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Looking for sources of coherence in a fragmented world: Notes toward a new assessment design

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Abstract

Assessing digital texts requires criteria and processes responsive to the texts as *compositions*. In this article, I note that current software already assesses digital texts, and I suggest ways to become aware of and to use such assessments as sites of invention. In addition, for assessment I propose a four-part heuristic keyed to the multiple patterns that both composers and readers use to create coherence.

Keywords: Arrangement; Assessment; Coherence; Composition; Digital; Heuristic; Invention; Patterns; Texts

1. Introduction

That we live in a fragmented world is not news. That textuality has pluralized is, likewise, not news. What we make of these observations pedagogically is news—and is still, as they say, under construction. *Computers and Composition* is prescient in this regard in that, even in its title, there is the claim that in writing, medium indeed matters. In the journal title is also the promise that the combination of computers and composition would signal a profound shift in the ways we write. The ways we write aren't quite shifting, however; we *aren't* abandoning one medium for another. Rather, the layered literacies Cynthia Selfe (1989) described have become textured in interesting ways: Print and digital overlap, intersect, become *intertextual*.

And key to these new ways of writing, these new literacies, these new textures, I'll argue, is *composition*, a composition made whole by a new kind of coherence. If we are to value this new composition—text that is created on the screen and that in "finished" form is also mediated by the screen[1]—we will need to invent a language that allows us to speak to these new values. Without a new language, we will be held hostage to the values informing print, values

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worth preserving for that medium, to be sure, but values incongruent with those informing the digital. This, then, is one foray into a new assessment breach: How might/do we value the digital composition? How might those values lead to an assessment?

2. Sources of coherence in a fragmented world

That we need a new language is evident almost everywhere we look. Pedagogically, for instance, we seem comfortable with intertextual composing, even with the composed products. But we seem decidedly discomforted when it comes time to assess such processes and products—regardless of whether by assess we mean responding to student texts or putting a grade to them; articulating the values demonstrated in the work of colleagues who help students create these texts; or even attempting to ascertain the value of our own digital compositions. A larger question here is: Do we assess writing in virtual space and writing embodied in a physical document differently?[2]

Although many scholars have addressed issues of intertextuality and digital composing in more theoretical ways (e.g., Bolter & Grusin, 2000), what seems to happen in practice is that we use the frameworks and processes of one medium to assign value and to interpret work in a different medium. Beginning with a comparison of print and digital can provide ways of understanding what we value in both textualities, especially as we see how the virtues of one diverge from the virtues of the other, particularly in terms of coherence. Coherence is at the heart of print texts, of course, bringing into relationship arrangement and development, form and content, author and reader. Moreover, there is a considerable body of research and theory on coherence in print, providing us with a framework through which we might think about the coherence of digital texts. Before I begin to discuss this framework, some assumptions:

- First, I am assuming that coherence is a defining feature of composition.
- Second, I am assuming that digital texts are compositions, or can be.
- Third, I am assuming rhetoric is at the heart of our worlds—be they fragmented, print, digital—and that the point of rhetoric is to bring people together. From this perspective, then, coherence is all about relationships.

The distinction between print and digital textualities rides a fine line. Print seems unable to offer the seemingly infinite opportunity to arrange and re-arrange text: That is, to compose it, and (then) to (re)compose it again—even now, in the age of word-processing software (or beyond it), when, admittedly, print is somewhat hybrid. Often composed in the digital environment, text loses fluidity when it becomes fixed as *the page*. And the reverse is true: The fact that something is created for and delivered on the screen doesn't make it *unlike* print. In other words, even though a text is produced in a digital environment and appears on the screen, it can remediate print (Bolter & Grusin, 2000). Such texts, when school-produced, are the academic analogue to the print catalogue—a genre written for the page, not the screen, where digitality serves one of two purposes: easier storage or quicker dissemination (or "print uploaded"; Wickliff & Yancey, 2001). Regardless of the fact that they are housed in the digital environment, these texts do not participate in it, but instead are represented in the composition of print. As I have explained elsewhere, the text embodies the values we associate with print:

a claim; a single arrangement; support, typically developed in an explicit and linear style; a conclusion (Yancey, 2001). Digital texts, in other words, come in two general flavors: print uploaded or digitally designed. The coherence of print uploaded, not surprisingly, is that of print, and because it sets the stage for coherence in digital compositions, understanding how it is achieved is my next task.

