REFLECTION AND ELECTRONIC PORTFOLIOS

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Abstract

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Beginning with John Dewey's transfer-oriented definition of education as "that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience," this dissertation interrogates arguments in favor of electronic portfolios that rely on the claim that ePortfolios support reflection. Literature on reflection from the fields of composition studies, neuropsychology, and professional education connects Dewey's definition to the use of portfolios for supporting learning transfer through reflection. Various claims in support of ePortfolios are analyzed, with the specific element of the hyperlink being singled out for further examination as it relates to reflective thinking and writing. That examination reveals the historical development of a blind spot with respect to seeing hypertext only for its instructional value as reading material, rather than its epistemic value as a writing environment. Sample student ePortfolios from one community college and two universities are analyzed to identify elements of the institutional contexts that could account for the quantity and quality of reflection displayed in the sample ePortfolios. The conclusion is reached that when ePortfolio projects include explicit instruction in reflective hyperlink composition and explicit prompts for identity integration, the digital environment can support reflective transfer of learning.

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CHAPTER ONE

INTRODUCTION

What [one] has learned in the way of knowledge and skill
in one situation becomes an instrument of understanding
and dealing effectively with the situations which follow.
The process goes on as long as life and learning continue.

— John Dewey, *Experience and Education*, 42

This dissertation is about transfer. The vehicle I analyze for transfer is reflection; the vehicle I analyze for reflection is writing; the vehicle I analyze for reflective writing is the ePortfolio; and the vehicle I analyze for reflective writing *in* the ePortfolio is the hyperlink. But none of these vehicles would go anywhere worthwhile without transfer. Therefore, before proceeding in this introduction to give an overview of the discussions that follow in each of the chapters, I briefly explore the idea of transfer in order to build a Deweyan frame for the explorations to come.

In *Democracy and Education,* Dewey puts the development of habits at the nexus of growth and transfer, and he defines two different types of habits.

> Plasticity or the power to learn from experience means the formation of habits. Habits give control over the environment, power to utilize it for human purposes. Habits take the form both of habituation, or a general and persistent balance of organic activities with the surroundings, and of active capacities to readjust activity to meet new conditions. The former furnishes the background of growth; the latter constitute growing. Active habits involve thought, invention, and initiative in applying capacities to new aims. (62)

One such active habit, perhaps the most essential to the educational enterprise, is reflective thinking. Developing a reflective habit of mind is both a goal and a vehicle of education because it supports the transfer necessary for "applying capacities to new aims." Transfer is at the heart of Dewey's philosophy of education. In fact, it forms the core of his "technical definition of education":

> [Education] is that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience. […] The increment of meaning corresponds to the increased perception of the connections and continuities of the activities in which we are engaged. (*Democracy* 89-90)

I have much to say about this increased perception of connection and continuities; the remainder of this dissertation can be read as a series of exploratory loops out into the literature on making connections and back again to textual analysis application of the theories found along the way. But one crucially important mini-loop must be undertaken at the outset: the one that allows me to explicitly connect reflection to transfer.

Reflection and Transfer

Carol Rodgers' "Defining Reflection: Another Look at John Dewey and Reflective Thinking," makes a direct connection between Dewey's definition of education, relying as it does on an idea of transfer, and his notion of developing a reflective habit of mind. Rodgers' writes, "Reflection is that process of 'reconstruction and[1] reorganization of experience which adds to the meaning of experience'" (848).

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[1] Rodgers' typo, changing Dewey's "or" between "reconstruction" and "reorganization" to "and" opens up a very important issue to which I shall return in the dissertation's conclusion, at which point the import of the distinction will be more evident. For now, I'll just note that it is a very fortuitous typo, indeed.

Later in her essay, she unfolds steps within the process, but here is the basic definition of reflection, embedded within Dewey's definition of education.

In *The End of Composition Studies*, David Smit argues, "'transfer' is essential to how people learn in the first place" and insists that "one major way to improve instruction in writing is to *teach to the transfer*" (193, emphasis in original). He sees the conversations brought about through writing across the curriculum and writing in the disciplines initiatives as "the most effective way" for instructors to find out what their students are learning about writing in other classes and build upon those connections (193). Though I'm not at all opposed to WAC and WID initiatives (quite the opposite), another approach to teaching to the transfer that does not depend on such initiatives is readily available to composition instructors for use in their own classrooms: reflective writing. Nelms and Dively, while agreeing with Smits that more work must be done to link first-year composition to WAC and WID initiatives, reach a similar conclusion about the importance of reflective writing. They call for "including more metacognitive reflection on writing processes, on rhetoric, and on application of writing strategies" (228). A well-known vehicle for such metacognitive reflection is the portfolio cover letter.

One way of understanding how reflective writing of the kind found in portfolio cover letters can foster transfer of learning can be arrived at through studying the model provided by David Perkins and Gavriel Salomon in "Teaching for Transfer." Arguing that Shakespeare's "Summer's lease hath all too short a date" shows transfer, Perkins and Salomon write, "The world of landlords and lawyers falls into startling juxtaposition with the world of dazzling days, cumulus clouds, and warm breezes" (22). This is an example

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of what they call "high road transfer." High road transfer is opposed to low road transfer, which "reflects the automatic triggering of well-practiced routines in circumstances where there is considerable perceptual similarity to the original learning context," while "high road transfer depends on deliberate mindful abstraction of skill or knowledge from one context for application in another" (25). "[L]ow road transfer trades on the extensive overlap at the level of the superficial stimulus" (25), whereas "no superficial perceptual similarity exists between summer's end and leases to provoke a reflexive connection" (26). It's a fairly low road bit of transfer to map Perkins and Salomon's low road transfer onto Dewey's "habituation" and their high road transfer onto Dewey's "active capacities." The former support growth, while the latter accelerate and demonstrate it.

After giving examples to demonstrate why transfer sometimes doesn't occur because either low road or high road conditions have not been met, Perkins and Salomon suggest two techniques for promoting transfer: "hugging" and "bridging." "'Hugging' means teaching so as to better meet the resemblance conditions for low road transfer" (28). Asking teenagers to read *Romeo & Juliet* or *The Catcher in the Rye* relies on hugging to promote transfer of literary themes to everyday life because teenagers will presumably see their own concerns more readily in the teenaged characters of such works. Asking students "to make analogies that reach outside the immediate context" is a bridging tactic (29). Although most teachers use hugging and bridging tactics at least occasionally, Perkins and Salomon argue, "rarely is this done persistently and systematically enough to saturate the context of education with attention to transfer" (29).

They distinguish between forward-reaching and backward-reaching high road transfer. In the former, "one learns something and abstracts it in preparation for

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applications elsewhere" (26). In the latter, "one finds oneself in a problem situation, abstracts key characteristics from the situation, and reaches backward into one's experience for matches" (26). Both of these cognitive habits, Perkins and Salomon suggest, are teachable. Besides employing tactics of hugging and bridging in instruction, teachers "can help students develop skills of learning for transfer" by acquainting them with "the problem of transfer in itself and the tactics of bridging and hugging" (30).

Perkins and Salomon cite a meta-study (Belmont et al) of studies that had investigators teaching memory skills along with self-monitoring skills, "by which the learners examined their own behavior and thought about how to approach a task. This abstract focus on task demands—in effect a form of bridging—led to positive transfer results" (29). Belmont et al put it this way: "The more experience a person has in dealing with closely similar problems, the greater the likelihood that a new problem will yield to closely similar solutions. The more information [that person] has about his[/her] own cognitive functions and the ways they can be combined, the more powerful his[/her] approach to new situations may become" (149). If we ask students to reflect upon the writing they've included in their portfolios by building bridges across entire pieces and across passages embedded and processes represented in those pieces, we are providing them with opportunities to develop skills of "learning for transfer." If we then read those reflective pieces with an eye toward the "startling juxtaposition" Perkins and Salomon describe, we will be able to assess that development. The more we see students making startling juxtapositions in their reflective writing, the more confident we'll be that they can not only perform the relatively low road transfer from what they've learned in our classes to similar writing situations but, far more importantly in the long run, can transfer

along the high road what they've learned to the demands of dissimilar rhetorical situations of all sorts.

Nelms and Dively employ a survey and focus group methodology to determine what graduate teaching assistants emphasize in their composition courses and what writing-intensive course instructors from across the disciplines recognize as successes and failures of transfer from FYC to later academic writing contexts. In the course of their study, Nelms and Dively reach the conclusion that, among other things needing more investigation, reflection's role in transfer "deserve[s] the attention of our profession" (230). My research obviously intersects with theirs in that I am interested in reflection for transfer, as well. However, my approach is to look at student ePortfolios (in Chapter Five), rather than to survey or conduct focus groups with teachers. This is not to say that those methods do not reap rewards; rather, I am complementing their research by focusing on what students do, as opposed to what teachers say they do.

Chapter Summaries

Agreeing with Nelms and Dively's assessment that reflection's role in transfer deserves more attention, I undertake a cross-disciplinary review of the literature on reflective thinking and writing in Chapter Two. I begin with reflection's role in portfolios, as conceived by compositionists. I then reach back to pre-portfolio studies of reflection reported on by compositionists, which leads to a discussion of the shifting epistemologies that continue to shape the field of composition studies. That discussion is prelude to a tentative acceptance of scientific methodologies, an acceptance I must embrace in order to incorporate Daniel Schacter's neuropsychological theories of memory. In particular, his concept of elaborative encoding is a useful model for

understanding how transfer occurs at the level of memory retrieval and how reflection (through elaboration) supports retrieval. Schacter's theory of memory explains, physiologically, the process by which a repertoire is constructed. Donald Schön's epistemology of practice, reflection-in-action, explains the development and application of a repertoire from a cognitive perspective. A fundamental step in the process is the shift from a "success orientation" to a "theory orientation," which means viewing failures, as well as successes, as instructive, as constructive in the development of a theory about the experience. I argue that instructions for reflection can help students make this shift, which embroils me in a discussion with Kathleen Blake Yancey over the limitations of virtuality.

Where Yancey wants to draw a clear line between the safety of the classroom and the evaluative spaces outside of it, I see neither the clear line nor its pedagogical usefulness. I establish that the portfolio has been an assessment instrument since its introduction to the composition classroom and argue that an awareness of this rhetorical dimension of the portfolio (that is, composing for an audience of evaluators), coupled with explicit instructions for reflection, can help students navigate between two ineffective uses of reflective writing: generalizations about intent or execution; and paralyzing introspection. Yancey introduces a concern about the hegemony that can accompany directed reflection, and I respond by problematizing the notion that hegemony is by default a bad thing. From there I turn to Donna Qualley's distinction between reflexivity (based on an encounter with an other) and reflection (presented as a unidirectional thought process originating with the self). I argue that instructions for reflection serve as the other, thus allowing me to collapse the distinction between the two

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categories of thought. Furthermore, instructions could narrow the preparedness gap for students who do not arrive at college with experience in solipsistic, "authentic voice" writing. Chapter Two concludes with a discussion of co-constructed criteria for evaluation that could assist students in their development as reflective self-monitors but that also further challenges the notion that hegemony can be avoided in the classroom since the criteria students generate tends to reflect the criteria already articulated by the teacher.

Chapter Three reviews the literature on electronic portfolios, both from within the field of composition and from the broader academic discourse community. I discuss arguments in favor of ePortfolios, looking carefully at slippages of language in the proposed benefits of digital technology. Specifically, I make note of the fact that when Kristine Blair and Pamela Takayoshi blur distinctions between "allowing," "encouraging," and "forcing," they make a claim for ePortfolios, with respect to having a causal impact on organizational complexity, that is difficult, if not impossible, to support. I discuss briefly benefits associated with multimodality and multimediality but bracket them off as beyond the scope of this dissertation. I do so not because I find such benefits lacking in substance or impact but because I am not writing a dissertation that argues for ePortfolio proliferation. There are many persuasive arguments for ePortfolios. Broadening the definition of composition to include all of the possibilities for textuality opened up by digital technology, such as photography, animation, film, music, and interactivity is among the more obvious of those arguments. But that's someone else's dissertation to write. I have chosen to focus on the less glamorous but more intriguing (to me, at least) argument for ePortfolios based on their capacity to support reflection.

Two other purported benefits of ePortfolios are discussed in Chapter Three in an attempt to disentangle them from reflection as a benefit: worldware training and nontraditional résumé support. The worldware argument comes from outside of composition and can be a powerful argument indeed with many audiences. I embark on a meta-case study of a Microsoft case study in order to show how such arguments are constructed and how the software product stream ultimately undermines them. Because the software is definitely going to change, students do not need to know how to use specific software; they need to know how to learn how to use software (and how to interrogate its ideological assumptions).

The résumé argument comes from within composition and from without. The Conference on College Composition and Communication position statement, "Principles and Practices in Electronic Portfolios," draws connections between job search aspects of the ePortfolio and the development of rhetorical awareness. This comes closer to my own interest in helping composition students develop rhetorical awareness and a rhetorical repertoire via reflection than the worldware argument does, leading me to conclude that there's nothing inherently wrong with encouraging the use of ePortfolios based on an argument of workplace relevance; the nexus of that particular type of relevance, however, should be résumés, rather than worldware.

Returning to opportunities for reflection, I argue that the hyperlink is the quintessentially digital associative tool, making it the most important element of ePortfolios for my study. I conclude Chapter Three with a comparison of two portfolio assessments to look at the different affordances for reflection suggested by Washington State University's Junior Writing Portfolio reflective timed-essay prompt and Florida

State University's ePortfolio skills matrix. My findings from this largely hypothetical study indicate that despite the ease with which a hyperlink can make a connection between textual nodes or artifacts, the context within which the link is embedded could lead to an impoverishment of elaboration, which could in turn lead to an impoverishment of transfer-supporting reflection.

Recognizing that the FSU/WSU comparison only begins to scratch the surface of hyperlink affordances, I devote Chapter Four to a more thorough exploration of the hyperlink. Building on Ilana Snyder's definition of the hyperlink, I stipulate that when we talk about hypertext, we are also talking about hyperlinks; and when we talk about either, we're talking about electronic environments. These stipulations allow me to investigate theories of hypertext for their relevance to ePortfolios. Following a thread through the hypertext theory literature, I arrive at the Brown University Educational Software Project (ESP). Beeman et al's report on the ESP finds that the designers of a hypertext learning environment seemed to get more out of the experience than the students did (in terms of "a powerful reorganization of their own thinking" (81)), an effect the study authors attribute to increased time on task. I argue for an alternative explanation: active writing of hyperlinks produces more learning than passive reading of hypertexts.

I delve into hypertext's pre-history in order to trace what I perceive to be the development of a blind spot with regard to the benefits it offers to writers, as opposed to readers. In Vannevar Bush's 1945 description of his imaginary machine, the Memex, I find traces of an original concern for recording and reorganizing information in order to support the generation and elaboration of knowledge. But because Bush's vision also

extends to "a new profession of trail blazers, those who find delight in the task of establishing useful trails through the enormous mass of the common record" (4), a cataract between hypertext writers and readers begins to form. In his 1965 evolutionary list file (ELF) paper, Ted Nelson explicitly builds on Bush's idea and coins the term "hypertext" to describe the product of his proposed computer programming structure. Nelson appears to have recognized the emphasis on production in Bush's vision, arguing that the system constructed in its image should be "an adjunct to creativity" (84). But apparently feeling compelled to suggest commercial applications of his file structure, Nelson offers the idea of educational hypertexts as more "motivation[al]" reading material, effectively turning Bush's cataract into a full-blown blind spot. Then, as now, there's a lot of money to be made in producing materials for educational consumption. A familiar market model of experts producing materials for consumption by novices fed the growth of the blind spot. Cataracts and blind spots notwithstanding, I conclude my history of the hyperlink section by pointing out that since Nelson believed it was the user's "job to draw the connections, not the machine's" (93), from its theoretical inception, hypertext was envisioned as a medium for active composition, and only secondarily for passive reception.

Uncomfortable with the untheorized binary opposition between reading and writing I find myself working with, I proceed to read Cognitive Flexibility Theory, which provides a curricular design model for fostering learning transfer, and a study based on the model of hypertext learning environments, in order to engage interpretive theorists such as Roland Barthes and Stanley Fish who might challenge the existence of that binary opposition between reading and writing. The study, reported on by Jacobson and Spiro,

found a positive, but delayed, transfer effect in students who worked with a more complexly hyperlinked set of instructional materials. I argue that the delay points to an observable distinction between the cognitive processes involved in reading and writing.

