Saturday Plenary Address

Sustainable Infrastructures and the Future of Writing Studies

Cheryl E. Ball

I begin this talk with an acknowledgement that my remarks today are made, in some cases, as lengthy ~~block quotes~~ from two other pieces I have co-authored with Douglas Eyman. The first is a chapter in the recently published *Rhetoric and Digital Humanities* collection, in which Doug and I outlined three types of infrastructure needed for electronic publishing. The second is a chapter in the forthcoming *Microhistories of Rhetoric and Composition* collection, in which, looking back at the history of a single issue on electronic publishing that was mostly lost to the field for over a decade, we outline best practices for sustainable electronic publishing. Without Doug's collaboration, co-authorship, and co-editorial support, the framework for this talk would be missing.[1]

Setting the Scene

In January 2016—just six months from now—*Kairos: A Journal of Rhetoric, Technology, and Pedagogy* will celebrate its twentieth anniversary. Readers familiar with *Kairos* know that it is a peer-reviewed, independent, open-access journal that has been publishing screen-based, hypertextual, and media-rich scholarship since 1996. (See http://kairos.technorhetoric.net to access the journal.) Since *Kairos's* first issue, its mission has been to publish scholarship that examines digital, networked, and multimodal composing practices—that's twenty years of scholarship about digital writing practices. There are people in this room who had just learned to walk when *Kairos*, too, took its first steps . . . when the notion took hold in our field that digital writing needed its own form of scholarship.

The future of writing studies, my friends, arrived decades ago and has already settled in—but I suspect you know that. So today I'd like to talk

about what the field didn't know twenty years ago about digital writing, and I will warn you that some of that history may be uncomfortably close to home, and for that, I apologize in advance, and hope that you'll take these brief microhistories as forewarned examples. I will also talk about what we need to know going forward—let's say twenty years forward—and what we need to do to plan for that now.

I begin by taking us back to the year 2002, in which the following three scenes occurred.[2]

Scene One

A reader finds the perfect, multi-journal special issue on electronic publishing (see fig. 1) to use as a framework for one of her dissertation chapters on digital scholarship. She cites the work, but when reworking the chapter for publication two years later, she finds that not only are a majority of the dozen webtexts missing, but also three of the five journals are no longer available, and one of those three journals has been completely scrubbed from the Web. It has "disappeared," as we say.

Fig. 1. The multi-journal special issue on electronic publishing, featuring webtexts from five online journals in rhetoric and composition studies. This screenshot is from the *Kairos* version of the table of contents. http://kairos.technorhetoric. net/7.x

Scene Two

A tenure-track scholar's webtext is peer-reviewed and published in a new, online spin-off of a highly respected, long-running, and institutionalized print journal (see fig. 2). The online version is part of a multi-journal special issue on electronic publishing. Less than two years later, and without warning to the author, the online version of this journal disappears from the institution's website and is seemingly wiped from institutional memory. There is no record the webtext was ever published within the journal.
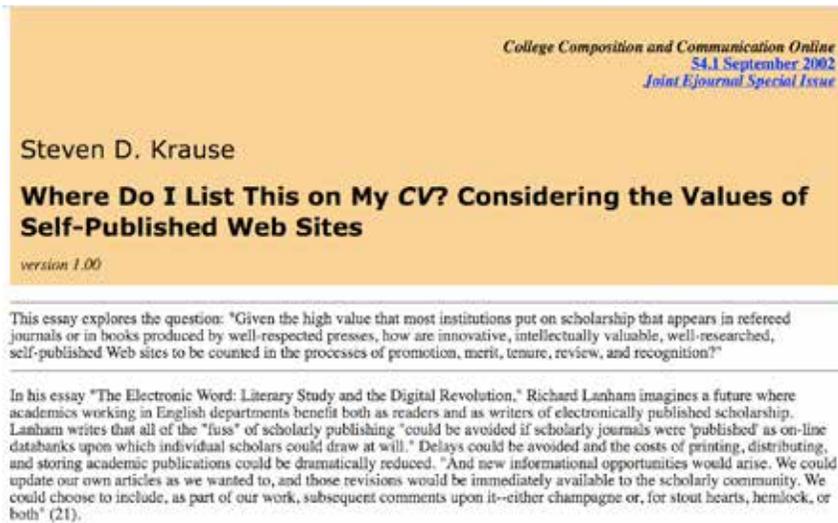

Fig. 2. Steven Krause's peer-reviewed webtext, "Where Do I ~~list~~ This on My CV? Considering The Value of Self-Publishing Websites" originally appeared in the first iteration of CCC Online, in 2002. The only way to access it now is through the Internet Archive, where this screenshot is from.