3. Coherence in print texts

Print texts achieve coherence in two ways: through words and through context. Conventional advice focuses on the relationship between words, as we see in the advice offered by Daniel Kies (2003):

> Coherence is product of many different factors, which combine to make every paragraph, every sentence, and every phrase contribute to the meaning of the whole piece. Coherence in writing is much more difficult to sustain than coherent speech simply because writers have no nonverbal clues to inform them if their message is clear or not. Therefore, writers must make their patterns of coherence much more explicit and much more carefully planned. Coherence itself is the product of two factors—paragraph unity and sentence cohesion. (n.p.)

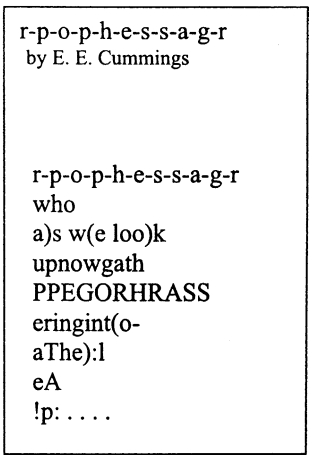
This handbook advice, however, as Richard Haswell (1989) argued, reminds us of the disjunction between what we advocate and what we do. We advocate—to students particularly—that text is bound one word to the next, one sentence to the next. And these "bindings"—or ties as Michael K. Halliday and Ruqaiya Hasan (1976) would have it—do point to the connections between words that, yes, in part compose coherence. At the same time, the words are often linked not one-to-one, but one-to-many, dispersed across fields of words and fields of contexts invoked by those words: A substitution for one word, occurring three sentences after the original reference, can provide the tie that binds. Relations between words as a source of coherence in print texts? Yes, to be sure. And, as important, relations between words and context. Coherence in print, then, seems a two-dimensional relationship: A coherent composition is created through the relationship of words to words, and words to context.

From an assessment perspective, coherence is important in a couple of ways. As we have seen, coherence shows up in handbooks: The student audience of writing handbooks produced in the United States is advised to write a coherent text, to write a text that *connects*. Coherence also brings with it its own handbook vocabulary and devices. Handbooks advise, for instance, that to create coherence, we repeat key words and we add transitions. Perhaps most important to standard North American academic prose, coherence itself is seen as one criterion for good writing. By definition, organized writing is coherent, and good writing is organized, and in print, it is organized in a single way: front to back. The construction of coherence in U.S. culture, then, tells us much about what we value in writing and, accordingly, much about what we assess.

Halladay and Hasan's (1976) work on coherence focused on non-fictional texts. But obviously texts fit into other genres as well—fiction, poetry, and mixed genres like creative non-fiction and alt.writing, the latter a text that displays characteristics of a discourse other than academic discourse and whose purpose may in fact be to disrupt those conventions intentionally (Dobrin, 2001).[3] These genres also aspire to coherence, although they achieve it

by somewhat different mechanisms. Words connect, for instance, but the relationships holding between them tend to be associative and juxtapositional rather than literal and explicit. When words provide such connections, words—which are always metaphorical—seem doubly so.

When we look at language poetry and some alt.texts in particular, we see a shift to a third source of coherence: the page itself. As Richard Lanham (1993) remarked of electronic texts, such texts—because of their special relationship to the page (or in Lanham's discussion, to the screen)—offer a canvas on which and through which text is composed. In other words, writers of poetry and alt use the page as a partner to create meaning; in this sense, the context of the page becomes an explicit part of the text, thus providing another source of coherence. Another less-determined relationship is offered to the reader: one created by word to (metaphorical) word, by word to context, and by word to its position on the page and to its position to the other words. Lanham also spoke to the coherence possible on the screen when he noted that "the textual surface is now a malleable and self-conscious one," enabling the author to work in a medium that is "bi-stable" (p. 5). The author can create text we look both at and through. The overall effect, Lanham said, is a kind of "rehearsed spontaneity" (p. 6), itself located within other kinds of coherence as well, as we shall see.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In one last digression before drafting notes toward assessment of digital texts, I need to point out the obvious. My notes toward such an assessment are already a day late and a dollar short. As Carl Whithaus (2002) eloquently explained, the texts that all of us—students and faculty members alike—are producing in the simplest word-processing programs are *already assessed* in some key ways:

> Are our systems of reading, responding to, and evaluating student work in electronic portfolios doomed to reproduce current-traditionalist models of writing instruction when students are already receiving detailed feedback on their sentences from their word-processing software? Turning Microsoft WORD's grammar checker off is one option; customizing the grammar checker is another. But neither one of these solutions addresses the underlying problem: Advances in word-processing software have already internalized a vision of writing effectiveness as writing "correctly." In the near future, writing teachers will inherit a generation of students who already know how to fix the "menial" problems with their language—simply look for the green squiggly line and right click. (n.p.)