Having satisfied myself that a sufficient distinction exists between reading and writing, I turn to Scott Lloyd DeWitt's "Defining Links," which describes a classroom study he conducted for his dissertation. In his report of the study, DeWitt claims, "The most significant finding is that students, when creating links, spent a considerable amount of time rereading their own writing in order to make purposeful connections within their [hypercard] stacks" (146-7). I see this as a salutary outcome of writing hyperlinks. I also argue that DeWitt's distinction between "gratuitous" and "purposeful" hyperlinks could support assessment of ePortfolio reflections for evidence of a hypertext environment's impact on student learning. Gratuitous links, such as persistent navigation links, may demonstrate a concern for the reader's experience, but they do not provide convincing evidence of the reconstructing and reorganizing of experience that Rodgers claims to be an essential aspect of reflection (and Dewey of education). Purposeful links, on the other hand, can be read as evidence of reconstructing and reorganizing of experience.

Chapter Four concludes with a discussion of Nicholas Burbules' notion of hyperlinks functioning as rhetorical tropes. Burbules is primarily concerned with teaching students to analyze links for their tropic functionality in order to help them develop as critical hyperreaders. But thinking about links in this way can also help students to write hyperlinks in ways that support reflection. I work through Burbules' "menagerie" of rhetorical link types by applying each in its turn to the FSU skills matrix model of ePortfolio composition. Although this synthesis sometimes highlights

limitations of the model, my intent is not to make a strawman of the skills matrix.

Indeed, I find the model useful not only for explicating Burbules' ideas about hyperlinks

but also for the ways in which it helps me think through the scenarios in which guidance

for ePortfolio composition might support reflection or stifle it.

Chapter Five provides a venue for applying the theories of reflection, ePortfolios,

and hyperlinks that are explored in preceding chapters. I employ a thick description, case

study methodology, adopted from the cultural anthropologist Clifford Geertz, reading

sample student ePortfolios within their institutional contexts in order to draw inferences

about the compositional choices their authors are making. I analyze portfolios from

LaGuardia Community College, Indiana University-Purdue University Indianapolis, and

Penn State University. I do not find any examples from the LaGuardia galleries of

student-authored ePortfolios in which students reflect specifically on their use of

hyperlinks. However, it becomes apparent that LaGuardia Community College is

nonetheless reaping some of the rewards of a critical hyperliteracy through the

combination of a Blackboard ePortfolio platform and a directive set of heuristic prompts

for content generation and process reflection. Students at LaGuardia are integrating

aspects of their identities and making connections across their educational experiences in

ways that would theoretically support learning transfer. The IUPUI Epsilen Environment

does not include prompts for content generation or reflective integration of identity facets

or educational experiences. And, perhaps as a result, much less reflection appears in the

sample Epsilen ePortfolios that I analyze. The Epsilen counter-example calls into

question assumptions of a technological determinism variety that would ascribe efficacy,

in terms of encouraging or entailing the making of connections, to ePortfolio platforms,

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simply by virtue of their existence within digital environments. Penn State offers to ePortfolio composers an exceptionally well-written set of heuristics and instructions for reflective writing, including reflective link annotation. Analyzing examples from the University's Web site, I find mixed evidence of students' ability to take full advantage of these support materials.

Seemingly having reached a methodological impasse, I turn from thick description to quantitatively-oriented reports from LaGuardia Community College and Northern Illinois University on their respective ePortfolio projects. Although LaGuardia finds statistically-significant increases in ePortfolio composing students' self-reported levels of engagement and in their course passing rates, the college does not find an entirely clear connection between these beneficial outcomes and reflection. I contend that one cannot reflect effectively without being engaged, and the connections articulated through reflection must lead to an increased perception of engagement with the experiences being connected. NIU finds that "better writers also tended to be better reflectors overall" (2), but is not able to document a connection between an increase in reflective awareness and improvement in writing ability, at least within a one-semester time frame. I contend that a longer time frame might be necessary to detect such a correlation because reflection is a complex mental process with complex effects.

My conclusion synthesizes the findings from my theoretical and analytical explorations in order to suggest pedagogical implications and areas in need of further research. Those explorations do not uncover indisputable evidence that ePortfolios guarantee increases in the quantity or quality of reflective thinking on the part of student composers. Therefore, I do not conclude that ePortfolios must be a part of a composition

curriculum (or any other curriculum for that matter) or that educators committed to helping students develop reflective thinking habits must take advantage of the affordances of ePortfolio technology in order to maximize their effectiveness.

That said, those affordances are of a highly seductive nature. The opportunities for worldware training, nontraditional résumé design, and development of an expanded notion of literacy are more or less readily demonstrable. And these opportunities *will be* demonstrated by ePortfolio advocates, including those with a particular ePortfolio platform to sell. It's therefore not entirely fatalistic for educators who have not yet been seduced to prepare themselves nonetheless for a marriage of portfolio and digital technologies. The theoretical and textual explorations recorded in this dissertation suggest approaches to ePortfolio project design that make use of the technology's potential to support learning transfer through reflective writing. Alone, such potential may not justify the necessary investment of resources entailed in adoption of an ePortfolio project. But if the resources are already being invested, designing the project with an eye toward encouraging reflection can only contribute to the project's beneficial effects on student learning.

In the conclusion, I revisit Dewey's definition of education and Rodgers' typo in order to argue for the value of a clear distinction between reconstructing and reorganizing. This in turn prompts a revisiting of the issue of hegemony, which itself leads to a discussion of motivation. Dewey's reflective process is a problem-solving one, and I argue that explicitly calling for articulation of goals in ePortfolios helps students make personally meaningful problems out of their composition. Beyond that, prompting students to integrate their personal goals opens the door to the motivating rhetorical

problem of presenting oneself to a variety of audiences. Because digital technology

facilitates linking to Web sites that represent personal interests and different aspects of

one's identity, because it readily supports the inclusion of images, audio files, and visual

design elements, students can address this rhetorical problem with a copious array of

materials and approaches. Extrapolating from Dewey's theories of reflection and what

motivates it, I suggest that students would be motivated to address this problem of self-

representation, which would in turn motivate them to reflect on their progress. This

allows tentative acceptance of the argument in favor of ePortfolios based on their

capacity to support reflective thinking.

CHAPTER TWO

REFLECTION

> To reflect is to look back over what has been done so as to
> extract the net meanings which are the capital stock for
> intelligent dealing with further experiences. It is the heart
> of intellectual organization and of the disciplined mind.
>
> — John Dewey, *Experience and Education*, 110

This dissertation explores reflection in electronic portfolios. Because ePortfolios open up possibilities for multimedia and multimodal composition, because their digital nature makes them portable for composers and accessible for assessors, because they sound more 21st Century than plain old portfolios do, and because corporations like Microsoft want to sell platforms for them like SharePoint, the ePortfolio aspect of my two-headed subject certainly demands, and receives, substantial attention. But before looking more closely at ePortfolios, we need to spend some time exploring the literature on reflective writing, because, for me, the most important questions about ePortfolios are how and how well they facilitate reflection.

Having been a staple of composition practice for a generation now, portfolios have taken on an air of ideological orthodoxy. When I was on the job market in 2004, I was surprised during an interview by an English department chair who asked why I use portfolios in the teaching of writing. I searched my memory, quickly, for snippets of theoretical rationales I had picked up in graduate school, cobbled something together about reflection making learning portable and available for assessment, and got the part-time, adjunct faculty position. The experience has stayed with me, and as I find myself re-entering the job market, the question once again takes on urgency. And with the

growth of ePortfolios, and the economic resources often requested for their support, the theoretical underpinnings of portfolio orthodoxy must be revisited for reasons beyond my own employability. So why *do* we use portfolios in the teaching of writing?

The Argument for Portfolios

The argument for portfolios is multifaceted. Liz Hamp-Lyons and Bill Condon assert that "the principal object of using portfolios is to enable assessors to survey a broader range of performances, produced in the writer's normal way, under the writer's usual circumstances" (32-3). Assessing something so complex as a student's set of writing abilities based on a single performance or a single type of performance may be expedient, but it purchases that expedience at an unacceptable cost by rendering the generalizability of the results of the assessment highly dubious. Furthermore, if we believe that learning can occur as a result of participating in a course of study, it makes little sense to reward or deny credit for that learning before it has been given a chance to occur. Irwin Weiser explains the process orientation toward writing that underlies this line of thinking for many compositionists.

> Whereas in some science or math or social science courses there is a fairly discrete content to be studied and which students can often be tested on in similarly discrete chunks, students' learning in writing courses can best be evaluated at the end of the course after they have had as much time as the calendar allows to practice, get feedback, and improve. We expect, in fact, that students who are working at their writing, who are spending time planning, writing and getting responses to drafts, and revising and editing, will be better writers at the end of the semester than they were at the

beginning; and thus we assume that the most accurate and fair measure of what they have learned is one based on their writing at the end. (294-5)

We can and must respond to student work in progress throughout the term, but evaluation of that progress must occur at the end of the term. How else can we point to a course grade and honestly say that it represents what a student can do and has done after taking that course?

But that argument concerns itself only with the summative judgment of a course grade. While grades are perhaps necessary (or at least convenient) bits of data for the decision making that occurs based on a student's academic transcript, we bring into play only a fraction of their potential when we limit them to marks of summative judgment. If we have to give a grade for something, we should make that something a tool of formative assessment. The portfolio can be such a tool. Defining the portfolio as possessing three essential characteristics (collection, reflection, and selection), Hamp-Lyons and Condon write, "For a writer to learn from the work she or he has produced and collected, reflection is necessary. For a reader to learn from reading the student's work, the student must reflect on that work" (119). The reflective cover letter then becomes a document of exceeding importance.[2] For the reader, it provides a roadmap through the portfolio, offering metacommentary to guide the reader to a reading of the significance of what the writer has assembled that is as close as possible to the writer's own reading of that significance. This guidance offers the not immaterial benefit of facilitating the speed with which a reader can fairly make an evaluative decision about the portfolio.

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[2] Hamp-Lyons and Condon go so far as to assert that "without reflection all we have is simply a pile, or a large folder" (119).

While those are indeed valuable functions of the reflective cover letter, they are vastly surpassed in importance by what the cover letter does for the writer. As Ed White argues, "It reinforces the entire point of portfolios by making the assessor of first resort the student submitting the portfolio, who, in the reflective letter, performs the self-assessment that is the true goal of all academic assessment" (594). We may dispute the notion that self-assessment is the true goal of all academic assessment, but it's hardly a new one. As Quintilian asked two thousand years ago in Book II of his *Institutio Oratoria*, "For what object have we in teaching them, but that they may not always require to be taught?" (109). There are at least two ways of reading Quintilian's rhetorical question, and I want to quickly argue for the reading that turns the question into evidence in support of my point.

He may have been thinking about the kind of retention of discrete bits of knowledge that Weiser describes as the goal of instruction in math and the sciences. He has already stated in Book I that "the elements of learning depend on the memory alone" (15). So one way to read his question would be to see it as a reduction of the object of rhetorical education to a finite process of successful transfer of discrete bits of knowledge from instructor to student. Rote memorization of stock discursive forms is indeed one of his methods, but it's a method explicitly limited to early stages.

> It is a service to boys at an early age, when their speech is but just
> commenced, to repeat what they have heard in order to improve their
> faculty of speaking. Let them accordingly be made, and with very good
> reason, to go over their stories again, and to pursue them from the middle,
> either backward or forward; but let this be done only while they are still at

the knees of their teachers, and, as they can do nothing else, are beginning

to connect words and things, that they may thus strengthen their

memories. (101)

The value of this pedagogical method is in the strengthening of the faculty of memory,

not in the actual retention of any particular content. Quintilian clearly had little respect

for his students' compositional prowess at this stage of their development, so he would

certainly not have found their early compositions to be of any future usefulness.

Having expanded the capacity of their memories, the boys were ready to benefit

from being lectured to. But again, the value was not in retaining verbatim the speeches

their instructors were reading to them. The goal was to develop a critical faculty. While

reading, the lecturer would stop and point out the good and bad bits in a famous speech.

Nor will the preceptor be under the obligation merely to teach these

things, but frequently to ask questions upon them, and try the judgment of

his pupils. Thus carelessness will not come upon them while they listen,

nor will the instructions that shall be given fail to enter their ears. Thus,

they will at the same time be conducted to the end which is sought in this

exercise, namely that they themselves may conceive and understand. For

what object have we in teaching them, but that they may not always

require to be taught? (109)

So we see that in context, Quintilian's rhetorical question is looking forward to the

moments when students will need to evaluate texts for themselves, rather than backward

to any particular texts. As Aristotle had argued centuries earlier, "it is possible to inquire

the reason why some speakers succeed through practice and others spontaneously; and

every one will at once agree that such an inquiry is the function of an art" (19). Rhetoric

is an art (a spurious one, no less, according to Plato), not a science. It's about developing

faculties for practice, not isolating discrete chunks of acontextual knowledge. Students

need to be able to assess their own performances with a degree of sophistication and

accuracy, a fact teachers have been noticing for a very long time. The writing portfolio,

as constituted in most composition classroom applications with a reflective writing

component, addresses this need by providing students with a chance to reflect on their

work and in so doing, practice the reflective process of self-assessment.

The Centrality of Reflection

Much more recently, but still before the portfolio made its triumphant march into

the college composition classroom, compositionists doing research in a cognitive science

mode were honing in on the centrality of reflection in the developmental processes of

academic writers. In 1976, Richard Beach published his findings from a home-grown

research project, what he termed an "informal, exploratory study" into a problem that

proponents of process-based writing instruction had already discovered, one that

continues to trouble composition instructors to this day: resistance to revision. Beach

opens "Self-Evaluation Strategies of Extensive Revisers and Nonrevisers" with what had

apparently already become a well-known refrain of process-oriented writing teachers: "'I

spend hours going over students' papers with them, but they still seem unwilling to revise

them effectively'" (160). He attributes this phenomenon to a deficiency in the faculty

whose development Quintilian identifies as the object of teaching.

> The fact that students often do not revise their drafts reflects their inability
>
> to effectively evaluate their own writing. The ability to effectively self-

evaluate involves a willingness to be self-critical: to describe and judge

one's writing from a detached, non-egocentric perspective and to trust

one's own criteria for revising as valid. Because students learn to become

dependent on the teacher's evaluation and because they are rarely given

assistance in formal, systematic self-evaluation, many students do not

develop the ability to critically evaluate their own writing. An important

goal of composition instruction should be to encourage a change in

students' thinking about their writing. (160)

Setting aside for a moment the problem of acquiring a set of criteria that one can trust as

being valid, the move Beach makes from identifying the problem to calling for a shift in

compositionists' focus from the revision (or lack thereof) that students do to the cognitive

process he identifies as a necessary precursor for that revision is a crucial bridge between

cognitively-oriented composition research and the importance of reflective writing in

portfolio pedagogy.

A few years later, but still before we'd all crossed that bridge to Portfolioland,

Sharon Pianko responded to Beach's call with "Reflection: A Critical Component of the

Composing Process." Firmly embracing the positivistic methodology of cognitive

science, Pianko uses evidence from a protocol study of ten remedial and seven traditional

students to make the kind of sweeping generalizations our society tends to accept from

practicing scientists.

It is reflection which stimulates the growth of consciousness in students

about the numerous mental and linguistic strategies they command and

about the many lexical, syntactical, organizational choices they make–

many of which occur simultaneously–during the act of composing. The

ability to reflect on what is being written seems to be the essence of the

difference between able and not so able writers from their initial writing

experiences onward. (277)

Quintilian's goal of helping students to reach that point at which "they may not always

require to be taught" seemed by the late 1970s to rely upon developing the cognitive

process of reflection. Pianko draws the pedagogical implications for us in her

conclusion.

If teachers are to affect a positive change in their students' written

products, it is evident that they must change their focus from evaluating

and correcting finished papers to helping students expand and elaborate

qualitatively the stages of their composing process; they must, in short,

help their students become more reflective writers. (278)

It's important and interesting to note that Beach is looking at revision across drafts of the

same paper while Pianko is looking at the process of composing a single draft, yet they

both make the leap, quite deftly, to a more generalized writing ability that presumably

would carry over to future performances. A lifetime of teaching allowed Quintilian to

develop the confidence to make such a leap; the application of quasi-scientific research

methods to the study of a few dozen students' writing allowed Beach and Pianko to join

him in that leap.[3]

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[3] Pianko studied 17 students, while Beach studied 26. To be fair, Beach readily acknowledges limits of generalizability to other students: "Because these students were part of an intact group, any conclusions drawn from the data should apply only to this group" (160). This awareness apparently did not extend to concerns about generalizing from the performance of his students during his "informal, exploratory study" to general "abilities."