Scene Three

The editor who suggested that this special issue cross journal borders to showcase five publications that promote web-based scholarship is, five years later, the only editor standing—or, rather, editor of the only journal still consistently publishing.

Now, if any of you have run off on your iPhones to check these links yourself, rest assured that *Kairos* Senior Editor Douglas Eyman has recently restored all of the links he could find to the other journals. In almost every case, this required searching for the author or title of the piece on those journals' new index ~~page~~ and finding them linked deep within their interfaces and "redesigned" architecture in Drupal, with the most unfriendly

URLs possible. However, for most of the last thirteen years, these pieces were not linked or accessible in the way they were originally intended. This instability and erasure has plagued online publishing in rhetoric and composition and is nothing short of shameful. I am embarrassed by it, even as I count myself among one of the lucky ones who works for the only journal that stood. I tell this story from a position of privilege, but also from a position of having worked my ass off to keep *Kairos* running for much of the last fifteen years in various capacities, with a large and incredibly capable staff and the support of amazing senior editors like Doug.

However, I want to tell this story today—this history of a broken thing—because even though these scenes are from over a decade ago, our field continues, *continues*, to make the same mistakes over and over again. We are scholars of rhetoric, and teachers of digital writing (whether we like it or not), and so we need to resurrect this erased past so that we can learn from our mistakes and teach our students—whether they are students in our undergraduate writing classrooms or our graduate students who will be the next keepers and continuers of our scholarly record—to pay better attention to our infrastructures.

The Infrastructures of Digital Publishing

So what, really, do I mean by infrastructures?[3] Based on our combined decades of experience editing *Kairos*, Doug Eyman and I talk about infrastructures in digital publishing in three terms: *the scholarly, the social,* and *the technical*. I'm going to briefly outline the scholarly and the social aspects in this talk, because I want to focus on one that is perhaps less well-known for this audience, the technical, and how to think rhetorically about technical infrastructures for our scholarly endeavors.

Scholarly Infrastructures

Scholarly infrastructure for the Computers and Writing field is slightly different than it is for ~~rhetoric and composition~~ and CWPA's more broadly. Each in-discipline has its own scholarly publishing values. The scholarly infrastructure for the larger field of writing studies values co-authorship and collaboration, mixed-methods, narrative writing styles, peer-review and social aspects of writing, process and revision, as well as social justice, and critically-oriented pedagogies, student-centered and open-door teaching.

These are things that the field not only researches but also (supposedly) adheres to in its scholarship. That is, the scholarly infrastructure is that which supports the field's existent scholarly values. These values change over time, such as when writing studies started to accept more data-driven

research in the 1980s. Or when we agreed that multimodality and hyper-textuality were acceptable to our scholarly publishing values in the mid-90s. It is true, however, that not all in-disciplines of writing studies accept multimodal scholarship as valid—but they'd be wrong. ;)

Social Infrastructures

Social infrastructures are those that support the engagement of the field's scholarship. Since I am specifically talking about digital publishing today, let me give you an example from *Kairos*: Peer review at the journal takes place collaboratively across three stages. First, the section editors evaluate whether a submission is ready for the editorial board; then, if a piece makes it past the first stage, the external reviewers provide feedback usually in a group of five to six; and if a piece makes it past that stage with an R&R, we will assign a staff member to work one-on-one with an author to complete those revisions prior to re-review.

A related example to invoke here is the number of staff members we have on board: There are currently thirty-three staff members at thirty universities across the US! For the August 2015 issue, we have a near-record nineteen webtexts that all thirty-three of these editors, section editors, and assistant editors have been copy-and design-editing, keeping track across our eight-stage production process through a staff wiki and email (see fig. 3).[4] This social infrastructure runs the machine that is *Kairos*. I'm just the wizard. Well, actually, Doug is the wizard because none of this would run without him. I guess that makes me the Good Witch in this metaphor.