As Whithaus rightly pointed out, what might seem to be an advance—that is, who wants to argue in favor of invented spelling rather than a standard form, at least in the abstract?—can morph into a decided difficulty, especially when many of us are hoping to teach discourses other than the academic. As Whithaus asked: "How do we teach what Pat Bizzell has called hybrid discourses when students are being corrected as their language spills out onto the screen? When and where will students be given a chance to write like Victor Villanueva in *Bootstraps*?" (n.p.).

We can only assess what is produced, and what is produced is increasingly something not only assisted by technology, but, as Whithaus showed, created by technology and in ways that can be at odds with a desired effect. Technology isn't the villain; but as a tool, technology is not innocent. It is both shaping and assessing the writers whose work we want to assess—and not only in word-processing software—as Teddi Fishman reminded me when she noted in a personal email that her "last email may have sounded negative which was not what I intended (especially since spell-check changed my 'Aaaah' at the beginning to 'ha"'). This is also so in email applications like QualComm's EUDORA, in which chili peppers automatically mark an email that contains potentially offensive text, and in spam detectors that break links within email messages. Online, assessment is ubiquitous, and yet we do not often observe its effects.

In addition, even when we become aware of the assessment embedded in the tools we use and even when we pay attention to the effects of such assessment, it's frequently after the fact. Take, for instance, our responding practices and students' reading of our notes to them, and our responding practices to each other. What we create is not always what's received. In still other cases, we do see but are seduced by the technology, as Cheryl Forbes' (1996) narrative about responding practice suggested: Excited about the power of technology to enhance her assistance to students, Forbes inadvertently took over student texts and her comments *became* the texts. Only in retrospect did she find that the ease of the technology was too easy: Responding became rewriting, a rewriting she did not engage in when responding to student work with the technology of the pencil. As Forbes concluded, technology is a partner and we are its often-unwitting accomplices.

So, assessment is already in play. A first condition for assessment of digital compositions, then, is awareness of the condition. A second condition is that we specify what the digital makes possible and what we intend for it—or an assessment informed by intent, effect, awareness, and design.

4. Digital compositions and coherence

In thinking about digital textuality, digital compositions, and ways coherence is achieved in them, we could simply list possibilities. The possibilities include those of print because verbal text is included, even if sometimes morphed, other times deployed visually, and still other times included almost as an afterthought. Regardless of the kind of digital text, we have the ties of print text, the semantic associations and juxtapositions of poetic text, and the play of text on the page or screen as partners. But this of course begs a question: How many kinds of digital texts are there? Rather than try to account for all of them, because they seem to proliferate more quickly than we can list them, we might find it useful to begin to construct some notes toward digital assessment by reviewing a couple common types of digital text.

We have email, where coherence is created, in part, through repetition as responders copy text to provide a context for reply. That repetition creates a kind of Halliday and Hasan tie from one email to the next, creating a meta-text. Is this meta-text a (collaborative) composition? Equally interesting is the Sort function of email programs, which allow users to arrange and re-arrange email materials by date, by sender, by header, and so on, thus allowing the email reader to control the context in which an individual email is sorted and read. This ability to arrange and re-arrange (and re-arrange again) is a central feature of many if not all digital texts. Arrangement is key—or put more accurately, multiple arrangements are key.

> Generally, excellent web portfolios will be characterized by the extent of the web, the creativity of the links, the meaningful coherence of the whole, the quality of the individual sites, the clarity of the overall design... and the overall aesthetic quality of the portfolio ("Web Portfolios," 2003, n.p.).

Another electronic text is the digital portfolio, and here I mean more and other than an online assessment system, which tends to be a drag-and-drop templated set of responses. Rather, by digital portfolio I mean a set of materials gathered for a particular purpose and audience, and narrated or introduced by means of a reflective text. Typically, digital portfolios rely on links to show connections, and these links provide the structure we associate with coherence. As the evaluative guidelines for the St. Olaf portfolio criteria suggest, *the meaningful coherence of the whole* is directly related to *the creativity of the links* and to its *design* ("Web Portfolios," 2003). Links, like an email sorter, provide an arrangement linked to coherence.

Another common text is provided through presentation software, the most popular of which is Microsoft POWERPOINT. Like digital portfolios, POWERPOINT can achieve coherence though templates. As a 2001 *New Yorker* article suggested, the templates in POWERPOINT are so powerful that the software literally templates thought—and not to good effects (Parker, 2001). When templates are not used, coherence is achieved in several interacting ways. One case study I conducted (Yancey, 2001), for instance, demonstrated that as students revised POWERPOINT presentations, using them for print compositions, they relied on a refrain created through the repeated visual canvas of the slide; repeated words and phrases; repeated images; the relationship of words and images; and the placement of words and images both on individual screens and throughout the set of screens/slides. In other words, the patterning of information—putting the verbal and the visual in dialogue with each other—created coherence.