Shifting Epistemologies

One way or another, in one era and another, educators rely on the idea that a sample of writing is a window through which we can peer into a student's writing ability. It's such a commonsensical notion that it's hardly surprising to see it resurface across vast shifts in time and epistemology. By the late 1980s, European discourse theory had fed a shift toward social constructionism, in the humanities at least, that was very skeptical about the positivism driving cognitive science research into "the writing process." An example is Lester Faigley's "Judging Writing, Judging Selves." Faigley sets out to interrogate what it is that teachers value when they identify student writing as good. He's casually dismissive of the scientistic work of the previous generation: "College writing research in the disciplinary period which began, roughly, in the mid 1960s has not told us much about exactly what it is that teachers value in student writing. Researchers who have used statistical methodologies to address this question have thrown little light on the issue" (395). Instead, he imports theories from Althusser, Bourdieu, and Foucault, among others, and performs some deft literary criticism on a collection of best student essays. He worries about the uncritical pedagogies of writing teachers who privilege honesty and authentic voice without recognizing the narrow range of authentic voices they're willing to embrace.

Faigley also draws a direct connection between these well-meaning expressivists of the late 20th Century who often want to "empower" students by encouraging them to write autobiographically and the elitists of the early 20th Century who unabashedly used student writing samples to sort the insiders from the outsiders. Closely reading the College Entrance Examination Board's report of its 1929 English exam, Faigley pulls out

a telling comment on one of the student responses: "Whatever the study of literature has done for him, there is no evidence here that it has formed his taste or given him even slight reflective power" (401). Because the student had chosen to write about a popular text along with a novel by Scott and some poems by Wordsworth, he had revealed his lack of couth and blown his chance at getting into a prestigious college. Slight reflective power, indeed. Faigley speculates that the readers saw this as a "sign of a broader 'withdrawal of adequate consideration of the classics'" (401). Perhaps. But I would argue that if it was a sign of anything, it was a sign of a lack of adequate consideration of audience, a subject I return to later in this chapter.

Faigley concludes with a gesture that beckons in another major shift in composition, from expressivism to critical pedagogies of the self. He argues that it's possible to "teach our students to analyze cultural definitions of the self, to understand how historically these definitions are created in discourse, and to recognize how definitions of the self are involved in the configuration of relations of power" (411). The ghost of Michel Foucault floats through that passage, with its allusions to power relations and their embodiment in discourse. From introduction to conclusion, in this one article, we can read an epistemological shift (driving a pedagogical shift) that itself is a retreat from one nexus of discursive power toward the embrace of another.[4] Compositionists need no longer seek the barren fruit of the tree of science in their quest for disciplinary status; they can instead look in house, applying the same poststructuralist

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[4] I don't mean to base my historicizing of an epistemological shift on one article alone. I find Faigley's article to be a representative microcosm of the larger epistemological shift in composition studies, a shift alluded to in 2000 by Jane Bowman Smith and Kathleen Blake Yancey in the preface to their edited anthology, *Self-Assessment and Development in Writing: A Collaborative Inquiry*: "[E]nthusiasm for composing process theory and research seems largely replaced by devotion to cultural studies" (ix).

theories to their work that have revitalized the careers of their literary critic colleagues across the hall.

Shortly after Faigley's article appeared, Carol Berkenkotter's "Paradigm Debates, Turf Wars, and the Conduct of Sociocognitive Inquiry in Composition" documented the shifts in epistemological stance for readers of *College Composition and Communication*. Announcing her plan to "examine from historical, social, and methodological perspectives the roots of some disciplinary quarrels that have polarized our thinking in composition studies, and have thus acted as obstacles to reading and evaluating research and to training graduate students to conduct multimodal inquiry" (151), Berkenkotter hints at her preference for a both/and approach. She goes on to make that preference quite clear by writing, "It is crucial that as scholars, researchers, and teachers we strive to maintain a climate of healthy eclecticism" (159).

Between World War II and the re-birth of composition as a discipline in the 1960s, she suggests that a "logical-positivist world view can be seen to have had an impact on the conduct of educational research as the result of many researchers' reading the monograph *Experimental and Quasi-Experimental Designs for Research*," which "argued that science was the royal road to knowledge and that educational researchers needed to be considerably more fastidious and precise in constructing their research designs if they were to duplicate the rigor of their colleagues in physics and biology" (153). To be fair, the authors of that apparently quite influential little book, Donald Campbell and Julian Stanley, were not entirely dismissive of non-scientific ways of knowing; they just saw them as inferior in an evolutionary way. They acknowledge "considerable respect for tradition in teaching practice" because "the customs which have

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emerged may represent a valuable and tested subset of all possible practices" (4). Unfortunately, "the selective, cutting edge of this process of evolution is very imprecise in the natural setting," a problem whose solution is scientific experimentation, which "is not in itself viewed as a source of ideas necessarily contradictory to traditional wisdom. It is rather a refining process superimposed upon the probably valuable cumulations of wise practice" (4).

Perhaps it was those little backhanded compliments about "customs" being "probably valuable." Or perhaps it was the deliberate, methodical pace of science, which Campbell and Stanley acknowledge to be an "inconvenience to the nine-month schedule for a Ph.D. dissertation" (31).[5] Or maybe it was the paucity of consistent findings that Faigley lamented. In any event, as alluring as the promise of disciplinary status was for those who would don the mantle of scientist, after about a generation, many were walking away. Berkenkotter documents the turning away I recognized in Faigley's article, describing "humanists' repudiation of positivist assumptions and their concomitant acceptance of a post-modernist view of science, especially among faculty in departments of English" (154). She also notes that "for historical and economic reasons, composition instruction has been conducted within English departments as a bread-and-butter course, the enrollment of which has often supported specialized upper-division and graduate courses in literary studies," acknowledging "the asymmetrical relationship between composition and literature faculty," but quite optimistically arguing that "this relationship is being altered" (154). She sees signs of this narrowing of the status gap in the

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[5] Agitating for more longitudinal studies, Campbell and Stanley proclaim, "Let the necessarily hurried dissertations be done on other topics" (66). I read this as permission to postpone my own longitudinal studies until *after* this dissertation is complete, acknowledging all the while that such an approach could be very valuable to my subject.

appearance of graduate programs in composition and rhetoric and in the proliferation of composition journals.

Progress has no doubt been made, but my own experience tells me there is room for more. Beginning my doctoral program in Rhetoric and Composition in 2005, fifteen years after Berkenkotter expressed her optimism, the first two people I met on campus were literary scholars who expressed their resentment that service-oriented folks like myself were going to be employable after their studies. They assured me that no grudge was being held, however, since they had the consolation of pursuing meaningful knowledge.

That same year, Richard Haswell's "NCTE/CCCC's Recent War on Scholarship" appeared, systematically documenting the continuing skepticism among compositionists toward things scientistic. Berkenkotter refers to it as a "deep fracture that lies below the differences in perspective between the empirically and hermeneutically oriented" (165). Haswell resists the label of empiricism, arguing that it "has so often been used to set up false oppositions with terms *ethnographic, qualitative, grounded,* and *naturalistic*" (201). He champions instead RAD (replicable, aggregable, data-driven) scholarship, which he does not view as antithetical to socially-oriented scholarship: "RAD scholarship may be feminist, empirical, ethnomethodological, contextual, action, liberatory, or critical" (202). However, after looking for examples of RAD scholarship in the flagship journals (*College English*, *College Composition and Communication*, and *Research in the Teaching of English*) and bibliographies of the National Council of Teachers of English and the Conference on College Composition and Communication and finding what he calls an "unsettling" paucity, he asks, despairingly, "Will these trends, if they continue,

lead to the eventual disappearance of college composition as a legitimate field of study? As a professional discipline with professional privileges and professional clout, will college composition also come and go like a fad?" (217-18). In this despair, we can read, quite clearly I believe, a still very real concern over disciplinary status that prompts a call to turn back to scientific methodologies and the academic cache they promise.

Despite the troublesome tendency of scientists to be persuaded by the rigorousness of their methodologies into making overgeneralizations (e.g., seeing a construct as complex and elusive as a student's writing ability in a single sample), they occasionally do come up with generative findings. Indeed, Berkenkotter argues that "it's important to remember that researchers trained in empirical traditions are not inclined to generalize beyond what their data warrants" (163). A scientific, or at least scientistic, approach led Beach and Pianko to conclude that reflective writing is at the core of effective writing pedagogy. Denis Phillips describes a "post-positivist" epistemology as one for which "no knowledge is so firmly established, or is based on such unshakable foundations, that it is immune from the possibility of future overthrow" (qtd. in Berkenkotter 165). It's an approach founded on a radical humility that many researchers would surely find unsettling, particularly those of a positivist persuasion, but it gives us an opening into the kind of epistemological ecumenicalism that both Berkenkotter and Haswell preach. Emphasizing the temporal aspect of inquiry, Phillips' notion of post-positivism lets us hold onto findings, even those "discovered" by positivistic scientists, delicately, in order to see what we can build with them, conscious all the while that we may be building a house of cards. But if we really embrace the concept, there's really nothing to fear, since that's all any house could ever be, anyway.

A Theory of Memory

I've already placed a pair of such cards (Beach and Pianko) at the foundation of

my own inquiry, and I'll now add a third. The psychologist Daniel Schacter, an expert on

human memory who has worked with brain injury patients, spends much of his

intellectual energy researching memory distortion. He announces his membership in

discourse communities that operate with all of the cultural capital science has to offer

when he writes, "For much of my career I have attempted to link cognitive psychology,

clinical observations, and neuroscience into a cohesive approach to understanding

memory" (7). And yet he's a particularly useful scientist for my inquiry because his

science has led him to findings about memory that have a distinctly constructionist air

about them. In a post-positivistic mode, he proclaims, "We now know enough about how

memories are stored and retrieved to demolish [a] long-standing myth: that memories are

passive or literal recordings of reality" (5). That "we now know" could be read as the

kind of evolutionary smugness some might detect in Campbell and Stanley, but it could

just as easily be read as reflective of a temporally-bound epistemology that recognizes

that what we now know could someday be demolished as yet another myth.

Basing his conclusions on a combination of findings from depth of processing

experiments and brain scans, Schacter argues, "If we want to improve our chances of

remembering an incident or learning a fact, we need to make sure that we carry out

elaborative encoding by reflecting on the information and relating it to other things we

already know" (45). As a writing instructor, I ultimately put all of my professional raison

d'être eggs in a basket of portability. If I didn't believe that students would carry forward

beyond the semester accessible memories of the experiences they had while participating

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in my composition courses, I would leave the profession immediately. Composition students are not building widgits in a writing classroom; the product of their labor is a (hopefully) transferable expansion of their rhetorical repertoires. And according to Schacter, such transferability relies on elaborative encoding, which itself depends on reflection and connection.

He gives an example from a typical depth of processing experiment. The researcher uses two different types of orienting task to discover which type leads to greater recall of a series of items.

> For example, I could induce you to carry out a deep, semantic encoding of target words by asking for a yes or no answer to questions such as, "Is *shirt* a type of clothing?" You cannot answer this question accurately without thinking about the meaning of the word *shirt*. To induce you to engage in shallow, nonsemantic encoding of the word, I could ask you to answer a question such as, "Does *shirt* contain more vowels or more consonants?" You can answer this question easily without attending to the meaning of the word. If I later test your ability to recollect *shirt* and other words on the list, I can be fairly confident that you will be able to recall or recognize many of the words that you encoded semantically and few of the words that you encoded nonsemantically. (44)

The first type of orienting task forces the subject to pay attention to meaning, while the second type doesn't. But as Schacter points out, the conclusion isn't simply that we remember meaningful things better than nonmeaningful things. The encoding must also be elaborative, attaching the item to be remembered to preexisting knowledge. If the

researcher asks, "Is *shirt* a type of insect?" the subject must think about the meaning of the word, but will not be more likely to retain the word because the encoding is not elaborative (45). Whereas "Is *shirt* a type of clothing?" allows the subject to think about the meaning of the word *and* attach it to a preexisting schema (clothing), the insect question doesn't facilitate that kind of connection, and thus recall fails.

Schacter points to brain scan experiments to support the depth of processing experiments like the one with the shirt questions. Positron emission tomography (PET) and functional magnetic resonance imaging (MRI) scans reveal changes in blood flow across regions of the brain while a subject performs cognitive tasks; more blood to a region indicates that part of the brain is working harder during that particular task (52). And sure enough, during deep, elaborative encoding tasks, as opposed to shallow, nonelaborative tasks, PET and functional MRI tests show larger increases in blood flow to a very specific region of the brain: the left inferior prefrontal cortex. Patients who have incurred damage to that part of the brain "often have encoding problems: they fail to organize and categorize new information as it comes into memory" (55). This appears to be strong biological evidence for a differential effect on memory of elaborative encoding tasks versus nonelaborative encoding tasks.

But the whole idea of biological evidence for a cognitive process smacks disturbingly of positivism. It brings to mind the horrible early years of psychological testing, of Francis Galton's idea of eugenics, which he said must "leave morals as far as possible out of the discussion" (qtd. in Elliot, 34). It's one thing to build a house of cards in the course of an inquiry; it's another thing altogether to use cards so vile that one finds himself hoping the house will fall down before he finishes building it. Building a model

of how *all* minds work is risky business because doing so forecloses the possibilities of social and cultural influence that cannot be so easily foreclosed. Berkenkotter applies the work of Shirley Brice Heath, Anne Haas Dyson, and Shulz, Florio, and Erickson to challenge the Flower and Hayes model of the cognitive process of writing, concluding that "viewed synoptically, the studies eloquently make the case that 'task environment' cannot be conceived of independently from 'long-term memory' and that 'process' is rich with social and cultural variables" (161). I would be loath to build a theory of reflective writing on a foundation that ignored such variables.

Fortunately, Schacter's description of elaborative encoding, while supported by empirical evidence from the scientific measurements of PET scans, functional MRIs, psychological experiments, and clinical observations of brain-damaged patients, also has a built-in recognition of the importance of social and cultural influences on memory. Elaborative encoding is not simply about "reflecting on the information" but also about "relating it to other things we already know" (45). And of course those "things we already know" are thoroughly intertwined with our lived experience, which is always mediated by the people around us. As Schacter points out, "we cannot separate our memories of the ongoing events of our lives from what has happened to us previously" (5). This is because "experiences are encoded by brain networks whose connections have already been shaped by previous encounters with the world" (6).

The idea of brain networks is at the heart of the modern idea of the engram. Schacter cites Richard Semon's 1904 *Die Mneme* as including the first appearance of the term engram, by which Semon referred to the "enduring change in the nervous system

(the 'memory trace') that conserves the effects of experience across time" (57).[6] If we

think of engrams as tape recordings that we can play back, we may be able to bypass

social and cultural influences on memory. However, the process doesn't seem to work

that way. "Neuroscientists believe that the brain records an event by strengthening the

connections between groups of neurons that participate in encoding the experience"

(Schacter 59). However, the term "records" is a bit misleading because it connotes

objectively capturing an experience in the outside world and flawlessly replicating it in

some sort of storage material. Instead, "a neural network combines information in the

present environment with patterns that have been stored in the past, and the resulting

mixture of the two is what the network remembers. […] When we remember, we

complete a pattern with the best match available in memory; we do not shine a spotlight

on a stored picture" (71). As Schacter explains, "a memory is an emergent property of

the cue and the engram" (71). Thus, memories are fundamentally constructed, rather than

replayed. And we, and the people around us, are involved in that construction.[7]

Successful retrieval of memories turns out to be a matter of matching cues to

engrams. Schacter speculates, "All else being equal, elaborative encoding yields higher

levels of explicit memory than nonelaborative encoding, probably because a rich and

elaborate encoding is accessible to a broad range of retrieval cues, whereas a shallow,

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[6] Schacter explains that although Karl Lashley's 1950 paper, "In Search of the Engram" "contains the first
prominent invocation of the term *engram*," causing most scientists to believe it was a coinage of Lashley's,
it was actually Semon's idea. The confusion was helped along because Lashley "did not even cite, much
less discuss, Semon's prior use of the term" (58). Perhaps he forgot.

