid distribution of the intellectual capital of this collection and for an intense interaction between writers and readers around matters of concern in each chapter. As a result, *Technological Ecologies and Sustainability* is perhaps a riskier account than many others because we hope to learn directly and immediately from those readers interested in sustainable technological ecologies; we hope to connect that extended wisdom to the project itself.

We realize, of course, that we are adding nothing new to the act of publishing. Print publishing also allows for this type of give and take over time. Instead, we are experimenting with the increased tempo of distribution and interaction made possible by an electronic environment. Together with reader/respondents, *TES* constitutes an exploration into creating useful knowledge communities.

We anticipate that our readers might be wondering something like the following: If we allow for all these levels of uncertainty, what hope can we have of learning from and using the descriptions of collectives described in this volume? We try to answer that question by attending to Latour’s (2004) *The Politics of Nature*. In that volume he places our hope for addressing serious environmental issues in a process described as the “progressive composition of the best common world” (p. 164). A brief description of that process is not only apropos of the *TES* project, but also provides a slightly more nuanced look at the notion of sustainability.

THE PROGRESSIVE COMPOSITION OF A TECHNO-SCHOLARLY AND PEDAGOGICAL WORLD

Part of the progressive composition process that we outline below assumes a dialogue within the constraints of a timeline. That is, if we (as editors and chapter authors) are remarkably successful in capturing the interest of the academic community, the useful application of the practices described in each chapter will remain part of a “living” document for an extended, but finite, time. They will all retain long-term value historically and theoretically, but, as Latour (2004) suggested, after several years (or perhaps before!) a new collective with human and



non-human agents will appear, and new discussions and debates will have to be joined, including discussions of what shall be carried forward and what shall lapse. In Latour's view, the process is cyclical and interactive¹:

Step One. **Gathering the Collective:** Authors have done their part by calling together and representing the citizens of their collective (human and non-human) in each of the following chapters. We invite our authors and readers to meet online, face-to-face at conferences, or in-print to discuss who is included and excluded in each chapter and how well those citizens are described and represented.

Step Two: **Conducting Civil Discussion:** According to Latour, we must allow all the gathered entities to state propositions. Yes, even non-humans, working through translators, will state their propositions relative to the matter of concern. At this stage, the collective attempts to take nothing for granted as author(s) lay out the central issues of the chapter. They present the propositions of agents important to their chapter and then present a risky account online via the CCDP.

Step Three: **Rank Order the Propositions:** Temporarily but firmly we, as a community, must then rank order the propositions most important to the issues at hand. These will stand at the end of this temporary convocation as the present *state of affairs* (our term, not Latour's). These are not "matters of fact" but temporary matters of concern about which we can agree and act upon. Eventually, the state of affairs will **not** hold, and we will need to move onto the next step.

Step Four: **Start all over again:** Inevitably dangerous human and non-human entities will demand to be heard. These new entities and propositions will threaten the current state of affairs and will ensure that at some level our risky accounts will fail. That is to be expected; it is the way forward. When the risky accounts constructed in this volume are endangered, we will start the process of recruiting representative agents and actants all over again. Perhaps this will take the form of a rebuttal volume or a subsequent edition of *TES*, or some creative digital, online forum for collective debate that we haven't even imagined.

Many readers will notice that some of this process is, to some extent, standard procedure in academic discourse. We would suggest that three features—the notion of civil discussions that invite non-human entities to speak and initiate propositions, the speed of online interaction, and a different level of active readership—are likely to change the nature of the interaction around the collection and the individual chapters. Those same readers might also realize that Latour's last two steps have no current place in academic institutions. Who will establish a current state of affairs and then how will it be decided when another collective should be proposed? For that matter, Latour saw no current institutional structures for these steps concerning the environmental matters that he addressed. His response to this dilemma is: "The world is young, the sciences are recent, history has barely begun, and as for ecology, it is barely in its infancy: Why should we have finished exploring the institutions of public life?" (p. 228). Why indeed? Why shouldn't scholars and teachers of English studies once again envision a new institutional space for prioritizing propositions of compelling sustainable technological ecologies and establishing a temporary state of affairs? Why can we not imagine