Two other digital texts are MUDs (multi-user domains) and MOOs (multi-user object-oriented domains), and hypertext. According to Peg Syverson (1998), the basic source of coherence in MUD/MOO texts is pattern:

> The concept of pattern languages composing relationships which form structures to resolve dynamic tensions is a powerful way to look at variations in patterns of human reasoning, particularly as they are manifested in electronic environments such as MOOs and MUDs. Some of the patterns I've observed include stars, spirals, collectivities, stories, networks, spatial architectures, and fractals. These patterns are not confined to MOOs and MUDs, but the environment of MOOs and MUDs affords us unique opportunities for observing them. (n.p.)

Others have also commented on the digital textuality of MUD/MOO texts (see, e.g., Haas & Gardner, 1999; "Pedagogies in Virtual Spaces," 1996; Rouzie, 2000). And we have hypertexts,

those compositions that open many doors plotted by an author but activated by a reader—compositions whose logic makes more than monological sense, but whose arrangement is a collaborative effort. Others have written much about the design/logic/space of hypertext (see, for example, Amato, 1992a, 1992b; Carter, 2003; Cullen & Balkema, 1995; DeWitt, 1996; DiPardo & DiPardo, 1990; Fischer, 1996; Golson, 1995; Gruber, 2002; Johnson-Eilola, 1997).

In sum, coherence in digital compositions seems to be a function of a pattern that is created through the relationships between and among context, screen, image, the visual, the aural, the verbal, and with repetition and multiplicity as the common features.

5. Connections: patterns, weaving, threads, and gaps

In creating digital texts, then, composers can create coherence in a number of ways:

- with/in a text/by a reader/contextually
- directly/associatively/spatially
- reiteratively
- verbally/visually.

Through un/mediated ties and links, digital texts permit and require attention to space and canvas, context (and context as part of textual meaning), and sorting potential and linking. New relationships are pluralized within a new space. The space itself provides a background and simultaneously represents a culture against which the screen is plotted. And that screen may itself be linked to another, may be re-sorted, may even be copied onto paper. Its design is plural by definition: It is composed by more than one element, and its arrangement tends to come in at least two forms.

Patterns are one way to talk about coherence in digital texts. Another way to think about this patterning and how the pieces within a pattern connect, not only to themselves but also to other pieces outside of the immediate reference, is to think in terms of weaving. The word weave

> derives from the Latin *texere*, meaning "to weave," which was used also to refer to that which is woven (textile) and the feel of the weave (texture). But it also refers to a "weave" of an organized arrangement of words or other intangible things (context). A textile is created by bringing together many threads and, as such, represents ordered complexity. Language, too, is ordered complexity, and when we understand a word by its context we are discerning a pattern and filling in a gap, sewing together what is torn, extracting meaning not only from what is said but from the relationships this act of saying sets up with other statements, conditions, events, and situations. (Adams, Hoelscher, & Till, 2001)

Digital compositions *weave* words and context and images: They are exercises in *ordered complexity*—and complex in some different ways than print precisely because they include more kinds of *threads*. As important, because the context for digital compositions is still so new and ever emerging, these texts tend to live inside the *gaps*, such that the reader/reviewer/responder is a more active weaver, creating arrangement and meaning both, and, I think, participating in a Bakhtinian creation of textual prototypes. In other words, we don't have a final definition of many of these texts—and perhaps we never will. But as a genre, or even as separate genres, they aren't stable yet, in the way that a novel or a poem is.

6. A heuristic for assessment

To assess these texts, then, we might consider the use of a heuristic. The value of a heuristic is that it is inquiry-based: It opens up a reading and an assessment by asking a consistent set of questions. In so doing, a heuristic helps provide information that can be used in evaluation. In addition, a heuristic used consistently—across a set of texts, in this case digital texts—can help us think more systematically about these texts. And not least, a heuristic leads to inquiry, which means that as readers of texts, we are encouraged by the technology of the assessment itself—(i.e., the heuristic) to respond as someone who inquires, who thinks to know, who thinks through inquiry (Yancey & Huot, 1997).

To create this heuristic, we will need another language, and we will—as Whithaus (2002) suggested—need to move our assessment to a higher level of abstraction, what he called making "communicative- and context-based evaluations on the macro-level" (n.p.). What this means is that we need to think in terms of pattern/arrangement as functioning in both design and reception. Patterns can be static, as in the case of some POWERPOINT presentations: The slides are not hyperlinked, and they follow the same pattern throughout, with each slide having identical backgrounds and following a linear path. Patterns can also be dynamic, as in the case of digital portfolios that branch to the right and left through linking. When both static and dynamic patterns are used, they tend to have some relationship to each other: The static opening page of a hypertext sets up expectations for the dynamic pages that follow—they are in relationship to each other. One email can be static or dynamic, but it is patterned in relationship to future emails or emails past. How a reader or a writer or a composer establishes these relationships is through patterning.