[7] At the risk of belaboring the point, Eviatar Zerubavel's ideas about social memory further challenge the
idea of memory as either biologically globalized or, conversely, idiosyncratically individualized: "Not only
does our social environment influence the way we mentally process the present, it also affects the way we
remember the past. Like the present, the past is to some extent also part of a social reality that, while far
from being absolutely objective, nonetheless transcends our own subjectivity and is shared by others
around us" (81).

more impoverished encoding can be elicited only by a few perfectly matched cues" (63). Intentionally connecting new experiences (and information) with preexisting knowledge increases the chances for cues to combine with engrams and produce memories because there are more connection points. And this takes us to the idea of building a repertoire.

> Building up the extensive knowledge base that is required to support the supermemory of a skilled expert does not occur overnight. […] The knowledge base […] provides the basis for a highly refined and powerful form of elaborative encoding that enables experts to pick out key information efficiently and to imbue it with meaning by integrating it with preexisting knowledge. (Schacter 49)

Although college students have been writing academic prose for a decade or more by the time they arrive in a first-year composition class, few would consider them experts at writing academically. And one more semester of focused attention on their own writing probably won't put them over that bar, either. Nonetheless, as a composition instructor, I see myself as engaged in a process with my students of moving toward expertise, which is contingent upon developing a repertoire of discourse moves, not only for their own sake, but because such development supports further development *and* facilitates recall of the moves from the developed repertoire.

A Theory of Reflective Practice

The professional education theorist Donald Schön has much to say about developing a repertoire of discursive moves, and he believes the key is reflection. He writes, "Artistry hinges on the range and variety of the repertoire. [… E]ach new experience of reflection-in-action enriches [one's] repertoire" (*Reflective* 140). For

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Schön, reflection-in-action "consists in on-the-spot surfacing, criticizing, restructuring, and testing of intuitive understandings of experienced phenomena; often it takes the form of a reflective conversation with the situation" (*Reflective* 241-2).[8] Concerned about what he sees as a highly counterproductive rift between researchers and practitioners, Schön's project is to theorize the reflection-in-action that characterizes a skillful practitioner, to demonstrate that it isn't magic or even something inexplicable that distinguishes such people. Instead, he sees reflection-in-action as a habit of mind that is learned, and thus can be taught.

Schön locates the origin of the rift between researchers and practitioners in what he refers to as Technical Rationality.

> According to the model of Technical Rationality—the view of professional knowledge which has most powerfully shaped both our thinking about the professions and the institutional relations of research, education, and practice—professional activity consists in instrumental problem solving made rigorous by the application of scientific theory and technique. (*Reflective* 21)

Practitioners submit problems to researchers, who apply scientific methods to them and send solutions back down to the practitioners to employ. It all sounds good, except that

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[8] Schön's surfacing/criticizing/restructuring/testing process echoes Dewey's five phases or aspects of reflective thought: suggestion; intellectualization to a problem; hypothesis generation; hypothesis elaboration; and hypothesis testing (*How We Think* 107). Rodgers first expands Dewey's five phases to six, by the addition of "experience" (851), which is what prompts the surfacing of suggestions, and then collapses to four: presence to experience; description of experience; analysis of experience; and intelligent action/experimentation (856). If we bracket off the problem-defining and -solving aspects, we can map Rodgers' description and analysis onto Schön's surfacing and criticizing/restructuring and then back onto Dewey's reconstruction and reorganization. We can only bracket off problem-defining and -solving temporarily, however, because that's where the motivation to tackle reflective thinking comes from for many people. Indeed, according to Dewey, "Demand for the solution of a perplexity is the steadying and guiding factor in the entire process of reflection" (*How We Think* 14).

science is about arriving at generalizations; the myriad complexities of individual cases must be normalized, flattened, in order to come up with elegant theories. The result is that the researchers end up feeling it's beneath them to worry about specific cases, and the practitioners disregard the theories offered to them by the researchers because they aren't flexible enough to help in specific situations of practice. Schön labels this result a "dilemma of rigor or relevance" (*Reflective* 42).

He finds the origin of Technical Rationality itself in Comte's Positivism. His explanation of this relationship and its lingering impact for higher education helps explain the epistemological debates that continue to haunt composition in the 21st Century.

> Technical Rationality is the heritage of Positivism, the powerful philosophical doctrine that grew up in the nineteenth century as an account of the rise of science and technology and as a social movement aimed at applying the achievements of science and technology to the well-being of mankind. Technical Rationality is the Positivist epistemology of practice. It became institutionalized in the modern university, founded in the late nineteenth century when Positivism was at its height…. (*Reflective* 31)

It was, of course, at that same time that composition became a field in the United States, so it's no wonder that a positivistic current has always flowed through the field. Schön's goal is not only to upset the disciplinary hierarchy that has, as a consequence of this history, placed researchers above practitioners (although that is certainly something he is concerned about). The real problem, as he sees it, is the dilemma of rigor or relevance that keeps the camps separated and keeps practitioners from reflecting on their own

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practice. Finding Technical Rationality to be "incomplete, in that it fails to account for practical competence in 'divergent' situations," he calls for "an epistemology of practice implicit in the artistic, intuitive processes which some practitioners do bring to situations of uncertainty, instability, uniqueness, and value conflict" (*Reflective* 49). I'm very much interested in exploring such an epistemology, for myself as a teacher, and for my students as writers. After all, both teaching and writing are practices that some people seem to be good at and others seem not to be good at. Chalking up the differences to something inexplicable may help folks who are good at either (or both) feel better about themselves through a process of mystification, but it doesn't help anyone get better at either.

In order to demonstrate a central concept within his epistemology of practice, reflection-in-action, Schön analyzes a study report by Annette Karmiloff-Smith and Barbel Inhelder called "If you want to get ahead, get a theory." The study involved asking children to balance blocks, some of which had been weighted at one end, sometimes obviously, sometimes not. Some of the children, after being stymied by the inability to balance all of the blocks by placing them at their geometric center, started to "behave as though they had come to hold a theory-in-action that blocks balance, not at their geometric center, but at their centers of gravity," and as they do so, "they also shift from a 'success orientation' to a 'theory orientation.' Positive and negative results come to be taken not as signs of success or failure in action but as information relevant to a theory of balancing" (Schön *Reflective* 58). Moving away from a conception of pure success or pure failure is a necessary phase in developing a reflective habit of mind. As Dewey argues, "a great advantage of possession of the habit of reflective activity is that failure is not *mere* failure. It is instructive" (*How We Think* 114). Schön writes that "the

block-balancing experiment is a beautiful example of reflection-in-action" (59). And this example speaks very nicely to the practice of writing and the practice of teaching writing.

Encouraging a shift from a "success orientation" to a "theory orientation" is the first goal of a reflection-oriented writing pedagogy. The student writer who says, "When I turn in a paper, sometimes it works, sometimes it doesn't," is operating from a success orientation. Like the children who could sometimes get the blocks to balance and sometimes couldn't, such a writer is at the mercy of the fates. Writing papers is throwing darts in the dark. The teacher tallies up the score, and the writer discovers whether she has succeeded or failed. Throughout the process, the lights never get turned on. We need to get the lights on, so that students can see what they're doing, can begin to develop theories about what makes for effective writing.

It seems reasonable for the teacher to attempt to turn the lights on for the student by marking areas on the paper that are right and wrong, but there is at least one danger in doing so that Schön points out. If the student is still stuck in a success orientation, the teacher's marks will feed into a process of "overlearning." The areas that got good marks are always good, and the areas that got bad marks are always bad. At most, the student will try to do more of the good things and less of the bad things, though at this point, completely uncritically. At worst, the student will become "selectively inattentive" to the negative marks and make no improvement whatsoever. Either way, a sensitivity to demands of the rhetorical situation will not be developed. The answer, Schön argues, is reflection: "A practitioner's reflection can serve as a corrective to overlearning. Through reflection, [one] can surface and criticize the tacit understandings that have grown up around the repetitive experiences of a specialized practice, and can make new sense of

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the situations of uncertainty or uniqueness which [one] may allow [one]self to experience" (*Reflective* 61). The question then is, how do we encourage that reflection?

Schön is a student of John Dewey, and he quotes a statement by Dewey that speaks to the complexity, possibilities, and limits of a teacher's role in encouraging reflection in students. Dewey writes, "[The student] has to *see* on his[/her] own behalf and in his[/her] own way the relations between means and methods employed and results achieved. Nobody else can see for him[/her], and he[/she] can't see just by being 'told,' although the right kind of telling may guide his[/her] seeing and thus help him[/her] see what he[/she] needs to see" (qtd. in Schön *Educating* 16-17). There is room for a teacher in the process, but only if we guide through "the right kind of telling." I want to argue that the right kind of telling involves encouraging students to be explicit about what they are trying to do and why they are trying to do it.

Schön makes much of the distinction between tacit knowledge and expressed knowledge. He cites Michael Polanyi, who discusses, in *The Tacit Dimension*, the fairly universal and seemingly inexplicable ability to recognize a familiar face in a crowd, and Chris Alexander's *Notes on the Synthesis of Form* that describes Slovakian peasant shawl makers who recognize design mismatches without being able to articulate why they are mismatches (*Educating* 23-4). He describes a tennis teacher getting students to learn the feel of a solid hit: "Once they recognize this feeling, like it, and learn to distinguish it from the various feelings associated with 'hitting the ball wrong,' they begin to be able to detect and correct their own errors. But they usually cannot, and need not, describe what the feeling is like or by what means they produce it" (*Educating* 24). He refers to this kind of tacit knowledge as "knowing-in-action": "We reveal it by our spontaneous,

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skillful execution of the performance; and we are characteristically unable to make it verbally explicit. […] Nevertheless, it is sometimes possible, by observing and reflecting on our actions, to make a description of the tacit knowing implicit in them" (25). As writing instructors, as opposed to tennis instructors, we must tap into this possibility. Each draft takes much more effort to complete than a single swing of a tennis racket; we can never hope to amass the sheer repetition of performance that a tennis instructor relies upon.

Even if we had the time for an almost unlimited number of attempts across years of tutelage, like a tennis instructor has with a wealthy student, or Quintilian had with his wealthy students of rhetoric, the problem of overlearning could confound development of an expansive repertoire. Selective inattentiveness to problems with their writing could limit the acquisition of strategies for effectively handling novel rhetorical situations. Tacit knowledge may be sufficient for shawl making in the traditional way or acquiring a feel for a well-struck tennis ball, but it is not sufficient for making the most of the limited opportunities a writing instructor has with a student. Schön offers a good explanation of the fundamental problem with relying on tacit knowledge: "Free of the need to make our ideas explicit to someone else, we are less likely to make them explicit to ourselves" (*Educating* 300). And if we don't make them explicit to ourselves, we create no opportunity to learn from attempts by noting what worked and what didn't.

The concept of reflection-in-action depends for its effectiveness on what Schön refers to as the "virtuous circle" of making an attempt, getting feedback that is relevant to that authentic effort, and making another attempt in light of that feedback (*Educating* 99). The feedback comes from an external source, but that source need not be another person,

such as an instructor. It can be the interaction of the attempt with the situation.

Analyzing a protocol from an architectural design studio, Schön discovers that after a

tentative attempt at problem-solving, "The situation 'talks back,' and [the designer]

responds to the situation's back-talk" with an appropriately altered next attempt

(*Reflective* 79). He refers to this as a "reflective conversation with the situation"

(*Reflective* 103). And he's really talking about rhetorical awareness: recognizing the

constraints of the situation and adapting one's performance in response to those

constraints. Certainly, a major goal of a writing instructor, if not the ultimate goal, is to

help students develop the ability to listen to the situation's back-talk and decide on the

appropriate response from a well-developed repertoire of possible responses.

Although the feedback need not always come from another person, "awareness of

one's intuitive thinking usually grows out of practice in articulating it to others"

(*Reflective* 243). If Dewey's "right kind of telling" is, as I'm arguing, centered around

encouraging students to explicate their composition choices, there remains the question of

what form that encouragement should take. Schön suggests that "descriptions that are not

very good may be good enough to enable an inquirer to criticize and restructure his[/her]

intuitive understanding so as to produce new actions that improve the situation or trigger

a reframing of the problem" (*Reflective* 277). Early attempts at explication will of course

be limited by a lack of experience with the process of explication. But they may also be

limited by more complicated psychological impediments. Having realized that the

instructor puts value on explication, the pressure to perform an unfamiliar task can feed

self-doubt. Schön writes that even artful practitioners can "feel profoundly uneasy

because they cannot say what they know how to do, cannot justify its quality or rigor"

(*Reflective* 69). Uncertainty can feel threatening, and an early inability to articulate what's been learned from an attempt can be unsettling. This may explain why a teacher who asks students for a reflective commentary on a draft will often get very unreflective responses.

The Question of Criteria

As a teacher who has had this experience, I've learned that some students need criteria for reflection. If I say, "Before you turn in this draft, write a reflective commentary about the process of writing this paper so far," I'm likely to get far too many responses along the lines of Beach's nonrevisers', such as the one limited to "smoothing out some of the rough points" (161). Unpracticed in reflective writing, perhaps even unfamiliar with reflective thinking in some cases, many students can't make much of what presents itself to them as an ambiguous prompt for undefined reflection. Grasping at genre hints, as Beach points out, "These students' self-evaluation mirrors their previous teachers' comments on the final draft with an emphasis on matters of form" (161). This pattern is certainly familiar to teachers who attempt to set up peer critique sessions in their writing classrooms without first helping students expand their notions of constructive feedback. Similarly, we need to provide students with a framework for self-evaluation that will give them meaningful practice with reflection. Hannah Arendt argues, "Every reflection that does not serve knowledge and is not guided by practical needs and aims is … 'out of order'…" (qtd. in Schön *Reflective* 278). It's a pragmatic point, and it might be an overstatement, but in the context of developing a reflective habit of mind for the purposes of becoming a more effective academic writer, it's a point I agree with.

Kathleen Blake Yancey agrees with the point, but apparently only in the context of high-stakes assessment, which "demands clear directions" (*Reflection* 76). She locates this demand in the fact that most high-stakes assessment situations involve writing for an unfamiliar audience.

> On the other hand, students—especially those who are writing reflection-in-presentation in a class for a teacher they do know—are not writing professional documents, nor is a single course typically considered a high stakes assessment. Within the classroom, then, there is a certain freedom that we can use to learn about reflection-in-presentation—about how a reflection-in-presentation *shapes a self*, about what we value in such texts, about the forms and metaphors and connections students construct to shape themselves. (*Reflection* 77)

The distinction between classroom writing and high-stakes writing is an important one, filled with nuance, so I do not want to pass over it lightly. But before I address that distinction and its relevance to reflection, I need to explain the origin of the central term in that quote from Yancey: reflection-in-presentation.

Yancey begins with Schön's concepts of reflection-in-action (developed in *The Reflective Practitioner* and elaborated in *Educating the Reflective Practitioner*) and reflective transfer, introduced in his essay, "Causality and Causal Inference in the Study of Organizations." In fact, Yancey builds what she believes to be the quintessential Schön basket out of these two concepts and proceeds to put all of her eggs in it: "Key to Schon's perspective are the two concepts of reflection-in-action and reflective transfer; these form the philosophical backdrop to this book" (*Reflection* 13). In the process, she

makes three concepts out of two. Reflection-in-action is used as the label for reflecting

on "text-in-process," the kind of thinking captured in protocol-oriented studies such as

those conducted by Beach and Pianko. Reflective transfer, the description of which she

quotes from the conclusion of Schön's "Causality and Causal Inference in the Study of

Organizations," morphs into constructive reflection, with "identity-formation processes"

somehow smuggled in (13). I say smuggled in because Schön talks about no such thing

in either the conclusion Yancey cites or the earlier section of the essay in which reflective

transfer is first discussed. His essay aims at developing a social science of organizational

inquiry, and it is entirely directed toward an interrogation and expansion of social science

epistemology and methodology.

It's important to clarify Schön's notion of reflective transfer before continuing on

with explicating Yancey's theory of reflective writing because with the smuggling in of

identity formation, Yancey (almost certainly unintentionally) left behind a crucial aspect

of the concept. The concept is introduced in the context of arguing for the value of a

generalized causal story in the face of the more prestigious *covering laws* of social

science.