¹ Latour's (2005) description of a bicameral congress of political ecology is more complex than the system we summarize. He spends chapters on the institutional structure, the conceptual sink holes to avoid, and the many productive roles that people must assume. These are covered in great detail in chapters 3, 4, and 5 of the *Politics of Nature*. We have simplified this process enormously in our reflection here.



an institutional process that will eventually call that state of affairs into question, so that the process can begin again? We and our colleagues have brought to life unique and innovative institutional spaces before as we created (and continue to recreate) writing and learning centers or technology-rich labs and classrooms, as we create new techno-pedagogies out of each online space that leaps into existence (blogs, wikis, YouTube, Facebook, MySpace, etc.), and as we create new digital spaces for publishing online scholarly work. We are perfectly capable of creating institutional space for establishing temporary *states of affairs* on which we can base decisions in the service of sustainable technological ecologies. We are flexible and nimble enough to imagine policies and procedures that will, then, call a temporary *state of affairs* into question and begin Latour's process all over again (collective gathering → civil discussion → ranking of propositions → establishing yet another temporary state of affairs).

But for the purposes of this publication, *TES* editors and authors will begin by placing our propositions about important matters of concern in a forum that will encourage civil online discourse via the Computers and Composition Digital Press. That will be enough for now. Who, in the end, will rank order the propositions collected there and establish a temporary *state of affairs*? Who then will call for the next set of propositions that will challenge the *state of affairs* that accompanies the *TES* effort? That will be the job of our intellectual community as we attempt to accomplish what Latour called the progressive composition of a common world, a world, we hope, worth sustaining.

SUSTAINING WHAT AND FOR WHOM?

We hope, at this point, to have made some progress in laying out a case for understanding technology-rich ecologies for literacy education and scholarship as complex and dynamic networks of technological actants and human actors. We have not, however, clearly articulated our use of the term *sustainability*, a contested concept in the minds of many scholars. Certainly, colleagues who study the rhetoric of science and environmental debates, about global warming, biodiversity, and deforestation will be interested in our use of that adopted term. Although the concept of sustainability isn't unprecedented in the Computers and Writing community or in English studies in general (see Cushman, 2006; DeVoss et.al., 2005; Grabill, 2006; Selfe, 2005), it remains a relatively rare term, nonetheless.

As editors of this collection, we would like to believe that we are part of what environmental theorists like Andres Edwards (2005) called the "sustainability revolution, one that has "transformed the fields of communication (computers, the Internet, e-mail, wireless phones, digital cameras), finance..., transportation..., building..., and medicine" (p. 6). From our point of view, the *TES* project embodies at least four of the five characteristics of this cultural movement:

- The authors within this volume comprise one group among the diverse collectives interested in sustainable practices.
- The chapters within this collection help identify a wealth of issues that need to be addressed under the rubric of sustainability.
- The scholars in this volume are "decentralized visionaries" who explore sustainability from their own situated perspectives.
- The chapter authors suggest "varying modes of action" to support the sustainability of digital communication environments; often these are understood as "oppositional and alternative" (Edwards, p. 7) approaches in the context of conventional institutional responses.



Although gratified and encouraged by our good fit with Edwards' sustainability revolution, we feel obliged to compare our understanding of sustainability with another, more critical and challenging perspective, through the work of Aidan Davison in (2001) *Technology and The Contested Meanings of Sustainability*. Davison asks the "unfamiliar yet still morally resonant question of what sustains us?" In so doing, he notes that the concept of sustainability "offers to move our understanding fluidly back and forth between moral and technical questions and between our moral experience and our technological practices. " Such an understanding, Davison continues, allow us to "hold product and producer together in our thinking, opening up a space within which our understanding of technology can move into the aspirations that animate our moral lives" (ix).

Like Davison (2001), we consider it noteworthy that most discussions of technological sustainability beg the related questions about what we are sustaining and for whom. As he argued, those interested in "latemodern technosystems" (p. 1) need to connect their claims for sustainability explicitly to the values they hold most dear. In presenting this collection, then, we recognize that "technical sustainability is not an end in itself" (Davison, p. 44), but also a means of accomplishing our humanistic and educational goals. This approach has serious challenges in contemporary academic environments, chief among them avoiding the "stifling language of efficiency" (p. 5), addressing issues of scale, and minding economic necessities in which administrators often locate discussions of sustainability. Teachers, more than ever, need to both *articulate and act on their own humanistic goals for sustaining digital efforts and environments* if they hope to re-code these more limited understandings.