The staffing is important to point out here because one of the reasons *Kairos* has been able to sustain itself all these years is due to the large, well-qualified, trained, and dedicated staff who volunteer their time to be part of this social and scholarly endeavor. Many of them are graduate students or early-career tenure-track scholars teaching 4/4 loads who spend as many as ten to fifteen hours a week during production cycles, which can last upwards of three months, two to three times a year. For the first ten years of *Kairos's* life, that wasn't the case—we didn't really have assistant editors, and section editors all worked independently. But it just wasn't sustainable, and a change meant more time hiring and training people. We've done that work now, and everything is in place to bring in new staff members whenever we need them, which is about every two years.

Stage 1: Pre-production check	Ensures items are addressed prior to production changes.
Stage 2: Design editing	Ensures the webtext is technologically ready for production.
Stage 3a: Copyediting	Style, grammar edit
Stage 3b: Copyediting	References edit and fact-checking
Stage 4: Proofreading	Final proofing by AEs
Stage 5: Editor's Proof / Author queries	Editor's proof and author query write-up; Authors work on queries sent by Editor
Stage 6: Finalization	Senior Editor transfers final webtexts to publication location
Stage 7: Author Proofs	Editor emails authors to collect author proofs
Stage 8: Walkthrough	All staff proofread of entire issue; Senior Editor makes final corrections before release

Fig 3. Kairos's 8-stage copy-editing process ensures that every webtext is processed using the best practices in scholarly, social, and technical infrastructures that the journal has built up over the last two decades.

This hiring and training cycle, and this staffing situation, is radically different from pretty much every other online journal in our field. So I know I'm asking a lot when I'm asking the field, and its editors and potential editors, to learn from our prior mistakes in digital publishing. But, we do have lessons learned and best practices to share. And since one of writing studies' core scholarly values is collaboration and sharing and working socially, I think it's reasonable to expect some collaboration and sharing and working socially on these matters across publications in our field. Which is why I get *so angry* whenever I think about the foolishness of NCTE and their complete lack of regard for scholars' peer-reviewed work in online venues that the institution itself has created. Which leads me back to my initial scenes of technological failure and our contemporary scene of technical infrastructures.

Technical Infrastructures

The technical infrastructure of digital publishing is all about sustainability and preservation, regardless of form, in the rapidly evolving technological ecosystems of the Internet. There's a reason why *Kairos* was the only journal left standing when link after link, journal after journal, in the multi-journal special issue of 2002 disappeared: The editors had built the technical infrastructure of the journal to withstand the whims of the Internet. The others? They each had their own stories about why things changed and moved. You can see how things changed with these journals in Jeremy Tirrell's mappings from 2009 (see fig. 4).

Fig. 4. Although this screenshot from Jeremy Tirrell's Google Earth mapping of online journals in rhetoric and composition can't show how staff members' affiliations moved through a journal's publication history, it is useful here to remind us why online and webtextual journals are necessary, how a one-minute video sometimes makes a better rhetorical argument than a 1000 words, and that technical infrastructures that allow for the publication of videos instead of statics screenshots are no small feat.

They speak of microhistories yet to be told, but among the social circles of journal editors, we know why, for instance, *Enculturation* disappeared for a few years after it moved from Texas to Virginia: because its lead editor, one of a very small cohort, was trying to get tenure. That's a social infra-structural issue. We know, too, that the *Writing Instructor* and *Academic. Writing* changed content-management systems and thus went on hiatus, some for several years. That is a technical infrastructural problem—and one that the field, as a whole, is still working on.