> Normal social scientists strive to design their questions and experiments so
>
> as to produce valid *covering laws*—general causal propositions
>
> instantiated by a wide range of instances of the occurrence of *x* and *y*. I
>
> have already noted how these strivings tend to undermine the usability of
>
> research results: Distortions are introduced when individual variables are
>
> extracted from the local contexts in which they occur, and a gap of

application arises when one tries to apply normal science generalizations

to particular organizational settings. (Schön "Causality" 89)

This is the same axe Schön has been grinding since the early 1980s, when he was arguing

about the limits of technical rationality and the constraining dilemma of rigor versus

relevance.[9] Applied to organizational inquiry, the terminology shifts a bit, but the central

goal of elevating the status of artistic practice by explicating its heretofore tacit mysteries

remains. Reflective transfer becomes a label for an aspect of case study methodology, an

approach many researchers would never grace with the term valid. Writing about making

broader use of "a causal pattern detected in a particular organizational setting," Schön

proposes,

The generalization of such a model is better understood as a process of

reflective transfer—"transfer," because the model is carried over from one

organizational situation to another by the process I have called "seeing-

as"; "reflective," because the inquirer should attend critically to analogies

and disanalogies between the familiar situation and the new one. […] The

utility of the prototype lies in its ability to generate explanation and

experimentation in a new situation. When it is carried over to a new

situation, its validity must be established *there* by a new round of inquiry,

through which it is very likely to be modified. And the modified

prototype that results from such a new round of inquiry may serve, in turn,

as a basis for reflective transfer to a new situation. ("Causality" 90)

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[9] It's not really even a newer model; it's the same exact axe. Earlier in the essay, he writes, "Technical rationality leads to a dilemma of rigor or relevance. If researchers tilt toward rigor, according to the standards of normal social science, they risk becoming irrelevant to practitioners' demands for knowledge that is usable under the pressured and often confusing conditions of everyday practice; if they tilt toward relevance, on the other hand, they tend by the same standards to become unrigorous" ("Causality" 70).

Nowhere in this extended definition does the notion of identity formation appear, even implicitly. What does emerge is an explanation for both the development and utility of a repertoire. Through a process of noting potential prototypical responses to situations and modifying those prototypes by monitoring their performance in new situations, an inquirer builds a repertoire of methodological moves. By this same process of reflective transfer, a writer builds a repertoire of rhetorical moves.

I want to salvage this application of the concept of reflective transfer from Yancey's treatment of the concept because I want to carry it forward as a key finding of my own inquiry in this chapter. But before I can do so, I need to complete the explanation of my objection to her smuggling identity formation into the concept. To do that, I need to return to explicating her theory of reflective writing.

Making three concepts out of Schön's two, Yancey ends up with a three part "definition of reflection in the writing classroom":

> *reflection-in-action*, the process of reviewing and projecting and revising, which takes place within a composing event, and the associated texts
>
> *constructive reflection*, the process of developing a cumulative, multi-selved, multi-voiced identity, which takes place between and among composing events, and the associated texts
>
> *reflection-in-presentation*, the process of articulating the relationships between and among the multiple variable [*sic*] of writing and the writer in a specific context for a specific audience, and the associated texts (*Reflection* 13-14)

The idea of using reflective transfer to develop a repertoire becomes entangled, if not entirely lost, in a pedagogies-of-the-self notion Yancey labels as constructive reflection. This becomes an extremely important entanglement because while reflection-in-action and constructive reflection are usually private processes (unless called into the light by a writing instructor's reflection-oriented pedagogy or a researcher's protocol-based methodology), reflection-in-presentation is held out by Yancey as the default public process, which embroils it in assessment. After recognizing it in the genre of the portfolio cover letter and finding it increasingly in other assessment situations, she writes, "because reflection-in-presentation is linked to public ways of knowing, it is typically associated with evaluation, with the judgment about the writing and the writer made by a reader" (15). I don't disagree with this explanation of reflection-in-presentation. My point is that by separating it from constructive reflection, Yancey fosters an expressivist notion of the writing classroom as a non-evaluative space where identify formation can occur simultaneously with the development of a reflective habit of mind. At the risk of coming across as overly dramatic, I see this as a dangerous theoretical development.

Virtuality and Its Limits

As mentioned earlier, Yancey alludes to a "certain freedom" in a writing classroom that supports exploration and obviates the need for explicit directions about reflective writing. This vision of the classroom as a safe space is analogous to Schön's concept of a virtual world. Having analyzed recorded protocols from two cases of practitioner education, an architectural design studio and a psychiatric residency, Schön steps back to notice that "the situations of Quist and the Supervisor are, in important ways, not the real thing. Quist is not moving dirt on the site. The Supervisor is not

talking to the patient. Each is operating in a virtual world, a constructed representation of the real world of practice" (*Reflective* 157). Having recognized this fundamental aspect of any formal educational setting and labeled it, he proposes that the "ability to construct and manipulate virtual worlds is a crucial component of [the] ability not only to perform artistically but to experiment rigorously" (157). Part of what makes working in virtual worlds so important is that they provide more opportunities for practice than the real world does. A tennis lesson offers the opportunity to work on one stroke over and over again, without the time limitations of a real tennis match, in which, for instance, the chance to hit a lob shot may only come up a handful of times. Of course, a player could try to develop a lob shot during a match by going to it repeatedly, but this might not be the best competitive strategy. This speaks to the related aspect of virtual worlds that makes them so valuable. It's what James Paul Gee refers to as a "psychosocial moratorium": "learners can take risks in a space where real-world consequences are lowered" (67). This is the "certain freedom" Yancey finds in a writing classroom.

A writing classroom both is and isn't a virtual world, to the extent that students care about the consequences attached to course grades. Early advocates for bringing portfolios into composition classrooms got very excited about them as virtual worlds in which students could explore and experiment freely (without risk). Peter Elbow, for example, argues, "portfolio assessment is attractive to teachers because it *rewards* rather than punishes the essential things we try to place at the heart of our writing courses," one of which being "exploratory writing, in which the writer questions deeply and gets lost" ("Foreword" xv). Brian Huot writes, "Portfolios postpone and limit the evaluative nature of the teacher's role and permit students to write for meaning and over a period of time,

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allowing more opportunity for reflection and revision" (325). But immediately (in fact, as a prompt for the importation of portfolios from fine arts in the first place), they were also seen as better assessment tools, which calls into question the promise of risk-free virtuality.

In 1978, James Ford and Gregory Larkin published an article in *College English* that may be the first[10] to describe the use of portfolios[11] in the college composition classroom. Its title ("The Portfolio System: An End to Backsliding Writing Standards") introduces the portfolio as a writing assessment instrument, even as it announces a hostility toward faculty that continues to drive calls for external assessment in the 21st Century (Elbow describes it as a "mushrooming distrust of teacher assessment" ("Directed" 17)). Ford and Larkin declare that their system "is the best way we know of to combat grade inflation and the decline in students' English abilities" (951). The authors acknowledge the portfolio's origin in the fine arts as they explain its usefulness: "Essentially, the portfolio system entails the disinterested judging of each student's work, collected, like the best representative work of an artist, into a 'portfolio'" (951). So we see that from the beginning, the writing portfolio was conceived as a tool of assessment, in this case even of more efficiently failing more students, making its ability to function as a central element of a virtual world a questionable prospect.

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[10] If it's not the first article, it may be at least the first portfolio program. Ford and Larkin explain that the Hawaii Campus of Brigham Young University had been developing the program for seven years (950) and that "the original version of the program was created by Robert Tippetts, Charles J. Fox, and other English faculty in 1970" (951 note 1). Ellen Schendel, who begins her dissertation's portfolio literature review with Ford and Larkin's article, notes that it was "published long before Composition studies engaged in what is now a full-blown discussion about portfolio use" (115). Certainly, Ford and Larkin don't cite other portfolio programs; in fact, other than the note about BYU-Hawaii faculty, they don't cite anyone or anything. In every respect, they present their program as sui generis.

[11] To be clear, the system Ford and Larkin describe, because it lacks any reflection and, arguably, any selection on the part of the student, would most likely be classified by Hamp-Lyons and Condon as "simply a pile, or a large folder" (119). Indeed, Ford and Larkin explain that it's actually "a large manila envelope" (951).

Ford and Larkin's early article describes relevant pedagogical implications of a system wherein a teacher other than the portfolio writer's judges the portfolio.

New teachers soon discover that the portfolio system changes the rhetorical situation between teacher and class, greatly reducing the possibility for antagonism which sometimes develops between student and teacher. Since right from the start the students know that they will not pass or fail by the teacher's word but by the portfolio reader's, they are more willing to accept the teacher in the role he or she actually fulfills, the friend and mentor who has a great stake in preparing the student to pass the portfolio. Therefore, little of the stick resides in the teacher, who is now mostly keeper of the carrot. (952)

I have sought this shift in my own classrooms, although having not yet taught at an institution that had fully implemented the external judge aspect of the BYU-Hawaii system, I find myself trying to play both roles: carrot-offering coach and stick-wielding judge. And it seems to work sometimes. I'll tell students on the first day of class that the portfolio will count for 100% of the course grade and that I will be reading their work throughout the term through forward-looking coaching lenses, as if we were practicing for the big game at the end of the semester, not through grade-based lenses. Many students can pretend along with me, though some are never fooled; they know I'm the one who is going to be doing the grading, and my comments on their work in progress are always colored by that knowledge. Worse yet, some of the students who are willing and able to pretend that I'm a coach end up feeling betrayed when they see their course

grades. What kind of a coach sends players into the game knowing they're going to get trounced?

I want to suggest that we fool ourselves (and maybe even sometimes our students) if we think we can get the benefits of virtuality throughout the semester and only pay the piper of consequence at the end. There are indeed benefits available through constructing a classroom as a psychosocial moratorium, a place where students can take risks without fear of swift and overwhelming reprisal. And, as I've argued early in this chapter, there are sound logical rationales for postponing grading until the end of the term. I'm not arguing against these ideas. However, the practice/exploration/experimentation fostered in a virtual world must produce results, or else it's been a false Eden. As Schön argues with regard to the design studio, "the virtual world of the drawing can function reliably as a context for experiment only insofar as the results of experiment can be transferred to the built world" (159).

Returning to Arendt's idea that "Every reflection that does not serve knowledge and is not guided by practical needs and aims is … 'out of order'…" (qtd. in Schön *Reflective* 278), I want to argue for a circumscription of the limits of virtuality in a college composition classroom. I worry about Elbow's idea that portfolios reward the kind of writing "in which the writer questions deeply and gets lost," not because I don't believe such writing has enormous value or shouldn't be rewarded, but because it cannot become an end in itself. Legendary compositionists who have the time and opportunity to develop ideas by mulling them over in seminars and at conferences, reworking them across years or even decades, publishing them iteratively in self-referential journal articles and book chapters, can afford to question deeply and get lost. Indeed, they can

become legendary in the process. First-year college writing students, who have ten or fifteen weeks to focus on their writing before submitting it for evaluation, cannot afford to get too lost in the process. Unguided reflection, though quite possibly the royal road to self-knowledge, can lead to infinite regress, to what Charles Bazerman refers to as a "hall of mirrors" (qtd. in Howard 39), or to nowhere at all.

Chris Anson writes about a classroom study he conducted in which he applied M. A. K. Halliday's functional model of language to an analysis of taped student talk-aloud reflections. The model has three aspects of language functionality: ideational, interpersonal, and textual. The separation of ideational and textual functions calls attention to the distinctions between thought and verbal expression of thought, while the interpersonal aspect roughly translates to the rhetorical dimension of language. Anson found correlations between the language functions that predominated in students' taped reflections on their own writing and those students' proficiency as writers: "Like students whose talk was dominated by retrospective[12]/textual commentary, most students caught in the ideational function were also typically weaker writers" (72). The latter group are the writers who are stuck in Bazerman's hall of mirrors.

Thus I see two negative polar outcomes of a reflection-oriented writing class that must be avoided as much as possible. On the one hand, students unfamiliar with reflective habits of mind or just unfamiliar with reflective writing could respond to ambiguous prompts to "reflect" on their work with shallow commentary that does not leverage the power of reflection for acquisition and transfer of knowledge. On the other hand, students, whether familiar or unfamiliar with reflection, could be encouraged to

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[12] Anson adds a temporal axis (past, present, future) to Halliday's model to come up with nine descriptive categories for reflective statements.

reflect so deeply that they get lost in a hall of mirrors. In both types of cases, it seems to me, the problem lies with the prompt (or lack thereof).

Like Anson, Yancey hearkens back to the cognitive research days and describes a process log developmental scale presented in Faigley, Cherry, Jolliffe, and Skinner's *Assessing Writers' Knowledge and Processes of Composing* that she says "provides a language and a pattern against which a writer's composing can be mapped, understood, and reflected upon" (31). The scale moves from general-intentional responses (e.g., "I really tried") to general-strategy responses (e.g., "I fixed my errors") to task-specific-strategy responses (e.g., "I tried to come across as open-minded in my introduction so I wouldn't turn off readers who do not agree with my stance on abortion"). It's not hard to map this scale onto Halliday's functional model. General-intentional responses are functioning in the ideational mode, general-strategy responses in the textual mode, and task-specific-strategy responses in the interpersonal mode (although, as this attempt at mapping indicates, there is much overlap between the functions, a problem that's plagued rhetoric from Plato to Ramus and into the present day). The first two types of responses are of no value to a writing teacher who reads them and arguably are of no value to the writer, either. They do not support reflective transfer because they do not tie specifics of the new situation to preexisting knowledge and thus do not constitute elaborative encoding. Task-specific-strategy responses might support reflective transfer through elaborative encoding, so at a minimum, a prompt for reflection could explain the difference between these types of reflection on one's writing process and indicate that the preferred responses are those of the task-specific-strategy type. This would also mitigate against infinite regress in reflection because although there would still be room for

introspective musings and expression of emotions, students would be encouraged to relate these to specific elements of the rhetorical situation and the text generated in response to it. Using the scale to call attention to different types of reflection could help some students avoid drifting toward the negative poles.

Of course, some students could still elect to eschew task-specific-strategy reflection, because it's too challenging or the allure of aimless introspection is too fascinating to resist. But I'm more concerned about the students who are still too unfamiliar with rhetorical analysis to be able to perform task-specific-strategy reflection, even when they're inclined to attempt it. If writing papers is still throwing darts in the dark for them, they will have much greater difficulty identifying specific tasks and strategies upon which to reflect. This is a problem of not having yet developed a substantial enough repertoire of writing experiences. And this is where a set of criteria, such as course objectives or desired learning outcomes, can be usefully provided as a framework for reflection.

Yancey, as we know, is concerned about providing too much direction in reflection prompts. She writes,

> the directions *preclude exploration that can teach*. In the classroom rhetorical situation, we know more about the contexts the students have been working in; allowing students considerably more freedom—to imagine and experiment and explore, to create reflection as a specific kind of discourse taking place in specific sites—thus seems appropriate. It is through such freedom that we all learn. (*Reflection* 77, emphasis in original)

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Again, her distinction of the classroom as a space qualitatively different from the space of high-stakes assessment causes her to privilege the possibility for open-ended exploration. She wants to learn more about what reflection can do, as do I, and she wants to give it free rein, wherever possible, to exhibit its manifold powers. I don't believe the writing classroom is as far from high-stakes assessment, in our students' perceptions, as Yancey does. But to be fair to her, she also recognizes that virtuality does have limits.

> We have to value and engage in such freedom cautiously. We have to remember that ultimately, teachers are responsible for helping students manage this freedom; how we go about doing that in a way that isn't hegemonic, that is respectful, is a key question. We also have to remember that we are the ones who award the A's, who valorize the truths and the selves telling those truths, who compose students in this process.
>
> (*Reflection* 77)

I don't know that a teacher can ever entirely escape participation in hegemonic power structures, though we certainly can and should aim at being respectful during such participation. Though it has acquired mostly negative connotations in critical discourse, hegemony need not be a negative concept. It comes from the Greek for leader, which is exactly what Yancey wants teachers to remember they are. So while I want to proceed to address this key question she has posed, I reject from the start one of her qualifications for a satisfactory answer.