For some readers of this collection, Davison's (2001) work could suggest a human-centric approach to sustainability that contradicts a Latourian view of actants and actors as co-equal forces in shaping technological environments for teaching and learning. Davison's approach is tempered and complicated by his recognition of the cyborg nature of human existence. As he noted, "technologies are constitutive of, not external to, our humanity, and they express, shape and perpetuate our philosophical commitments. Through them we build worlds of practice" (p. 7). Our job in this collection, as we understand it, is to help teachers and scholars define the ends they want to address and the values they hope will characterize their research, classrooms, and programs. These are the reasons for trying to sustain technological environments in the first place. The question that Davison's and Latour's work encourages us to ask in this collection and to encourage our readers to ask, we believe, is the following: If we can gather together productive collectives of human agents and non-human actants, and if we can enlist these collectives in support of projects shaped by humanistic values, can we create digital composing environments *worth sustaining*?

The contributors to this collection do not often address this overarching question directly (e.g., is the practice, program, scholarly initiative, etc., they analyze and advocate for worth sustaining). In the process of engaging such questions as what are technological ecologies, how might they and how should they be developed, sustained, and assessed, and why sustainability is such an important goal to pursue in connection to particular projects, however, the chapter authors make many implicit arguments for the worth of their diverse technological projects.

AN OVERVIEW OF THIS COLLECTION

We have divided *Technological Ecologies and Sustainability* into four sections, which move outward from individuals and classrooms to programs and institutions and then even further to global concerns. When we first put out the call for *TES*, Computers and Composition Digital Press had not yet been launched, so we had initially envisioned this collection as a print-based work. However, when the opportunity arose to publish online in an open-access, peer-



reviewed press, we jumped at the chance. In the process of preparing the manuscript for publication, we asked contributors if, as they revised chapters, they would also like to take advantage of the multimodal possibilities of online publication, and many have done so, adding audio and/or video components to their chapters.

Part I: Sustaining Instructors, Students, and Classroom Practices

We lead with these chapters because learning, curricula, and pedagogy have always driven our disciplinary use of technological ecologies. Although the scholarly exploration and use of digital media is becoming more important in our disciplines, our commitment to teaching and learning and our need to understand the rhetoric and processes of 21st century literacy practices tend to drive our choices of technosystems.

Ryan Moeller, Cheryl Ball, and Kelli Cargile Cook describe, in “Political Economy and Sustaining the Unstable: New Faculty and Research in English Studies,” their struggle to support digital media faculty both in their scholarly work and in the technology-rich teaching that they seek to do. Departments in English studies are becoming well aware of the importance of recruiting new, digitally active faculty in all areas. To incorporate a nuanced understanding of the literacy practices in a media-rich culture into our programs and curricula, it is essential to work with these new scholars and teachers. But a department’s understanding of *what* material and institutional conditions need to exist to allow these individuals to thrive is likely, according to this chapter, to be wanting. Almost every department is interested in recruiting young digital scholars and teachers, but are often unaware of the technological expense of digital work, the differing needs for tenure and promotion, and the conditions under which technoscholars can best teach and work. The authors employ Phil Graham’s (2005) useful political economy analysis (PEA) to analyze the “complex ecology of an English department.” They track various meanings of concepts like *technology* and *research* through their relative usages within their specific ecological settings, and they argue that—to sustain digital media faculty—individuals, departments, and institutions need to work in concert.

In “A Portable Ecology: Supporting New Media Writing and Laptop-ready Pedagogy,” Kristie S. Fleckenstein, Fred Johnson, and Jackie Grutsch McKinney also argue for holistic approaches to developing technological ecologies. In the process of transforming a set of conventional classrooms into laptop-ready learning spaces—a seemingly mundane redesign project, but one with ripple effects that influence every teacher and student who uses those facilities—they provide us with a process for sustainability. Although they find the laptop pedagogy that developed something worth sustaining, it was not something they came to immediately or easily. As the authors note, “we acquired the ‘portable ecology’ of our laptop-ready classrooms, and thus made possible our new media pedagogical emphasis, while fumbling our way into this new way of thinking.” Their story illustrates the *when* of new media pedagogy (i.e., institutional timing), the interdependencies of institutional units and media workers, and the value of ecological or holistic thinking about design efforts. The chapter is packed, in fact, with both practical and theoretical advice derived from their design and teaching experiences which are, in turn, informed by Gregory Bateson’s (1972/1987, 1979, 1991) idea of contextual evolution.