We tend to know—or think we know—how a text functions in reception (i.e., how we receive it), which is why we have less trouble responding to a text; we respond based on our reception. Whether that reception is informed by print or digital values can change the evaluation. For instance, the criteria for a print portfolio may include connections between a student's course-work and other experiences, but it is unlikely to include links to those experiences. A digital portfolio, on the other hand, is likely to include and privilege those links: They will help form the structure of the text. The text has a design to it, a pattern, and to assess that pattern, we need assistance from the designer, much as we solicit information about the logic of a painting from an artist or about the interpretation of a novel from a novelist. In asking for such an explanation, we encourage attention to the patterning that is a primary source of coherence in digital texts.

A heuristic, then:

1. What arrangements are possible?
2. Who arranges?
3. What is the intent?
4. What is the fit between the intent and the effect?

6.1. Email coherence and the heuristic

How might we use such a heuristic? To take a simple example, let's think about email. On the one hand, there are suggestions one might follow to write an effective email. However, the

way we process the email has everything to do with what we read, given that what we read is, in part, a function of context; through the ability to arrange and re-arrange, we shape the context. I can read my daughter's email in the context of my daily emails (about 150 or so). I can read it in the context of the email that my daughter has sent me over the last few months, in which case it's more personal, more like a part of a series of letters. I can read it in the context of emails that I have to answer immediately. So:

- What arrangements are possible? Many, from the routine delivery of email into my email-box, to writer-only, to task-based, to attachment, and so on.
- Who arranges? The email software I use has arranged what is possible, and provides for multi-arrangements. I have default settings, which I can change. I control the arrangements, and they are plural.
- What is the intent? The intent is to talk to me in writing that is not speech, in a manner that provides for a quick response.
- What is the fit between the intent and the effect? In part, this depends on how cleverly my daughter has written her email.

And regarding this last point, there seems to be a new arrangement as well, as William Condon (2001) noted in talking about email discussion lists:

> Lists operate cumulatively. What I say, I develop over several shorter messages, and it's interleaved with what others say... we have quite an extended, varied, detailed, deep, and rich conversation... We do have long and probing conversations... and those conversations often morph into other long and probing conversations.... SOMEone needs to teach people how to interact in these environments. We are talking about literacy, certainly, and it does matter. (n.p.)

Discussing interlayering for classroom email purposes, I suggested that there were three specific ways of effective layering:

- Connecting with earlier posts by providing sufficient context and synthesizing;
- Responding specifically to issues already raised; and
- Taking issues already raised and extending or complicating them (Yancey, 2002, pp. 114–115).

In a classroom situation, we can always ask for a reflection that speaks to the intent, which we can then use as a canvas against which to plot effect. Outside of a classroom situation, email writers and email readers likewise need to be more reflective in their own processing. A classroom reflection encourages this habit of communication.

6.2. Digital portfolio coherence and the heuristic

I want to think, just briefly, about another digital composition: a digital portfolio. In 2003 I taught a general education literature course where students composed digital portfolios of their writing. For this discussion, I will focus on the portfolio of one student, Mimi Dial (2003). Mimi's portfolio is organized in two ways: First through a listing of work samples, which we see in Figure 1, and then through a reflective letter, which we see in Figure 2. The order of the work samples in each genre—the list and the letter—varies. Neither order

Fig. 1. Mimi's portfolio list.

is chronological. In the case of the list, it's not clear what the logic is, and no explanation is provided, nor is any context. The second set of links emerges from the context of the letter, so the reader can literally see the relationship between the initial links and the claims made in the letter. How a reader proceeds is up to him or her. To return to the heuristic, then:

- What arrangements are possible? Two, at least: I can link to items through the list, and that takes me through one path or I can link as I choose through the letter. I can also go back and forth.
- Who arranges? Both of us: Mimi set up some navigational structures, and I make them work as I choose.
- What is the intent? To provide a window into Mimi's development and accomplishments over the term.
- What is the fit between the intent and the effect? It works—in fact, I used both arrangements and saw through both lenses. And, of course, I had the reflection in the letter to guide me, which helped.