But I still don't see those gaps in providing archives of the field's schol-arship as egregious an example as what NCTE has done with its digital publishing over the years. Not once, with the first iteration of *CCC Online* (which seems to have published one, or maybe two issues in 2002.[5] See fig. 5); and not even twice, when it started the *CCC Online Archive* as a meta-data resource for the print-journal's articles (see fig. 6); but *three* times, with the latest iteration that was published on a DropBox account instead of the organization's servers, ran for all of one issue before NCTE pulled the plug (see fig. 7), and as in the previous ~~three~~ cases, wiped all traces of it from their website (see fig. 8).[6]
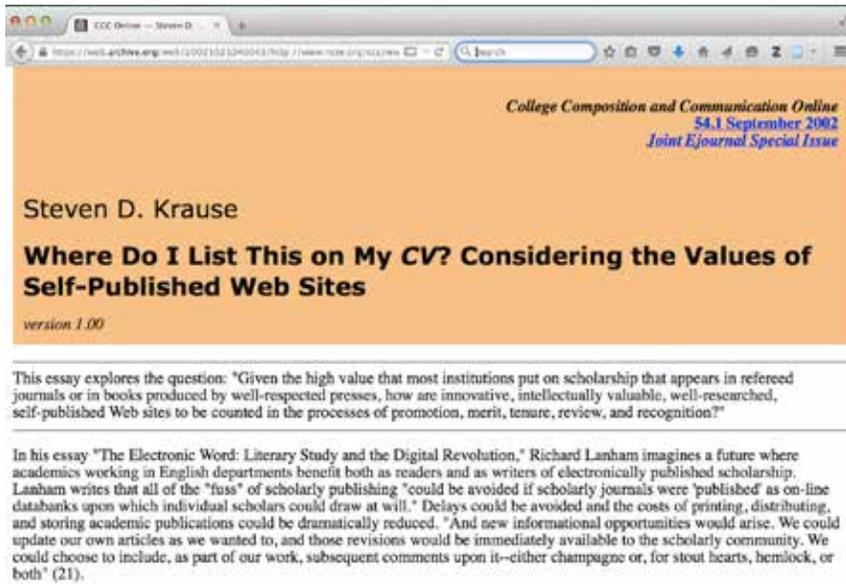

Fig. 5. This screenshot shows one of the webtexts that was disappeared from the original version of *CCC Online* (circa 1998–2003).

Fig. 6. The *CCC Online Archives* (e.g., the second iteration of *CCCO*) was also hosted offsite of NCTE's servers, and when NCTE decided it was done with this service, it migrated the contents to its server, where they have since been rendered un-usable (e.g., if a user tries to click through the links, they are returned to the index page).

Fig. 7. The third iteration of *CCC Online* seemed intellectually promising, but was infrastructurally doomed to failure.

Fig. 8. Although *CCC Online* is still listed on under the CCCC's publications menu options, a user will only find this Login page. There is no additional information regarding editorial contacts, advisory boards, or submission information—even if that info is no longer relevant—without a user having to be a member of CCCC and logging in. It's completely unclear to me why that information would be hidden behind a paywall, even if the journal is no longer active. Imagine if an author's tenure case rested on a publication in that one volume and the Drop-Box URL, and total lack of . . . ugh, I could go on and on about this.

None of these publication problems had to happen. When the third *CCC Online* journal was still forming, still a twinkle in NCTE's eye, they could have asked for advice. They had a ready cadre of members involved in the 7Cs committee that had expertise in these exact areas and who had made it known that earlier mistakes could have been avoided had NCTE gotten its constituency involved instead of springing potentially good ideas laden with bad infrastructures on its membership. Once *CCC Online* was announced, our advice was too late, for the system had steamrolled its way into being.[7]

Let me assure you that I am not here to blame the editor, who, as a tenure-track scholar at the time, could not have known all the problems he was about to face. That was NCTE's bad, for not informing him and for choosing a tenure-track scholar to start up a new journal. I blame them for

knowing it had technical resources in its social infrastructure—humans in its membership who knew well the technical obstacles they faced and could have helped—but NCTE decided not to ask, or worse, after repeating the same mistake multiple times, didn't think to. When people ask me why I don't go to CCCC anymore, I tell them this broken history of technical infrastructure.

Keeping Track of Our Own Scholarship

How can writing studies have a future when our major organization repeatedly and unilaterally expunges, expurgates, and exiles our peer-reviewed scholarship? All for lack of technical infrastructure? I'm here to tell you that it's not that hard to make a website persevere. *Kairos* has been doing it successfully for twenty years. We've had our stumbles—a month offline last summer that forced us to move servers unexpectedly; the four days offline in 2009 when a German company acquired our domain name after a billing error; the one or two complicated pieces that we had to host on other servers along the way and then forgot to move—these are not happy moments in my *Kairos* history. They embarrass me.