“Stifling Innovation: The Impact of Resource-poor Techno-ecologies on Student Technology Use,” by Anthony T. Atkins and Colleen Reilly, reflects the authors’ investments in student and faculty access to systems that facilitate literacy learning and digital writing instruction. What Atkins and Reilly hope to accomplish with this type of access, and what they hope to sustain, is pedagogical *innovation*. In particular, the authors illustrate the struggles of innovative teachers trying to develop sustainable new media composition initiatives in an underresourced program and institution. Atkins and Reilly provide us with an analysis based on three



perspectives: 1) a detailed description of the techno-ecologies in which teachers work (including many influential non-human actants); 2) student perspectives (garnered via a survey study) about instructional technologies used in their classes and outside of class to prepare assignments; and 3) their own, insider/instructor perspectives regarding their resource-poor techno-ecologies. The three perspectives make it clear how pedagogical innovations can challenge the technological and human infrastructure of institutions and departments, and how the sustainability of digital initiatives cannot rest solely on individuals working alone.

In “Video for the Rest of Us? Toward Sustainable Processes for Incorporating Video into Multimedia Composition,” Peter J. Fadde and Patricia Sullivan take on a particular and a particularly challenging media. They make a strong case for sustaining the proliferation of video production in our culture and classrooms, while at the same time detailing the fundamental difficulty of sustaining both the system requirements of video and the extensive production process that most videographers engage in. By pairing down the processes and technological ecologies to essential components, they provide us with “sustainable processes for incorporating the powerful, but still difficult to manage, medium of video into multimedia composition.” Their chapter and the approaches for which they argue are a must-read for anyone interested in developing video as a component of composition programs (whether in general education or major-specific courses).

Kathleen Blake Yancey, in “Portfolios, Circulation, Ecology, and the Development of Literacy,” would like us to sustain digital portfolio ecologies for assessment, reflection, and learning. She describes several versions of highly layered e-portfolio ecologies and how they are encouraged and sustained in four different institutional contexts. Yancey is also interested in cultivating and sustaining a type of self-sponsored student writerly identity. She closes her chapter by drawing an analogy between e-portfolios and embroidery sampling, arguing that samplers provide flexible platforms for literacy—that they are self-sponsored, personalizable and reiterative, and that they are compositions playing important identity-making roles.

Part II: Sustaining Writing Programs

In Part II, we focus more attention on the institutional entities—in particular the programs and program administrators—who provide the material, technological, and human resources to support and sustain digital writing work.

We begin with Michael Day’s “The Administrator as Technorhetorician: Sustainable Technological Ecologies in Academic Programs.” Day takes this opportunity to imagine the complexities of sustaining digitally integrated first-year composition programs and the role that a writing program administrator has in that process. Through detailed, nuanced examples, Day names and voices the concerns of a collective of agents and actants, including the technological infrastructure (such as machines, software, networks, and lab spaces); the faculty development support system, both university-wide and program-specific efforts”; and much more. Day concludes with a three-pronged approach to sustaining such complex techno-ecologies, which includes: “listening to global conversations about technorhetoric, processing and adapting technorhetorical theories to local circumstances, and then acting with the best interests of key stakeholders in mind.”