Hegemony

If we provide students with a set of criteria and ask them to use the set as a framework for reflection on their writing, we are certainly inviting them to participate

with us in a hegemonic power structure. We are placing before them a set of institutionally-sanctioned concepts and asking them to read their experiences against those concepts. Whether we view this as domination and indoctrination or invitation and collaboration has everything to do with the connotations we attach to the concept of hegemony.

A common source of negative connotations for the concept of hegemony is Louis Althusser and his theories about ideological state apparatuses (ISAs). ISAs such as the church and the school cooperate with the repressive state apparatuses (RSAs) of the military and the police to maintain the status quo of class-based power differentials. And Althusser argues,

> To my knowledge, *no class can hold State power over a long period without at the same time exercising its hegemony over and in the State Ideological Apparatuses.* I only need one example and proof of this: Lenin's anguished concern to revolutionize the educational Ideological State Apparatus (among others), simply to make it possible for the Soviet proletariat, who had seized State power, to secure the future of the dictatorship of the proletariat and the transition to socialism. (98-9, emphasis in original)

Althusser apparently saw nothing positive in ISAs, let alone RSAs, although the example he provides implies that even the good guys may be able to use them toward good ends (the traditional Marxist language of "dictatorship" notwithstanding). In fact, contrary to common understanding, ISAs weren't really Althusser's idea at all, a fact he partially acknowledges. In a note in "Ideology and Ideological State Apparatuses," Althusser

writes, "To my knowledge, Gramsci is the only one who went any distance in the road I am taking. He had the 'remarkable' idea that the State could not be reduced to the (Repressive) State Apparatus…" (95). It's commendable that he acknowledges his indebtedness, although I think Gramsci did a little more than go along the same road; it seems to me he built it. But I suppose that's just my own ideological baggage of Great Man Theory and intellectual property.

Actually, my point isn't to argue that Althusser's idea is just Gramsci rehash. As I read it, Althusser only got it half right. Though he describes the ISA's as "the seat and the stake" of class struggle, he doesn't argue for the possibilities opened up by hegemony (126). Gramsci sees hegemony as a tool that is up for grabs, one that can be taken hold of by organic intellectuals and used to further the agenda of the proletariat.

> One of the most important characteristics of any group that is developing towards dominance is its struggle to assimilate and to conquer "ideologically" the traditional intellectuals, but this assimilation and conquest is made quicker and more efficacious the more the group in question succeeds in simultaneously elaborating its own organic intellectuals. (1141)

Education, a component of Gramsci's civil society and the dominant ISA in Althusser's opinion, thus exists as the key contested space wherein the reins of hegemony are either handed off to the children of the ruling class or wrested away by the ruled. James Arnt Aune reads Gramsci this way, too. In fact, it was Aune who taught me to see a distinction between Althusser and Gramsci. Aune writes, "For Gramsci, hegemony is the theory of overcoming alienation" (70). Hegemony, for Aune (and he thinks for Gramsci,

too), has potential for both negative and positive mediation between base and superstructure. Marxist and Marxian critics may call me to task for such a quick gloss on such complicated issues, but at a minimum, my gloss problematizes the notion that hegemony must always be a negative process.

Reflection and Reflexivity

Paradoxically, I find both another challenge to the idea of using institutionally-constructed criteria to prompt students' reflective writing and support for doing so in the work Donna Qualley has done on reflexive inquiry. Qualley writes, "I teach both writing and reading as methods for reflexive inquiry by teaching what I call the essayistic stance, a way of thinking about ideas that is dialogic and reflexive" (3). This essayistic stance is the epistemology she privileges over technical knowledge, which "entails knowing how to apply a rule, code, or formula to a problem" (3). The trouble with technical knowledge's monopoly on education is its ill fit for the unexpected. Sounding very much like Schön (and citing him in the process), she points out that "when a task is unfamiliar or complex, it may also require making some variation of procedure" (3). Reflexive inquiry's superiority over technical knowledge derives its receptivity to learning (about the other and about the self) from encounters with the other.

It's this very important role of the other that distinguishes, for Qualley, reflexive inquiry from reflection.

> Reflexivity is not the same thing as reflection, although they are often part of the same recursive and hermeneutical process. When we reflect, we fix our thoughts on a subject; we carefully consider it, meditate upon it. Self-reflection assumes that individuals can access the contents of their own

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mind *independently of others*. Reflexivity, on the other hand, does not

originate in the self but always occurs in response to a person's critical

engagement with an "other." Unlike reflection, which is a unidirectional

thought process, reflexivity is a bidirectional, contrastive response. The

encounter with an other results in new information or perspectives which

we must hold up to our current conception of things. (11-12)

When we ask students to reflect on their writing, in the absence of any guidance about

how to proceed in doing so, we may indeed be asking them to indulge in a unidirectional

thought process. And the result, all too often, will be the general-intentional and general-

strategy responses Faigley, Cherry, Jolliffe, and Skinner note. Such responses do not

take into account an interaction with an other—not a constructed audience, not even the

text that has been composed.

Institutionally-generated criteria for reflection can serve as the other with which

students are asked to engage. In making this assertion, I am conflating, at one point at

least, my idea of reflection with Qualley's idea of reflexive inquiry. It is this conflation

that allows me to paradoxically draw both challenge and support from Qualley's theories.

She writes, "The encounter with the other initiates the reflexive turn to the self, and the

continual interplay between self and other is what prevents self-consciousness from

slipping into narcism or solipsism" (139). And yet, "the other may also be a text written

by an earlier self" (139).[13] At this point, the distinction between reflection and reflexivity

breaks down, for me. However, Qualley retains the distinction.

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[13] Dewey goes one step further, arguing that the other could be an object one "constructs in fancy" (*Experience* 43). Unless at least written down, an experience with such an other would likely be solipsism.

My focus in this inquiry differs from many cognitive researchers in composition who are looking at how reflection—defined as anything from the writers' backward scanning of written text to their deliberation and evaluation of knowledge and rhetorical strategies during planning and drafting—improves the actual written text. […] I have suggested throughout this book that writing and reading can lead to gains in learning, and the generation of new meanings. And yet, sometimes this more sophisticated exploration of subject matter leads to a temporary loss of rhetorical control. At any rate, my focus in this book is more on the writer and reader's exploration of subject matter, rather than technical control of text. (138)

Narrowing student writers' focus to course objectives or program-mandated goals for learning outcomes could certainly be read as continuing the emphasis on the acquisition and demonstration of technical knowledge and control. Even if this isn't viewed as hegemonic in the negative sense of the word, Qualley would likely view it as limiting the inquiry.

The Value of Explicitness

I would argue that limiting the inquiry is exactly what an encounter with an other does, and that this is a generative function. In the absence of an other, reflection can only be solipsism. Those familiar and comfortable with introspection may be able to take advantage of an opportunity to reflect in this manner in the context of a writing class; others will be stifled. But even those who can use writing solipsistically will not necessarily be developing a rhetorical repertoire in the process because they will not be

concerned with audience, unless of course, they recognize the writing teacher as an audience valuing solipsism, such as those Faigley worries about in "Judging Writers, Judging Selves." But if they already know how to play up to this particular audience, they are rehearsing a skill already in their repertoires, not developing new ones.

I don't mean to imply that there is nothing of value in giving the audience what it wants. On the contrary, I think doing so can be read as evidence that the writer has developed a crucial aspect of rhetorical awareness: a consciousness of audience. Those students who develop, in high school and earlier, the ability to recognize that English teachers value introspection and "authentic voice" have developed something of value indeed. However, I have two concerns related to this, both of which support a move toward applied criteria in reflective writing prompts. First, as I've said, not all students have the experiences in high school and earlier that lead to the development of this ability.[14] Second, because of the use of terminology such as "authentic voice," even those who do have these experiences may not come to college with the recognition that this is only one type of valued writing, valued only by certain audiences in certain situations.[15] If they are lucky enough to be assigned first-year composition instructors

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[14] Shirley Brice Heath describes this difference in early literacy experience, much earlier than high school, between children from "Maintown" and "Roadville." James Paul Gee talks about the same issue (referring to Heath's research for support) in terms of primary and secondary discourses: "Children from non-mainstream homes often do not get the opportunities to acquire dominant secondary discourses, for example those connected with the school, prior to school in their homes, due to the lack of access their parents have to these secondary discourses. […] Further, research pretty clearly shows that many school-based secondary discourses conflict with the values and viewpoints in some non-mainstream children's primary discourses and other community-based secondary discourses" ("What is Literacy?" 57-8). This complicates the idea of hegemony as necessarily dyslogistic. Asking students to adopt institutional values uncritically is certainly a negative version of hegemonic pedagogy; calling their attention to how those values are woven into course objectives and learning outcome goals is part of a more critical pedagogy that may be no less hegemonic but is certainly much less repressive.

[15] As Christine Overall points out, "The power of the class system in North America persists, in part, because of its simultaneous invisibility and apparent naturalness" (210).

who are members of this specific audience, they will succeed (in first-year composition courses, at least). If not, they will be no better off than the first group.

For both groups of students, then, a set of institutional criteria can provide the distance to reflect productively on their own writing and a set of lenses through which to do that reflection. Thomas Hilgers, Edna Hussey, and Monica Stitt-Bergh find support for this idea of a necessary distancing in Frederick Kanfer's "feedback loop" model: "Self-monitoring provides an individual with feedback that allows the individual to discriminate between his or her current level of behavior and some significant social or individual standard" (5). If we attempt to facilitate this discrimination by providing students with institutional criteria (social standards constructed by a particular institutional society), the result may still end up being telling the teacher what he or she wants to hear, but at least now that criteria has been made explicit and thus available to all students. Yancey, however, worries about authenticity. She writes, "The question seems to be how we would know whether we were reading the product of (genuine) learning or the product of shmooz" (*Reflection* 81). Relying on Weiser's discussion of the concept, Yancey defines shmooz as a direct appeal "appearing in a text that plays back to us quite explicitly (quite manipulatively?) our own values" (81). Weiser describes it as "the often indistinguishable evil twin of 'glow,' the-telling-the-teacher-what-he-wants-to-hear that students may very well write in their reflective letters" (qtd. in Yancey 81). On the one hand, educators could celebrate this move as evidence of developing rhetorical awareness,[16] of a sensitivity to audience that writing instructors work very hard to help students develop. "On the other hand," Yancey argues, "we don't

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[16] Indeed, during a conversation with me about this dissertation, Weiser acknowledged this positive aspect of schmooze.

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want to encourage nor reward what a cynic might characterize as obsequience or false compliance" (81). Picking up on this idea of cynicism, Jane Bowman Smith echoes Yancey's sentiment and provides an alternate label: the "chameleon effect."

> At best, the students' commentaries will reflect what has gone on in the classroom—the goals, values, instructional methods, and actual content— but also the students' desire to say what they think we want to hear. In a sense, this is the paradox of teaching: We want students to be honestly converted. We do not want them *cynically* to write down our own words and toss them back at us. (129)

I'm very uncomfortable with the idea of being included in Smith's "we" who want to convert students. Convert them to what? Non-cynical non-chameleons? It suggests a deep desire to reach students' authentic selves. This is a dubious quest for a problematic construct, to be sure. And it signals to me a longing for an arhetorical relationship, one in which the participants do not make adjustments based on their readings of audience, do not, that is, schmooze. These arhetorical yearnings point to a need to investigate, etymologically, this concept of schmooze.

Just what Weiser was thinking when he wrote about schmooze is impossible to know.[17] But there are two words that may have been conflated in his mind, two words with quite different, though possibly complementary, meanings. If we speak of a salesperson who knows how to "schmooze" a client, we're noting rhetorical efficacy, perhaps in order to compliment the salesperson, perhaps in order to warn the client. Applying Kenneth Burke's terminology (itself a response to Jeremy Bentham's

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[17] I recently had that rare opportunity to ask an author what he was thinking when he wrote something; unfortunately, Weiser could neither confirm nor refute my "schmutz" hypothesis.

conceptualizations) from *A Rhetoric of Motives*, we could say that "to schmooze" can serve as either a eulogistic or dyslogistic covering for the same action. Indeed, as *The Oxford Essential Dictionary of Foreign Terms in English* tells us, "schmooze" comes to English from the Yiddish for chat or gossip, activities that can be viewed as either beneficial for or destructive of social relationships. However, another borrowing from Yiddish, "schmutz," can only have dyslogistic connotations: dirt, filth, or rubbish. It may be that homophonous contiguity has allowed the latter's connotations to drift into and merge with the former's. If we decide that on a given occasion, we're being "chatted up" in a way that we find unwelcome, schmooze may become indistinguishable from schmutz.

But it seems to me that schmoozing in the context of a reflection on one's own writing would only feel offensive (obsequious, falsely-compliant, cynically chameleon-like, schmutzy) to a teacher who is reading such a reflection in hopes of hearing therein an "authentic voice." And that is not only an extremely subjective criterion for evaluating student work but, worse, an extremely difficult one to make explicit, to oneself or to one's students. It would be much fairer to students to apply a rubric developed from Faigley, Cherry, Jolliffe, and Skinner's scale. Obsequiousness in the sense of false compliance (Yancey's "shmooz") would become irrelevant. Task-specific-strategy responses tying the course objectives to textual elements would qualify as compliance with the assignment to reflect. The students would be given an opportunity to respond to the explicit requests of a specific audience while simultaneously reflecting on elements of their own writing in relation to an other (the set of institutional criteria).

How might this pedagogical practice of assigning reflection based on institutional criteria support the development of a portable and durable rhetorical repertoire? In other words, how are the processes of reflective transfer and elaborative encoding effectively brought into this type of learning experience? One way of addressing these questions has already been suggested by the allusion to Kanfer's feedback loop model: the concept of self-monitoring. Borrowing this concept from behavioral psychology and applying it to composition theory is not an entirely seamless process because, as I've described, composition's relationship to social science epistemology is complicated. That said, since I have already placed science-oriented cards at the base of my inquiry, there is both an opening and a need for another to help buttress them. Hilgers, Hussey, and Stitt-Bergh cite key findings from Alan Kazdin's 1974 review of self-monitoring in the psychology literature that are highly relevant to this exploration: "[H]e found that the therapeutic effects of self-monitoring appeared to attenuate across time. Interestingly, he also found that when effects occurred, they were not particularly dependent on either the accuracy or the reliability of a subject's observation of the behavior" (3). With respect to the problem of beneficial effects of self-monitoring attenuating over time, I would posit that Schacter's theory of elaborative encoding points to a solution. If the criteria for self-monitoring are entirely individually-constructed (a perhaps impossible extreme), they may not be sufficiently articulated so as to provide attachment points for elaborative encoding. The feedback from engaging with these criteria is thus not consolidated into durable memories available for ongoing retrieval.

Schacter is also helpful in making sense of the other finding about self-monitoring that Hilgers, Hussey, and Stitt-Bergh find so interesting (the independence of accuracy

and effect). Because, as Schacter's work helps us see, memories are fundamentally

constructed, rather than replayed, accuracy is largely irrelevant to retention. And this

speaks to the concerns of Bowman, Weiser, and Yancey regarding the "truth" of

students' reflections. Writers need not remember what they were actually thinking

during the composition process to make the reflective process of connecting elements of

their work to criteria for evaluation a fruitful process of developing an accessible

repertoire of composition strategies.

Sam Watson would argue that retention isn't enough. He writes, "[O]ur learning

becomes more confident and deeper when what we are learning becomes more than

information to be stored in memory, when instead we represent it to ourselves and

thereby reflect upon it" (89). Watson's view of memory as a data storage device doesn't

take into account Schacter's ideas about how memories are actually retrieved.

Nonetheless, Watson brings us back to an important issue about the student's active role

in the reflection process that argues, concerns about hegemony aside, for student

participation in the construction of reflective criteria. Hilgers, Hussey, and Stitt-Bergh

argue that "if students help define evaluation criteria when an assignment is made, they

will probably begin to use the terminology and ideas from those discussions. […]

Through training and practice, students will gradually internalize criteria that they can

apply themselves, based on the requirements of the writing situation" (18). This is

repertoire building, and as these writers suggest, it's a collaborative process in which the

student must be actively, though not independently, involved. Smith notices this process

of teachers and students collaboratively generating the criteria for reflection: "The

changes they notice are often modeled on class goals; they use my comments as well as

class discussion to form their criteria, which suggests how contextualized self-assessments are" (133). It certainly does, and it challenges the notion that student-generated criteria are somehow outside of hegemonic power structures.