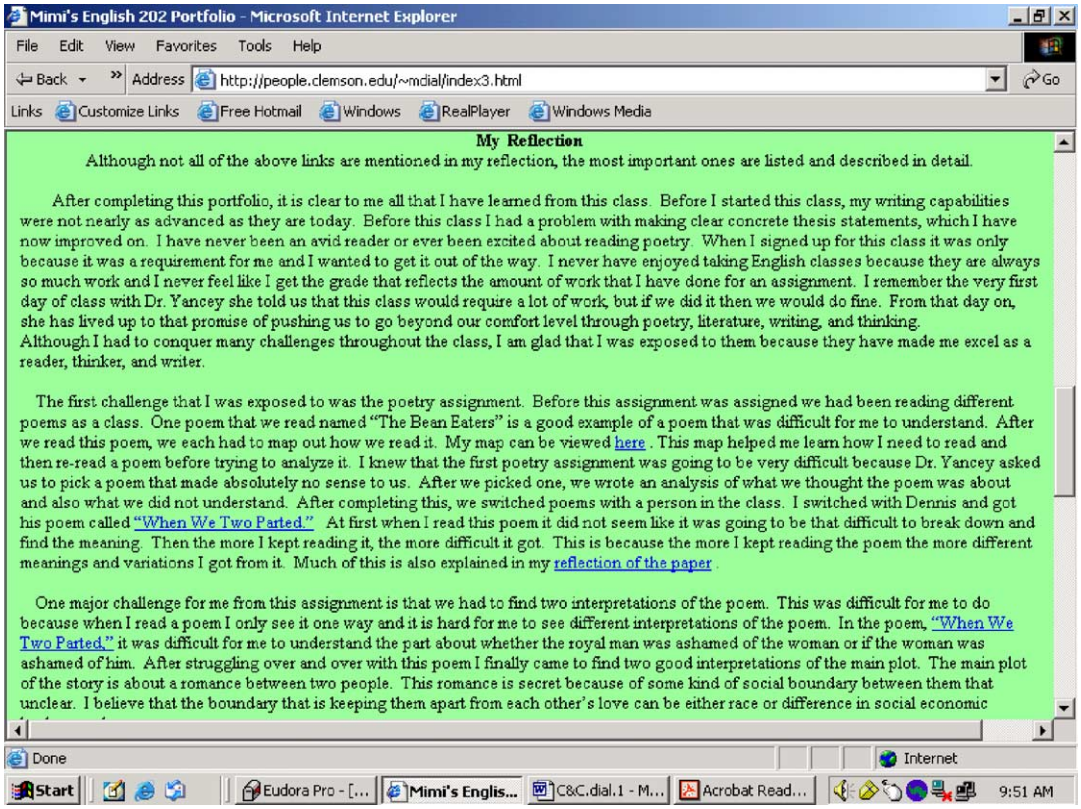

Fig. 2. Mimi's portfolio reflective letter.

The relationship between the two arrangements in Mimi's portfolio parallels a point about scoring made by Brian Huot and Judy Pula (1993), who conducted a study in which readers were trained to be raters. What they found was that once trained as a rater, readers could read more fully:

> In fact, the holistic scoring training, rating sessions, and other attendant socialization actually work as a type of enculturation where raters create an immediate discourse community within the larger community to which they already belong. The smaller community permits raters to work as a group, achieving consensus, but at the same time retaining the individual and personal nature of their reading. (p. 261)

Another way to think about what happens to raters here is that through work with a scoring system, they develop a schema that provides a framework for the reading. Because they have a scoring system in place, they don't have to be anxious about how to arrive at an evaluation, and they are freed to read as they might. Multiple arrangements in digital portfolios provide the same schemata: We use one as a default and thus are able to exploit fully the others because we trust that default. Thus, the logic of the hypertext, which provides multiple arrangements through searches, site maps, navigation bars, and the like. One of these provides a default schema, the others a chance to re-arrange, inventing each time we do.

7. Composing digitally, writing coherence, expressing relationships

> Composition (*noun*): an essay (especially one written as an assignment): "He got an A on his composition." (One Look, 2003)

I have thought of digital texts as compositions that live inside digital gaps, that create their own unity through patterning, that are located in a kind of coherence like print and yet different from print, too—more visual, more dynamic, ultimately more contextual—that weave together, if only temporarily, fragments of a postmodern world.

And in their own design, digital compositions may unintentionally offer us new opportunities for invention, for the making of meaning. Earlier, for instance, following Forbes (1996) and Whithaus (2002), I suggested that assessment is either overly seductive as a consequence of the computer or already built into much computer-generated discourse. Like the other topics under discussion, however, assessment is also a construction, and we can exert some influence over assessment. For instance, software programs flag problems, but we do not have to agree that they are, indeed, problems. Thus, Brenda Kremer (2001) noted that when her word-processing software electronically signaled that "por" (underlined by a squiggly red line as I write this onscreen) doesn't match a word in the software's dictionary, it also provides a composer with a list of possibilities—pore, poor, pour—that themselves open up new avenues for meaning. As Kremer noted, let "the spell check por. . . [and it will] *pop up* what else might have been, and you might laugh, you might have a new idea. You might become aware of language" (p. 97). As in the case of found poetry and found images, the found words point to potential meanings.