Patricia Frietag Ericsson proposes a framework for analysis and action to others taking on the difficult task of making connections between academic silos in the development of technology-intensive interdisciplinary majors. In “Sustainability and Digital Technology: Program Analysis Via a ‘Three-legged’ Framework,” Ericsson advises us—after a much more thorough history and definition of sustainable development than we have provided in this introduction—to



attend to three components of any enterprise worth sustaining: “the economic, the social, and the ecological.” She draws her three-part framework from leading environmental agencies around the globe who have recognized that sustainability must be assessed and worked toward in these three primary areas concurrently. Applying this framework, Ericsson conducts a fascinating exploration of the Digital Technology and Culture (DTC) degree program that she and colleagues have developed at Washington State University in Pullman. Although Ericsson discusses economic sustainability as critical to all techno-ecologies, we are particularly taken with her focus on sustaining both a “socially just university” and a “knowledge ecology.” The framework she provides and the specific lessons to be drawn from her analysis of the DTC will be beneficial to anyone seeking to develop, assess, and revise digital writing programs.

In “The Homegrown Hybrid Academy: Toward Sustaining a University-wide Culture of Use,” Beth L. Brunk-Chavez and Shawn J. Miller respond to some practical constraints at their institution (the University of Texas at El Paso) and their very diverse “always on” student population by spearheading a new university program. In the process, Brunk-Chavez and Miller imagine new institutional structures and the support components that might help encourage its adoption across departments. They develop a program that avoids a deficit model of faculty teaching, with an emphasis of blame toward faculty not adopting technology. Instead, the program supports an “empowered user” (teacher) of technology who knows better than most how to teach in their own specialized area of the university. Empowered faculty do not meet the “net generation” on students’ terms alone, but work to “embrace a common set of goals and a desire to reach them.” The culture of use Brunk-Chavez and Miller are trying to develop has a key component worth sustaining: users (teachers and students), as they both using and influencing the design of the technologies they adopt to reach their common literacy goals. Both groups (and the administrators developing programs for them) must identify and appreciate the “fit” that a particular approach or technology has and participate in multiple feedback loops in institutional development processes. The authors grapple with this model as they address issues that many of our readers will recognize: space constraints, increased enrollments, and top-down technology initiatives.

Kip Strasma draws extensively from the environmental movement for approaches to studying sustainability. He does this, interestingly enough, through an environmental assessment tool for green building. In “Using the LEED Evaluation Tool to Assess the Sustainability of First-Year Computers and Writing Programs,” Strasma applies the Leadership in Energy and Environmental Design (LEED) assessment tool to the complex first-year literacy programs in two-year colleges, programs much like those that many of us are trying to support and sustain. The values that Strasma’s LEED tool encourage are powerful, useful, and include stewardship of the best of multiple teaching approaches, a balanced support for resources, and the need for continuous pedagogical learning and workshopping, among other assessment attributes. His application of this approach to 2-year colleges is particularly important as teaching loads, changes in techno-pedagogical initiatives, and mobile student populations intensify the process of sustaining a technology-intensive composition program.

Jude Edminster, Andrew Mara, and Kristine Blair take on a particularly intractable and important issue in higher education in “Digital Studio as Method: Collaboratively Migrating Theses and Dissertations into the Technological Ecology of English Studies.” There is enormous pressure by digitally native students and those faculty comfortable with new technologies to take advantage of the modalities afforded by digital theses and dissertations. In addition, we are all interested in how these traditionally remote genres can be more broadly distributed as digital works, because they represent some of the most cutting-edge knowledge creation in our disciplines. But the complexities of institutional change that might result from electronic theses and dissertations (ETDs) is not to be underestimated. Edminster, Mara, and Blair discuss the experimental nature of their work in a cyberstudio as they work toward a techno-ecology sustainable for faculty, students, and institutions in the highly charged



atmosphere of thesis and dissertation production. They illustrate clearly Latour's (2005) notion of "risky accounts" as they discuss both the successes and failures of their project to date. In addition, they begin moving us out of the direct consideration of programs per se and toward discussions of ancillary centers and studios housed on the borders of direct programmatic design and development.

Part III: Sustaining Writing Centers, Research Centers, and Community Programs

The diversity and strength of writing studies spans a broad array of institutional and community frameworks, and many centers and programs reside outside of traditional department or university structures. The next section of our collection addresses some of these centers and programs as technological ecologies and speculates about their importance and sustainability.