Take-Aways

What then, along with an ambivalent attitude toward hegemony in self-assessment, can we take away from this exploration of the literature on reflective writing? I suggest that as we move to a review of the literature on ePortfolios in Chapter Three and then look at examples of reflection in ePortfolios (Chapter Five), we can read with the following questions on our lips.

- o In what ways does the electronic medium support the development of a rhetorical repertoire through reflective transfer?
- o In what ways does the medium support reflective transfer through elaborative encoding?
- o Where do we see examples of task-specific-strategy responses to prompts for reflection?
- o What forms do these responses take?
- o What forms do the prompts take?
- o Are there valuable types of reflective response other than task-specific-strategies that emerge?
- o Can we theorize bridges between these unforeseen reflective types and development of rhetorical repertoires?

CHAPTER THREE

ELECTRONIC PORTFOLIOS

The portfolio is a powerful tool for learning and
assessment. Introducing the electronic into the mix
increases its power, especially the electronic portfolio's key
features of interactive hyperlinks and continuous reflection
on and updating of learning.

— Barbara Cambridge, *Electronic Portfolios*, back cover

In "Wedding the Technologies of Writing Portfolios and Computers: The
Challenges of Electronic Classrooms," Gail Hawisher and Cynthia Selfe "caution that
despite the potential for meaningful educational change often associated with portfolios
and computers, the bringing together of the two does not necessarily double the
benefits—in fact the combination may well double the liabilities" (308). It's important to
look carefully at those benefits and liabilities, as they are trumpeted for and cautioned
against by ePortfolio advocates and theorists. It is certainly the case that ePortfolios are
neither the solution for nor the source of all educational problems. But there are many
who would drive us to a shotgun wedding of these technologies, confident that the birth
of ePortfolio-centric curricula is imminent and inevitable. That may be the case, but if it
is, we owe it to our students to listen closely, both to the proponents of the wedding and
even more closely to the doubters (because they are far fewer in number and may
therefore be drowned out by the well-wishers).

Arguments for ePortfolios

Hawisher and Selfe offer their argument for ePortfolios on the heels of an
assertion about paper portfolios that they apparently feel no need to support. They write,

"We do know […] that traditional portfolio projects encourage students to reflect on their learning, thereby giving them an opportunity to enhance their performance through evaluative feedback and review" ("Wedding" 320). Actually, there are many "traditional" portfolio projects that do no such thing because they do not ask for student reflection. Such portfolio projects may only focus on collection and selection (if that). An argument could be made that the process of selection depends upon reflection, even if that reflection is not made explicit and can only be inferred from the students' choices of materials to include in their portfolios. This is no doubt reflection of a kind, but of a kind that I would argue does not provide the "opportunity to enhance their performance through evaluative feedback and review" to which Hawisher and Selfe allude ("Wedding" 320). But if we extend tentatively, as if holding a card in place in order to place others beside it for support, a willingness to accept a definition of a traditional portfolio project as one that includes Hamp-Lyons and Condon's three essential characteristics (collection, reflection, and selection), we can then proceed with Hawisher and Selfe's argument for ePortfolios.

Following the assertion about reflection, they write, "Electronic portfolios have the added advantage of permitting students to share their work instantly with their instructors and other students over the network at any time of day or night, to 'conference' asynchronously with other writers at will, and to revise assignments online as they progress through the semester" ("Wedding" 320). These are indeed valuable aspects, and although they are careful to hedge their enthusiasm, Hawisher and Selfe eventually make a rather large claim based on that value: "In small ways, then, the wedding of portfolios and computers can, in the hands of reflective and critically-minded

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teachers, begin to change the culture of our schools" ("Wedding" 320-21). It is not my intent to argue away all purported benefits of ePortfolios as quickly as I introduce them. But I would like to point out that the three benefits they mention are in no way limited to ePortfolios; the combination of word processing and email software permit sharing, conferencing, and revising. There may be qualitative differences in how these permissions function, but they are in fact functions permitted without the use of ePortfolios.

Published in the same 1997 collection (*Situating Portfolios*, edited by Yancey and Weiser) as Hawisher and Selfe's "Wedding" article, Kristine Blair and Pamela Takayoshi's "Reflections on Reading and Evaluating Electronic Portfolios" celebrates other possibilities opened up by ePortfolios. Blair and Takayoshi make different claims about benefits than Hawisher and Selfe do, but the different claims are no less grand and not much more robustly supported. They do move from pure speculation to evidence-based analysis, but the evidence is rather slim.

> Through an examination of one student's electronic portfolio, we argue that electronic portfolios may support and encourage the development of reflection and understanding in student writers about their writing processes, the relationship between the parts of those processes, and the fluidity of writing processes. (358)

I don't say that the evidence is slim because of a prejudice against case study methodology. In truth, I am convinced that through careful, deep analysis, case study can provide insights that other, more commonly considered robust research methods cannot or do not detect. The problem isn't with case study in theory; the problem is the way

Blair and Takayoshi put it into practice in this article. There is nothing that could be

considered thick description[18] of "Patti's HyperCard portfolio." Aside from telling us

that Patti didn't employ audio, referring to her portfolio's "simplicity," and lamenting

that "users move throughout the document unidirectionally in an order set by Patti," Blair

and Takayoshi limit their description of its contents to one sentence: "It opens with an

introductory welcome to her portfolio, followed with a copy of her resume, and then

particular samples of her design work that she has copied into her HyperCard program"

(362). We aren't told what those samples look like, and the article does not contain a

single screen shot.

Nonetheless, on the basis of this cursory case study, Blair and Takayoshi theorize

three "benefits for student writers" offered up by electronic portfolios:

> 1) they accommodate an expanded notion of literacy which incorporates
>
> words, images, graphics, sound, and motion; 2) they allow and encourage
>
> myriad ways of organizing thinking […]; and 3) electronic portfolios
>
> support pedagogical goals of students' control over the organization of
>
> their portfolios and the kind of metacognitive awareness often associated
>
> with the reflective material found in traditional writers' portfolios. (364-5)

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[18] Clifford Geertz is perhaps most commonly thought of as the originator of the ethnographic concept of thick description. However, in the essay in which he introduces the term to cultural anthropology, "Thick Description: Toward an Interpretive Theory of Culture," Geertz acknowledges "borrow[ing]" the idea from Gilbert Ryle (6). Trying to tease out the elements of reflective thinking, Ryle relies on examples such as a golfer who is seen practicing approach shots, as opposed to actually playing in a golf match. A thin description is that the person is hitting golf balls, one after the other, onto a putting green, whereas "the 'thick' description of what [the person] is engaged in requires reference to [the person's] thoughts…," which are presumably some sort of forward reaching transfer of the skills under development to a future match situation (474). I am using the term to refer to the need to describe not only what a student is doing in an ePortfolio but also to build suppositions regarding why the student is doing what she's doing. Such suppositions might be built from contextual artifacts, such as an assignment prompt, institutional discourse about the ePortfolio, and self-referential artifacts within the ePortfolio itself. This is the approach I take in Chapter Five.

To take each of these in its turn, the first benefit is the most obvious one. Because computers convert all inputs into a binary code of zeroes and ones, all texts (in the broadest possible sense of the word) represented digitally are ultimately constructed of the exact same nonmaterial and are thus, more or less, easily integrated with each other.

The universality of this digital substrate lies at the heart of Gunther Kress and Theo Van Leeuwen's notion of multimodality. In *Multimodal Discourse: The Modes and Media of Contemporary Communication*, Kress and Van Leeuwen set out to sketch a theory of multimodal communication by dividing the production of meaning into four domains of practice called *strata*. The strata are discourse, design, production, and distribution. While arguing that "'stratal uncoupling' is never absolute" (9), they nonetheless proceed to analyze the material origins and effects of each in its turn. A discourse is socially-constructed knowledge, which is integrated through design into a blueprint for production of a text that is then distributed. The significance of multimodality is that the material changes in our time (desktop publishing, for example) move us into a domain of multi-skilled practice, where monomodal scripts are no longer applied uncritically. Instead, we enter a "new age of design" (49), an age in which choices among conventional options must be made, so as to best fit the most effective mode to the discourse we desire to communicate. I believe this is the "expanded notion of literacy" Blair and Takayoshi have in mind.

This recognition of the perhaps infinite expansion of available symbols made possible through digitization is an important one, to say the least. Carolyn Handa's collection, *Visual Rhetoric in a Digital World: A Critical Sourcebook*, contains articles that, enthusiastically celebrating the arrival of the "Digital World" each in its own way,

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advance utopic claims all founded upon the ease with which the visual can now move into the realms previously dominated or owned exclusively by the verbal. For example, Craig Stroupe looks to use hybrid visual/verbal textuality to repair the intradisciplinary rifts in English Studies. Jay Lemke envisions a revolution in education spurred by the new literacies demanded and made available by electronic technologies. And Stephen Bernhardt applies Gestalt Theory to page layout in order to argue for page design as a vehicle to increased rhetorical awareness on the part of composers.

Richard Lanham expands on this connection between digitality and rhetoric, seeing in it the seeds of peace. Arguing that electronic text forces us to look AT text as well as THROUGH it for the underlying meaning, Lanham claims that digital technology is ushering in a new rhetorical age in which presentation again becomes an object for study in the liberal arts. In *The Electronic Word*, Lanham makes the claim that the essays in Bateson's *Steps to an Ecology of Mind* "offer the best analysis to date of rhetoric as an *irenic* structure of thought" (69). Lanham goes on to say, "In its natural oscillation, the rhetorical paideia is deeply irenic, would keep the peace by preventing us from filtering the self-interest and self-consciousness out of our most profoundly disinterested convictions and then committing atrocities in their name" (111). And digital technology, according to Lanham, will help us foreground this oscillation because "Digital decorum is frankly and openly bi-stable" (82). He says, "Electronic text renders our decorum again self-conscious and interactive; it continually reminds us that the real basis of that decorum, of our social reality, is not fixed but bi-stable, the reality illustrated by the bi-stable illusions like the rabbit and/or duck" (82). If rhetorical education promotes peace,

and electronic text facilitates rhetorical education, then teaching students to work effectively with electronic text is a noble vocation indeed.

That said, the expanded notion of literacy that is the first of three benefits of ePortfolios suggested by Blair and Takayoshi and that supports Lanham's enthusiasm for electronic text may lie just beyond the scope of this dissertation, with its focus on reflection. Their second proposed benefit, "allow[ing] and encourag[ing] myriad ways of organizing thinking," certainly does not. Their third proposed benefit, "electronic portfolios support pedagogical goals of students' control over the organization of their portfolios and the kind of metacognitive awareness often associated with the reflective material found in traditional writers' portfolios," is really two separate benefits: a restatement of the second and an affirmation of a benefit of portfolios, regardless of their media. I discuss below the second proposed benefit, thus addressing the first part of the purported "third" benefit; the second part of the third benefit is the fundamental assumption the dissertation interrogates. Chapter Two discusses reflective awareness, and Chapter Five looks for it in sample student ePortfolios.

Between Allowing and Encouraging

There is a crucially important gap between allowing and encouraging something that Blair and Takayoshi leap across quite casually in their purported second benefit of ePortfolios. Because that gap lies at the very heart of my inquiry, I do not have the luxury of indulging in a casual leap. Actually, it's rather surprising that they do, considering the very evidence they put forward as suggestive of an ePortfolio's benefits. They tell us that Patti's portfolio ushers readers through "unidirectionally." The possibilities for nonlinearity opened up by hyperlinks were apparently not explored, or at

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least no record of that exploration remains in the final product. This case study calls

attention to the fact that despite its affordances, a hypertext environment does not

necessarily *encourage* exploitation of those affordances. It may *allow* myriad

organizational structures, but it apparently does not entail them.

I realize that I've just made a leap of my own, from encouraging to entailing. To

be fair to them, Blair and Takayoshi do not use the word "entail."[19] But since I've added

that possibility, I'd like to play around with it a bit. If we construct a continuum of

possible descriptors for the organizational influence of ePortfolios on students' writing

and thinking (as evidenced in their writing), we might start with something like this:

Allows $\Longrightarrow$ Encourages $\Longrightarrow$ Entails

To say that ePortfolios allow writers to organize their thinking in multiple ways is

simultaneously to point out a wondrous possibility and to make a fairly meaningless

claim about it. It's a wondrous possibility because each new configuration would allow

the writer to make new connections between learning experiences, as represented in

textual nodes singled out from the larger compiled record that is the collection of that

writers' work. Through the processes of elaborative encoding and reflective transfer, an

expanded network of connections expands the opportunities both to make more

connections and to retrieve what was learned for application in a broader range of future

rhetorical situations.

On the other hand, to say that this is allowed by ePortfolios is to make a fairly

meaningless claim because we could say that almost anything allows the making of these

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[19] They definitely sneak up on doing so, however, when they refer to ePortfolios "requiring student self-reflectivity" (368). No doubt another semantic gap exists between "requiring" and "entailing," but I would argue if there is, it's a fissure compared to the crevasses that exist between either term and "encouraging."

kinds of connections. Just as I argue that the aspects of ePortfolios celebrated by Hawisher and Selfe are also aspects of a combination of word processing and email software, the affordance pointed to by Blair and Takayoshi is an affordance of many other modes through which and media across which writers can think and write. Associative conversational apparatuses such as brief asides and extended digressions may have been strengthened or even spawned by print literacy, but they have certainly been around a lot longer than digital technology (and I am not aware of any indications that they are in danger of being displaced by it). Corresponding print literacy apparatuses such as parenthetical asides and extended footnotes have been functioning intratextually (if not hypertextually) for both writers and readers for centuries.

Perhaps sensing that their proposed second benefit of ePortfolios has the potential to be both thoroughly revolutionary and radically unimpressive, Blair and Takayoshi are tempted to strengthen the claim beyond supportability. At least, they do not adequately support the stronger version: encouraging. They are clearly aware of the distinction between allowing and supporting, noting that "hypertext in and of itself does not displace traditional notions of textuality, including notions of linearity that limit the potential benefits to the use of such electronic texts" (363). And yet, just a few lines later, they argue, "Working in HyperCard, Patti was forced by the technology to think about the relationship between the parts of her portfolio" (363). "Forced" sounds a lot closer to "entailed" than to "encouraged"; it's certainly on the right-hand side of the continuum.

But in what sense can we say that "Patti was forced by the technology" to do anything? If significant evidence of this thinking about relationships appeared throughout her portfolio, the most we could say, based solely on that evidence, is that the

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technology *allowed* her to do that thinking. However, in Patti's case, as Blair and Takayoshi themselves call our attention to[20], we can't even make that claim because there is no evidence that Patti did think about relationships.

We may not ever be able to collect sufficient evidence to support a claim that ePortfolio technology forces, let alone entails, writers to organize their thinking and writing in multiple ways. We could apply scientific methods to look for statistical correlations between complexity of organizational structures in student portfolios and the media through which they present them. The stronger the positive correlation between use of ePortfolio technology and organizational complexity, as evidenced by the students' writing, the more we would approach the center of the continuum: encouraging. But it's important to point out that in such a hypothetical study, the attribution of complexity would be highly debatable. Raters would need to be attuned not only to evidence of complexity as manifested in surprising hyperlinks (the kind Nicholas Burbules might refer to as catachretic[21]) but also as manifested in surprising metaphors, parenthetical asides, and other non-digital-yet-perhaps-proto-hypertextual features.

Other Arguments for ePortfolios

But perhaps such methodological musings are a bit premature. I've placed ePortfolios' functionality (or lack thereof) with respect to encouraging complexity of organization at the center of my inquiry. I've done so because I believe that an increased

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[20] Blair and Takayoshi appear to be disappointed by Patti's performance for a reason largely unrelated to my inquiry. When they lament the fact that "users move throughout the document unidirectionally in an order set by Patti," they seem to be hoping she would have ceded more control to her readers. This signals to me that they were attending to literary affordances of hypertext, which may have distracted them from providing their own readers with more information about what Patti *did do* in her portfolio, rather than focus on what they felt was missing. My point is that *I* am not disappointed with Patti's performance, but rather with Blair and Takayoshi's analysis of it.