But we've learned quickly from all of these errors and made strides towards best practices that have and will continue to make the journal a viable place to publish over the next ten to twenty years (if the web lasts that long . . .). We are constantly reflecting on our practices and interrogating our workflows regarding technical infrastructure, scholarly expectations, and the social capital that serves as the economic engine for our particular journal.[8]

As the landscape of knowledge production becomes increasingly a digital, networked endeavor, it is incumbent upon us to make sure that all of our scholarship is consistently findable, usable, and sustainable. These best practices for sustainability in digital publishing focus on three key aspects of technical infrastructure: accessibility, usability, and archivability. (*Kairos* has been calling this last term *sustainability,* but I am attentive to that word's mission creep as Seth Kahn outlined in his earlier CWPA plenary talk.)

Accessibility Needs to be Supported in order to Reach the Widest Possible Audience

While originally shaped by a focus on users who rely on adaptive technologies and the techniques that provide greater access, publishing with an eye towards accessibility benefits all users. For *Kairos*, accessibility means open-access (of the libre model); requiring rich author-created metadata such as

alt attributes on images; alternate media formats; and transcripts for all audio and video-based media. Accessibility also means consideration of the user's access to bandwidth and the constraints that come with limited access (our server logs show visitors from over 180 countries, many of whom have slow modems or are connecting through cellphones).

Usability Includes Navigational Schema and the Apparatus that Helps the Reader Use the Text

In some ways, usability intersects with scholarly infrastructure as we strive to make webtexts more easily used for research purposes by adding meta-data; making sure the text is open to copying and re-mix; and providing ways to easily cite the works we publish. Usability also applies to the editorial and revision functions—creating texts that can be easily revised is an important part of digital publishing and the teaching of digital writing. For instance, *Kairos* asks authors to use non-proprietary softwares and languages to compose. [No Wix, Weebly, or iWeb. Even question Word and WordPress. Basically, anything that begins with a W]. This allows all of our editorial staff to access the 'neath text, or code, with minimal effort as we copy- and design-edit the piece during production.

Archivability Requires Preserving Texts and Providing a Means for Users to Find Past Iterations in the Event that a Journal (or Artifact) Moves or Changes Its Primary URL

The discussion around the archiving and preservation of digital artifacts changes daily. This is not an issue to be solved once and for all but to monitor and adjust as new technologies, new media, and new genres emerge. As a participant in the "Access/ibility for Digital Publishing" seminar I held last week at West Virginia University said, "Don't tell me that your Word-Star 4.0 document won't open. You just don't have the right hardware and software to open it with." It's unreasonable, however, for us as scholars to maintain technical systems that would allow us to open every digital file on the planet far into the future. But if we prepare our texts with the idea that—in twenty years, or, even in five years—some human or alien or tenure reader might need to open the CWPA 2008 conference program (see fig. 9), then we need make that possible.

Fig. 9. This screenshot from the CWPA website shows a 404 error (File Not Found) when a user clicks on the link for the 2008 CWPA conference program.]

Here are three of *Kairos's* sustainability guidelines for all authors (out of twenty-four total guidelines for design, which doesn't include coding recommendations):[9]

- We need to be able to archive everything we publish, so we cannot accept webtexts hosted on third-party sites (such as Wix and Weebly).
- We strongly encourage authors to use standard, non-proprietary formats (HTML 5, CSS, etc.) rather than Flash or other embedded proprietary media or template engines.
- Upon acceptance, we will need copies of all embedded media files, and all 3rd-party sites that host files must be shared with the journal in order to facilitate editing and archiving.

Technical infrastructure is in some ways simpler (because there are known best practices like the W3C guidelines) and more challenging for digital publishing (because fewer journal editors have the technical expertise to run servers and networks). In writing studies, where academics are more professionally mobile than in other fields, the social and technical infrastructures intersect as editors and publishers move from one institution to another, sometimes bringing their journals with them and sometimes leaving them behind.