James E. Porter has spent several years collaborating on the development of the Writing in Digital Environments (WIDE) Research Center at Michigan State University. In "Sustaining a Research Center: Building the Research and Outreach Profile for a Writing Program," Porter addresses how he, colleagues, and other teams might sustain such a rare entity in humanistic disciplines, particularly where the research of the center focuses on projects that have two very contested characteristics within the Humanities: projects are both interdisciplinary (often working with partners outside English studies and the Humanities) and digital in nature. The digital components of our culture and our digital teaching practices will "change the processes, products, and contexts for writing, particularly in organizational and collaborative composing contexts" (WIDE Collective, 2006). The WIDE Center is an exemplar program that sustains itself and contributes, in productive ways, to the writing programs and writing culture at MSU. Readers, we think, will be particularly interested in how such centers can make writing research more broadly available to our colleagues across the institution and how that, in turn, might involve us in interdisciplinary research projects. The economic realities of our institutions these days make both moves important.

Jeanne R. Smith and Jay D. Sloan argue for the importance of sustaining communities in "Sustaining Community and Technological Ecologies: What Writing Centers Can Teach Us." They take one of the fundamental components of writing center pedagogy—interpersonal communities of reader and writers—and make it a corner stone for technoecology development, no matter where in the university those ecologies make their home. In particular, Smith and Sloan address the frequent tension between those interpersonal, hard-earned, face-to-face learning relationships commonly found in writing centers (and, sadly, often not found in many other parts of college life) and the growing potential for digital interactions between writing center professionals and students. Readers will find useful an approach to integrating technological ecologies into our institutions in ways that do not disrupt our commitments to social networks. Smith and Sloan forefront "writing as process... knowledge as a collaborative construction, and [an] insistence upon the value of face-to-face interaction." Smith and Sloan describe several attempts at technological integration that both fail and succeed in interesting ways.

Mike Palmquist, Kate Kiefer, and Jill Salahub offer us another theory of analysis and sustainability in their chapter "Sustaining (and Growing) a Pedagogical Writing Environment: An Activity Theory Analysis." They are deeply involved in the ongoing process of developing and sustaining the incredibly rich online site, the Writing@CSU project, which provides extensive open access to content, teaching and learning resources, and interactive communication forums. They provide an overview of another theoretical system of analysis, Activity Theory, that helps them plan and understand the construction and sustenance of those important systems. Online and hybrid education is part of the learning environment of



the future, and English studies professionals should bring to bear their humanistic expertise to the design and implementation of those online systems and curricula. Palmquist, Kiefer, and Salahub's analysis and activity theory components are important and useful in this endeavor. Those components involve "a complex interaction of subject, tool, object, outcome, rules, community, contradictions, and division of labor." The complexity of the analysis and the project under analysis itself "reduces the tunnel-vision effect of [often technical] snapshots of the project, ... allows us to focus on interactions rather than on discrete elements, and... uses the history of the project generatively to plan further enhancements." We find their sense of sustainability compelling, as it "implies both continuity and enhancement, building and adapting."

Providing another provocative methodology for addressing sustainability is Lisa Dush's "Genre-informed Implementation Analysis: An Approach for Assessing the Sustainability of New Textual Practices." Drawing from her extensive on-site field study as well as in-depth interviews with key informants, Dush examines one community organization's attempt to implement a new textual practice: digital storytelling. She details a number of ways the multi-year effort to implement digital storytelling failed, and argues that for organizations to develop and sustain effective programs, they need "a theoretically grounded, reflective, and analytical tool." The tool Dush proposes is North American genre theory; as she explains, "what I suggest is making use of the rich unit of analysis that is at the center of genre theory, the genre, by using it to periodically assess ongoing implementations of new textual practices." Dush provides a number of specific analytic tools, including a genre inventory tool and a protocol for documenting the textual, discursive, social, and material impacts of the pilot project's activity.

Part IV: Sustaining Scholarship and the Environment

Our final section illustrates the inclination among computers and writing scholars to look beyond our own borders and to rethink our place not only in the university but also in the world. Our call for chapters dealing with and oscillating between terms like technology, ecologies, and sustainability encouraged authors to think broadly; to see our interdisciplinary, physical, and digital connectedness; and to imagine our roles and responsibilities as they ripple out beyond our particular, context-specific projects.