Just because the word-processing application paints a word in red—an example of print uploaded; will red as error ever change?—doesn't necessarily make the word an error or wrong. We decide. The software can initiate a search for the correct; it can provide a new opportunity for invention; it can make the computer a co-composer.

> Composition (*noun*): the spatial property resulting from the arrangement of parts in relation to each other and to the whole: "Harmonious composition is essential in a serious work of art"; *composition* (*noun*): something that is created by arranging several things to form a unified whole: "He envied the composition of their faculty." (One Look, 2003)

The ultimate sources of coherence are always in relationship: A composition is an expression of relationships—between parts and parts, between parts and whole, between the visual and the verbal, between text and context, between reader and composer, between what is intended and what is unpacked, between hope and realization. And, ultimately, between human beings.

Digital compositions, then, bring us together in new ways and provide us with an opportunity to form new relationships—through multiple constituents of meaning and arrangement with each other—and perhaps to be more intentional in so doing. The language and heuristic provided here constitute one effort to assure that these new ways are acknowledged and valued appropriately. And, perhaps, the heuristic—together with new digital texts—will provide us, as they have for me here, with new questions about the relationships between and among composers, readers, and texts. In that way, such compositions may indeed constitute a new site of inquiry about how we invent, how we read, and how we create texts that invite us to do both.

Notes

1. One way to think about composition in the last 50 years is to see it occurring in stages or waves: First, print composition; second, digitally produced composition submitted in print and reviewed in print; third, a new composition—a digitally produced and processed composition. How multi-modal such a text might be is an open question, as is the set of skills we need to teach and learn such compositions.
2. This question was the topic of a TechRhet Thursday Night MOO on May 22, 2002; the week's topic was "C&W 2002: Reflections on Teaching and Learning in Virtual Spaces" (Walter, 2002).
3. For a discussion of the differences between and among alt, hybrid, and mixed texts, see Pat Bizzell, Helen Fox, and Pat Schroeder (2001).

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References

Adams, Paul C., Hoelscher, Steven, & Till, Karen. (Eds.). (2001). *Textures of place*. Minneapolis, MN: University of Minnesota Press.

Amato, Joe. (1992a). Science–literature inquiry as pedagogical practice: Technical writing, hypertext, and a few theories, Part I. *Computers and Composition*, *9*(2), 41–54.

Amato, Joe. (1992b). Science–literature inquiry as pedagogical practice: Technical writing, hypertext, and a few theories, Part II. *Computers and Composition*, *9*(2), 55–69.

Bizzell, Pat, Fox, Helen, & Schroeder, Chris. (2001). *AltDiscourse*. Portsmouth, NJ: Heinemann.

Bolter, Jay David, & Grusin, Richard. (2000). *Remediation: Understanding new media*. Cambridge, MA: MIT Press.

Carter, Locke. (2003). Argument in hypertext: Writing strategies and the problem of order in a nonsequential world. *Computers and Composition*, *20*, 3–22.

Condon, William. (2001). *Chatting away. Writing Program Administrators Listserv (WPA-L)*. Retrieved November 21, 2001, from <http://lists.asu.edu/cgi-bin/wa?A2=ind0111&L=wpa-l&D=1&O=A&P=16736>.

Cullen, Roxanne, & Balkema, Sandra. (1995). Generating a professional portfolio in the writing center: A hypertext tutor. *Computers and Composition*, *12*, 195–201.

DeWitt, Scott Lloyd. (1996). The current nature of hypertext research in computers and composition studies: An historical perspective. *Computers and Composition*, *13*, 69–84.

Dial, Mimi. (2003). *English 202 portfolio*. Retrieved February 15, 2003, from <http://people.clemson.edu/~mdial/index3.html>.

DiPardo, Anne, & DiPardo, Mike. (1990). Towards the metapersonal essay: Exploring the potential of hypertext in the composition class. *Computers and Composition*, *7*(3), 7–22.

Dobrin, Sid. (2001). A problem about writing "alternative discourses." In Pat Bizzell, Helen Fox, & Chris Schroeder (Eds.), *AltDiscourse* (pp. 57–68). Portsmouth, NJ: Heinemann.