As the economics of publishing further erodes the capacity to produce and mail out new print texts, there is a gradual shift to more online venues,

including those for long-form and data--driven scholarship: from the WAC Clearinghouse to Computers and Composition Digital Press, the University of Michigan's Sweetland series, and the Research Exchange. It has been our experience at *Kairos* that writing studies tends to overlook the technical as not a core element of writing practices, and we aim to correct that, at least in terms of digital scholarship and electronic publication.[10]

So this is how we fix broken things: Most authors and editors have a strong sense of the scholarly infrastructure (peer-review, placement in appropriate directories and bibliographies, the apparatus that authors need for tenure and promotion) as well as the social infrastructure specific to each journal's institutional and disciplinary context and mission. We—as authors, editors, publishers, teachers, and organization members—remind ourselves to carefully consider all three forms of infrastructure—scholarly, social, technical—when working with digital texts and to reach out to those of us who have histories and experiences that we are happy to share, particularly with the lesser-known technical infrastructures of composing and publishing. This attention to the infrastructures of digital publishing should begin to infuse general writing curricula as we prepare students for writing contexts that already begin with born-digital as a standard approach rather than an innovation that only techno-rhetoricians may engage.

Notes

1. During the talk itself, I wasn't able to point to all the places of self-citation. Many of the passages were slightly rewritten in context of the talk, so I haven't used quotation marks to indicate these passages.

2. Although they appear in a different order, the three scenes come from Ball, Cheryl and Douglas Eyman's "History of a Broken Thing: The Multi-Journal Special Issue on Electronic Publication" in *Microhistories of Composition,* edited by Bruce McComiskey. (Logan: Utah State UP, 2016). Reprinted with permission from the publisher.

3. Discussion of the infrastructures of digital publishing is taken up in our *Rhetoric and Digital Humanities* chapter in more detail and was originally published in a slightly different form in *Rhetoric and Digital Humanities*, ed. Jim Ridolfo and William Hart-Davidson (New York: U of Chicago U, 2015), 65-79. Reprinted by permission of the author and the publisher.

4. For more discussion on design-editing as a unique stage in *Kairos's* copyediting process, see Ball, 2013 and Ball and Eyman, 2015b.

5. After my talk at CWPA, I had the good fortune to sit down with Todd Taylor, who had been the editor of the original *CCC Online*, to ask him what had happened to it. While he couldn't answer the latter (because it was up to NCTE

to maintain), we had a great discussion about its process of becoming that I hope to elaborate on in the future.

6. For more discussion of the history of *CCCO*'s disappearance, see the *Microhistories* chapter. I admit that, for the sake of streamlined arguments, only parts of the *CCCO* technological narratives (across the three versions) have been included in these writings and only those I've had first-hand knowledge of through my editorial work or committee work in the mid-2000s on 7Cs.

7. In April 2010, a month after the start of the journal was announced at CCCC, I sent an email query to the editor asking for clarification on the journal's technical and social infrastructures, in part because I wanted to publish there myself and I knew about NCTE's poor history with its previous two *CCCO* versions. Although I no longer have the response email, I believe it said that NCTE was still working out the logistics, but given the journal's final DropBox resting place, it's obvious they never did. So that it may be of use to other scholars and future editors, here's the list of questions I asked:

> (a) will *CCC Online* be open access? specifically, will the webtexts be free and open access?
>
> (b) how will the journal address copyright and Fair Use in multimedia scholarship?
>
> (c) when do you expect the first multimedia issue to be published?
>
>> (c1) are you working on a traditional "issue-based" timeframe for the journal, or will you be pushing publications as they become ready?
>
> (d) how will the review process be done? I'm assuming you won't be doing blind review, but will the reviews be done traditionally as separate letters? And what criteria will the reviewers be using?
>
> (e) given *CCC Online's* past history of moving things around, what infrastructure and sustainable staffing measures are in place to assure authors that once their work is published in the new *CCC Online,* it will remain at that URL in perpetuity?
>
> (f) what "system" are you using to host the journal? or a better question: when will submission and technical guidelines be available for authors?

8. For more context on the accessibility practices discussed below, see the *Microhistories* chapter.

9. To see the full list of design guidelines for *Kairos*, visit http://kairos.technorhetoric.net/styleguide.html

10. For more discussion on why coding literacies should become part of our writing pedagogy, see Eyman and Ball, 2014.

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