Lisa Lebduska, in "Sustainable Digital Ecologies and Considered Limits," sees our changing use of tools, techniques, and practices as a type of commons with measurable limits, and advises us to adopt an approach that environmentalists have debated for years. She develops a complex approach to sustainability by distinguishing between "development" and "growth," by applying the environmental conditions of a limited commons to the notion of development, and then complicating that further with Lawrence Lessig's (2001) concept of an "innovation commons." This fascinating amalgam of theory and approaches makes use of Lessig's distinction between rivalrous (where resources are confined and limits seem appropriate) and non-rivalrous (where limits contain innovation and creativity in unhealthy ways) commons. She draws a picture of delicately balanced tensions between constructive and destructive uses of limits and the rivalrous and non-rivalrous components of each of the technological ecologies that we want to sustain.

In the next chapter, Shawn and Kristi Apostel address an issue that we feel has been too long neglected in our field. It seems remarkable to us, as editors of this collection, that—as reflexive as our literacy pedagogies and theories ask us to be—the computers and writing community has rarely (perhaps never?) acknowledged our responsibility for encouraging the growth of one of the most immediate global concern. Apostel and Apostel's chapter, "Old World Successes and New World Challenges: Reducing the Computer Waste Stream in



America,” paints a troubling picture of e-waste trends worldwide and describes a very spotty recycling-based response to this waste-stream issue in the United States. Apostel and Apostel ask: How do we, as a community of technophiles, help sustain our health and physical environment and that of developing countries? How to we contain or deal with the toxic e-waste that we help generate? Apostel and Apostel have visited facilities and studied the much more systematic recycling policies developed in the European Union over the past several decades. The models from the E.U. that they describe challenge us in the U.S. to not only sustain valuable techno-ecologies for learning and scholarship, but also to take responsibility for encouraging (at local, state, and national levels) ethical recycling practices that will address the e-waste we leave in our wake as we steam into the 21st century.

In our final chapter, “Sustaining Scholarly Efforts: The Challenge of Digital Media,” Cynthia L. Selfe, Gail E. Hawisher, and Patrick W. Berry make the case that if we are to remain relevant in this culture, our scholarly efforts will increasingly involve digital production, research, and practices. They also take the opportunity to explicate the challenges to departments of English and other units in the Humanities when digital scholarship is introduced to our scholarly regime. We are certain that a wide range of readers will find it productive to consider their effort to describe “a productive middle ground between the historically informed values of the humanities and the changes currently informing emerging information ecologies in digital environments.” Their compelling goal for this chapter is to sustain “our scholarly efforts, informed by feminist values and undertaken in ways sustainable within the contexts of our own lived experiences as scholars.” Their discussion, we think, can clearly be applied to many disciplines across the university, even those in the sciences where we often look for leadership and ingenuity. For this reason we have placed this chapter at the conclusion of these collected works.

AS WE GO FORWARD

Our goals for this collection have been relatively simple. We want to give colleagues—those now and in the future—a forum for discussing, analyzing, and reflecting on the technological ecologies they have worked to create and sustain and/or that they have studied. We also hope that readers (and we include ourselves and contributors in this category) will have access to a wide variety of theoretical and pragmatic approaches for thinking about and working through the myriad of issues that arise when considering technological ecologies and sustainability, always keeping in mind the important consideration of sustaining what for whom. And we hope to have contributed to and set the groundwork for ongoing discussions of the issues raised—and those not raised but perhaps needed.

All publications, of course, have a goal to spark dialogue. One of the reasons we’re delighted to publish with Computers and Composition Digital Press is the opportunity to make this dialogue more immediate and more public. It is our dual hope that readers will become authors as they take the ideas raised in this collection and discuss them in such venues as conferences, papers, and blogs, sharing their insights, reactions, experiences, and ideas. And it is our hope that *Technological Ecologies and Sustainability* authors will become readers as they read and then respond to the ongoing discussion. Our choice to publish this collection online with Computers and Composition Digital Press (a choice more important and “risky” for the chapter authors than for ourselves) has allowed us to imagine these pieces collectively and individually as knots of associations and as matters of concern that trace a network of associations between humans and non-humans. While the entire collection is a risky account may fail, the excitement of sparking communities of writer/readers is infectious. We look forward to participating with other agents to keep each other accountable as we describe technological ecologies worth sustaining.



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