Fischer, Katherine M. (1996). Down the yellow chip road: Hypertext portfolios in Oz. *Computers and Composition*, *13*, 169–183.

Forbes, Cheryl. (1996). Cowriting, overwriting, and overriding in portfolio land online. *Computers and Composition*, *13*, 195–206.

Golson, Emily. (1995). Student hypertexts: The perils and promises of paths not taken. *Computers and Composition*, *12*, 295–308.

Gruber, Sibylle. (2002). Power and the World Wide Web [special issue]. *Computers and Composition*, *19*(3).

Haas, Mark, & Gardner, Clinton. (1999). MOO in your face: Researching, designing, and programming a user-friendly interface. *Computers and Composition*, *16*, 341–358.

Halliday, Michael K., & Hasan, Ruqaiya. (1976). *Cohesion in English*. London: Longman.

Haswell, Richard. (1989). Textual research and coherence: Findings, intuition, application. *College English*, *51*, 305–319.

Huot, Brian, & Pula, Judy. (1993). A model of background influences on holistic raters. In Brian Huot, Michael Williamson, & Marcia Farr (Eds.), *Validating holistic scoring for writing assessment: Theoretical and empirical foundations* (pp. 237–266). Cresskill, NJ: Hampton Press.

Johnson-Eilola, Johndan. (1997). *Nostalgic angels: Rearticulating hypertext writing*. Norwood, NJ: Ablex.

Kies, Daniel. (2003). *Coherence in writing. The HyperTextBooks*. Retrieved February 15, 2003, from <http://papyr.com/hypertextbooks/engl_101/coherent.htm>.

Kremer, Brenda. (2001). So it was this beautiful night. In Pat Bizzell, Helen Fox, & Chris Schroeder (Eds.), *AltDiscourse* (pp. 127–139). Portsmouth, NJ: Heinemann.

Lanham, Richard. (1993). *The electronic word: Democracy, technology, and the arts*. Chicago: University of Chicago.

One Look Dictionary Search. (2003). *Entry for composition*. Retrieved August 10, 2003, from <http://www.onelook.com/?loc=lemma2&w=composition>.

Parker, Ian. (2001, May 28). Absolute PowerPoint. *New Yorker*, pp. 76–87.

Pedagogies in virtual spaces: Writing classes in the MOO. (1996). *Kairos*. Retrieved February 15, 2003, from <http://english.ttu.edu/kairos/1.2/index.html>.

Rouzie, Albert. (2000). The composition of dramatic experience: The play element in student electronic projects. *Computers and Composition*, *17*, 139–160.

Selfe, Cynthia L. (1989). Redefining literacy: The multi-layered grammar of computers. In Gail E. Hawisher & Cynthia L. Selfe (Eds.), *Critical perspectives on computers and composition studies* (pp. 3–15). New York: Teachers College Press.

Syverson, Peg. (1998). Patterns and process of reasoning in virtual worlds. In Christopher Landauer & Kirstie Bellman (Eds.), *Proceedings of the Virtual Worlds and Simulation Conference* (pp. 107–112). San Diego, CA: Society for Computer Simulation International. Retrieved June 6, 2003, from <http://www.cwrl.utexas.edu/~syverson/papers/vwsim98.html>.

Walter, John. (2002, May 22). C&W 2002: Reflections on teaching and learning in virtual spaces [Announcement]. Message posted to <techrhet@interversity.org>.

Web Portfolios. (2003). *Web portfolios: Enhancing the coherence of students' careers*. St. Olaf College Center for Integrative Studies. Retrieved February 15, 2003, from <http://www.stolaf.edu/depts/cis/web_portfolios.htm>.

Whithaus, Carl. (2002). Green squiggly lines: Evaluating student writing in computer-mediated environments. *Academic Writing*, *3*. Retrieved February 15, 2003, from <http://wac.colostate.edu/aw/articles/whithaus2002/>.

Wickliff, Greg, & Yancey, Kathleen Blake. (2001). The perils of creating a class website: It was the best of times, it was the. . . . *Computers and Composition*, *18*, 177–186.

Yancey, Kathleen Blake. (2001). *A matter of design: The uses of writing, speech, and the visual in learning across the curriculum*. Paper presented at the Fifth National Writing across the Curriculum Conference, Bloomington, IN.

Yancey, Kathleen Blake. (2002). The pleasures of digital discussions: Lessons, challenges, recommendations, and reflections. In Pamela Takayoshi & Brian Huot (Eds.), *Teaching writing with computers* (pp. 105–118). Boston: Houghton Mifflin.

Yancey, Kathleen Blake, & Huot, Brian. (Eds.). (1997). *Assessing writing across the curriculum: Diverse methods and practices*. Greenwich, CT: Ablex.