[21] I discuss Burbules' ideas about hyperlinks as rhetorical tropes at length in Chapter Four.

number of connections drawn by students between their educational experiences, and the creativity with which they draw such connections, textually manifested as organizational complexity, foster elaborative encoding, which itself supports the development of a rhetorical repertoire with many connection nodes that facilitate ready retrieval for application to new rhetorical situations. This belief has led me to dismiss many of the other purported benefits of ePortfolios as largely irrelevant or at least beyond the scope of this dissertation's inquiry. Boosters of ePortfolios would almost certainly insist that the other benefits of these modern marvels cannot be so easily dismissed. Therefore, it behooves us to take a brief look at these other benefits, in order to determine if any of them have more of a bearing on the issue than I have thus far given them credit for.

Blair and Takayoshi conclude their article by arguing that if the ePortfolio is just another assessment tool, it's not worth the costs associated with purchasing and maintaining the necessary hardware and software, as well as the costs in time and energy spent by teachers and students on the learning curve.[22] However, they argue, if ePortfolio's expand literacy and develop skills that are more workplace relevant, they may be worth the investment (369). As the note below promises, a return to the issue of expanded, hypertextual literacy is forthcoming. But before making that return trip, I'd like to deal with the issue of workplace relevance.

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[22] Writing in the early 1990s, L. M. Dryden suggests that some of what contributes to the learning curve associated with ePortfolios (namely, the nonlinearity of hypertext) is "more likely to perplex doggedly Gutenberg text-based scholars and teachers than to bother contemporary teenagers who have grown up with computerized choose-your-own-adventure video games" (284). I will return shortly to an extended discussion of the cognitive challenges and opportunities afforded by hypertext. For now, I simply wish to point out that the learning curve to which Blair and Takayoshi seem to be referring more narrowly includes software and hardware training. In both cases, my own experiences in teaching college composition with computers in the 21st Century have convinced me that it is a mistake to assume that students of the Digital Age come to class prepared to engage meaningfully with digital technology. College students may not be Dryden's "doggedly Gutenberg text-based scholars and teachers" or Welch's "print-imprinted intellectuals," but that doesn't mean they are by default highly digitally-literate, either (qtd. in Hobbs 27). I continue this discussion, with Nicholas Burbules, in Chapter Four.

The Business End of ePortfolios

I am not unconcerned with my students' economic futures. I do not bristle at the notion of composition as a service discipline. That said, I am not convinced that arguments linking ePortfolios to increased employability should be uncritically accepted as support for their use in composition classrooms. Such arguments can be usefully placed in two categories: worldware and résumés. Worldware arguments are more easily dismissed as irrelevant to our inquiry.

The concept of worldware is itself useful and not to be dismissed. Explaining its origin, Stephen Ehrmann writes, "Ironically, while software designed for learning has had a hard time finding a postsecondary market, most software used for learning was *not* designed for that purpose. 'Worldware' is the name we gave such software. Worldware is developed for purposes other than instruction but is also used for teaching and learning" ("Asking the Right Question"). Ehrmann goes on to explain,

> Worldware packages are viable for many reasons: they are in demand for instruction because students know they need to learn to use them and to think with them; faculty already are familiar with them from their own work; vendors have a large enough market to earn the money for continual upgrades and relatively good product support; and new versions of worldware are usually compatible with old files, thus, faculty can gradually update and transform their courses year after year without last year's assignment becoming obsolete.

For the most part, I agree with the four claims embedded in that explanation of worldware's viability as it relates to academic settings. Certainly, when compared to

software designed for computer-based learning (CBL), worldware does have these relative advantages. Students don't come to class demanding to use WebCT because they know future employers will only hire them if they know how to use WebCT. Faculty learning curves are less steep, or even effectively nonexistent, with software used in their particular fields; social scientists use statistical software packages to do their professional work, for example, so asking their students to use the same software requires no new learning for the faculty members (which is not to say that the students have no learning curve or that knowing how to use software equates with knowing how to teach others how to use it). Worldware vendors certainly do have enough money for continual upgrades. But one of the reasons they do have all that money calls attention to a connection between Ehrmann's third and fourth reasons for worldware's viability. As he says, there is a large enough market to support continual upgrade. Increasingly, that market is held captive by software vendors via intentional confounding of Ehrmann's fourth reason: version compatibility. The concept of keeping customers in the product stream demands that a new version of a software product only be compatible with the most recent version being replaced. Absent that restriction in flexibility, there would be insufficient motivation for customers (other than early-adopters with excess disposable income) to purchase upgrades, particularly when the upgrades have largely been released to create compatibility restrictions and only marginally to provide substantive extensions of or improvements in functionality.

But returning to the idea of skills transferable to the marketplace, Phillip Kent applies Ehrmann's idea in a way that I find troubling. Advocating academic use of worldware over CBL software, Kent writes,

> [T]hese products are powerful pieces of software whose functionality goes
>
> beyond what CBL materials do with them; students develop skills in using
>
> the software which they can apply directly in studies and work later in
>
> their careers. Indeed we can soon expect all undergraduates, and their
>
> future employers, to be demanding proper training in appropriate software
>
> during degree courses. ("Why we should be using 'worldware'")

Again, I'm not troubled by the notion of preparing students for the work world—quite the

opposite. I would argue that helping students "develop skills in using the software which

they can apply directly in studies and work later in their careers" is a dangerously

counterproductive strategy, for several reasons. Students don't always go into the fields

they think they are going to go into when they're in college. Even if they do, they are

very likely to change careers several times during their work years. Even if they don't,

the software is very likely to change.[23] The point is that students do not need to know

how to use specific software; they need to know how to learn how to use software.

From Worldware to Résumés: A Case Study

A bridge between notions of ePortfolios as worldware and as résumé repositories,

as well as the constraints of a product stream, can be seen in the following case study. In

2007, Washington State University purchased a Microsoft Office SharePoint Server

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[23] This seems to me to be such an obvious claim, especially when considering the product stream model of software development and the manufactured obsolescence at its core. But it bears repeating because of a certain software company's dominance of the market. Urging compositionists to interrogate the technology in their classrooms, McGee and Ericsson point out that among the ways in which the Microsoft Grammar Checker "exerts its influence [is] the corporate cache of Microsoft itself […]. Although tarnished by the monopoly trials that began in the late 1990s, the corporate image of Microsoft still shines as the standard bearer of the operating system and software world" (462). This shining, steadfast image can lull us into assuming that all students will move into careers mediated by Microsoft products. With the proliferation of open-source software and business mash-ups, such a monolithic software marketplace is becoming less and less a fait accompli.

(MOSS 2007), and the WSU Center for Teaching and Learning with Technology (CTLT) has since been promoting the use of SharePoint for student ePortfolios. In early 2008, a Microsoft representative, identified in the transcript as MH and referred to at one point as Melanie, interviewed several CTLT employees. The transcript of that discussion, titled, "Washington State University MOSS 2007 case study customer interview," is accessible on the World Wide Web through a Google search.[24] There is some debate within the transcript about who its intended audience is, but ultimately Damian, the Microsoft case study manager, makes it clear: "MS would prefer the audience to be anybody, but the IT decision makers are the sweet spot."

After briefly discussing the institutional factors that contributed to purchasing MOSS, the conversation turns to ePortfolios. Nils Peterson of the CTLT explains,

> I was struggling with the problem about how do we learn more about SP
> [SharePoint] and ways that it might be pursued as a portfolio tool that
> might get outside of the university and the innovative direction. So it was
> an R&D [research and development] question and how could we do that
> R&D fast and the idea was to learn from students. WorldWare look that
> up in Wikipedia. That would give you some of the context of our thinking
> about SP vs. a vendor product like BlackBoard or Secai?

It's not clear how Peterson sees the concept of worldware as providing context, but Theron Desrosier, also of the CTLT, immediately clarifies: "We are really interested in the idea of student engagement and students are interested in relevance and they will not

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[24] I make this point about the transcript's accessibility because despite textual indications that it was not necessarily meant for publication (e.g., numerous typos and an informal tone suggestive of either a belief that no one would read it or a lack of rhetorical awareness), it is in fact published and available to anyone with access to the Internet.

graduate and got to work and use BlackBoard." MH attempts to make sure the value of worldware is highlighted, and Desrosier obliges (though with a somewhat cryptic qualification): "MH: So they want to be well versed in the technologies when they leave school? TD: Although helping them understand another part of our work. Yes. I think that's correct." The conversation shifts again, making it impossible to determine what Desrosier means by "another part of our work." It may be an attempt to broaden the application of worldware; but clearly, whether that is the intent or not, the Microsoft representative has what she needs and is thus ready to move on.

MH goes on to ask a convoluted question that embeds an interesting tactic for an implied strategy of aligning WSU's business goals with Microsoft's.

> How are you going to take what you have learned so far and integrated and it seems to be and we didn't ask this at the beginning, one of the things that WSU might differentiation itself by is the integration of technology with learning. How are you going to evangelize this with the rest of the faculty and what are your golas in terms of promoting the ePortfolio experience within the curriculum?

WSU will, through CTLT's evangelizing of the ePortfolio experience, differentiate itself. These are not crass matters of corporate earnings or business model academics, though; the language of religious conversion lifts us above such base concerns. Damian expresses his surprise and pleasure about this apotheosis: "To me what I like about this story is the two sides working together with the nobility of improving interaction. This is a unique, the other stories in the corporate sector that I work on with Melanie are more

about ROI [return on investment] and cost savings, in this case it's more." Or at least, everyone wants it to be about more than business.

But in the midst of the ascension, CTLT's Gary Brown attempts to bring everyone back down to earth. Returning to the issue of intended audience, he says, "This is not all sweetness and light here. We are bashing our head on some SP non features. To the extent that the product team thought we were interesting, we have some things to share with them. That what I would hope to do is to reach into MS in other ways." After some examples are given of technical and organizational problems, Microsoft's Melanie and WSU IT director Debbie Lawson take a trip down to the water of the product stream.

> MH: Right we didn't get into the discussion of the deployment and how
> you worked with MS to do that.
>
> DL: Painfully.
>
> MH: Oh dear.
>
> DL: It was pain worth doing, we needed to get to 2007 you had re
> architected the whole product. We couldn't roll out to the whole
> institution because you had changed it so dramatically and remarkably and
> so in order to find the integration with the others on campus that were
> going to integrate this, we needed to get to 2007, beside the features that
> made it more beneficial to the end users for the portfolios that the CTLT
> folks talked about. These were crucial for their projects. The mundane
> underlying things about how to keep the technology supported.
>
> MH: Well, we are coming up to the end of the hour…

Lawson at least remembers to allude to the pedagogical uses of the technology that Damian found so noble, but the repeated reference to the need to "get to 2007" belies a lot of the talk of nobility. The University had to purchase the MOSS 2007 package or risk being left up the product stream without a paddle. It's difficult to tell whether Melanie's decision to wrap up the interview rather than respond to Lawson is based in the fact that this combination of relentless upgrading and cessation of support for previous versions is such a well-known aspect of Microsoft's business model that it needs no response or in the fact that it's such an unsavory aspect of the business model that Microsoft employees have learned not to engage in discussion of it.

But to return to the purportedly more noble applications of SharePoint technology at WSU, earlier in the interview Desrosier describes "our most formal initiative":

> We have 10 or 12 of our student affairs programs that employ students developing program and student portfolios and assessing their own work performance and we have brought in employers to evaluate the constructs that we use to assess student employment and we are using the SP portfolio in that environment with upper administration endorsing that initiative. Some interesting quotes come out of that some of our colleagues are saying this is exactly what we need our students to be able to do and it was talking to one of the MS employees who said it would be really nice for some of our HRS folks to have a selection of th4e best portfolios for recruiting and we are trying to put those pieces in place with a very rich collaboration with Career Services and Student Employment.

This initiative, at least Desrosier's description of it, hints at another connotation of the product stream, with college students as the products being streamed along to employment at Microsoft. Suddenly, worldware starts to make sense again, if the real world becomes equated with working for Microsoft. Melanie picks up again on the chance to promote the firm: "It makes the old fashioned resume look quite boring." And Desrosier revives the specter of spirituality: "They are calling them living resumes."

Résumés and Rhetorical Awareness

Lazarus allusions aside, many writers have witnessed ePortfolio's power to resurrect the résumé. Echoing the worldware-where-world-is-Microsoft argument, Flanigan and Amirian suggest, "Prospective employers, especially those in information systems (IS) recruiting, look for technical knowledge and proof of technical competence. Portfolios in digital form showing creative technical projects aid the student-interviewee to both tell about and show competencies" (103). They paraphrase Satterthwaite and D'Orsi as arguing "that a portfolio is a collection of easily portable artifacts that serve to validate claims people make about themselves" (103). This benefit of ePortfolios hearkens back to the way portfolios were used in the fine arts before composition imported the technology for pedagogical purposes. Designers and other artists have long used portfolios to accomplish what traditional résumés could not: a demonstration (as opposed to a summary) of abilities. It makes sense that for jobs requiring digital design skills, a digitized portfolio serves as a superior performance assessment tool over a paper résumé.

Phil Walz cites an American Association for Higher Education survey of 51 institutions using ePortfolios in which "Career and Resume Planning" ranks as the third

most common primary purpose of ePortfolios (17% of respondents) and the most common secondary purpose (23% of respondents) (195). For comparison, "Reflection" ranks as the most common primary purpose of ePortfolios, selected by 38% of institutions, and the third most common secondary purpose, selected by 14% of responding institutions (195). Writing about an ePortfolio project at an institution not included in the AAHE survey (Queensland University of Technology, Australia), Emmett, Harper, and Hauville describe a portfolio with five structural components, one of which is a "Résumé Builder" that provides a space "where students can create, release, and manage their résumés" (411). They argue that the QUT ePortfolio

> extends the student journey beyond the classroom: it allows students to write about their personal, community, and work life, as well as their life as an undergraduate and beyond. From the students' perspective it is holistic, allowing them to build a picture of themselves as a whole person, a picture that cannot be seen in an academic history or curriculum vitae alone. (411)

Clearly, the enhanced functionality that ePortfolios offer to résumé composers has caught the attention of a lot of people. And those benefits are available to more students than just the ones headed for careers in digital design and information technology.

Recalling Blair and Takayoshi's first proposed benefit of ePortfolios (an expanded notion of literacy), Dillon and Brown claim, "The digital medium at the heart of ePortfolios has provided a level playing field for different modes of expression, in particular for text, numbers, vision, and sound" (422). They argue, "A solid understanding of non-text digital representations is becoming increasingly important for

people in all disciplines, not only those in the creative arts" (422). Nonetheless, they call readers' attention to the usefulness of remembering the portfolio's deep connection to the fine arts.

> The act of taking an ePortfolio to a job interview with a potential employer is in fact a performance where the ePortfolio is used to support the live dramatic performance of the interviewee and a compelling performance for the audience. This is becoming common among teacher education students who not only want to present their résumé in more compelling ways but want to demonstrate their artistic control over information technology. (428)

Two important points arise from Dillon and Brown's argument. Being able to demonstrate proficiency with information technology is important for people hunting for jobs beyond the typically-conceived realm of information technology. Additionally, the metaphor of performance isn't really a metaphor at all. A job interview is a performance, and to the extent that ePortfolios not only support successful performance in that venue but also, in their composition, call attention to the performative aspect of interviewing, they facilitate the development of rhetorical awareness.

Writing about the underlying principles of the University of Washington's Catalyst Portfolio, Fournier and Satwicz state, "In order for *Catalyst Portfolio* to be an effective tool for demonstrating student learning, students should be able to present their portfolios to others online. The tool permits students to publish their portfolios to the Web for a variety of audiences," including "prospective employers" (1).[25] Although the

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[25] I am indebted to Phil Walz for pointing me to Fournier and Satwicz (although he cited them as Satwicz and Fournier).

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assumption is that portfolios are tools for demonstrating student learning (a holdover perhaps from the fine arts tradition, but also an indicator of the persistent evaluative aspect of portfolios), Fournier and Satwicz go on to describe focus groups with faculty members and academic advisors from whom they learned that "teachers, they thought, could help students develop criteria to guide their selection: What is the purpose of the portfolio? Which items from their collection are the *best* examples for their intended purpose?" and that "they felt that students should have opportunities to consider how, for instance, an instructor, advisor, potential employer or best friend might respond to the artifacts in the portfolio, the language and content of reflections, and the 'look and feel' (design) of the portfolio" (2-3). These are of course rhetorical concerns, and though the emphasis remains on external assessment of the portfolio, this shift toward paying attention to purpose and audience signals an awareness of the educational possibilities inherent in the composition of portfolios.

The CCCC position statement, "Principles and Practices in Electronic Portfolios," includes in its introductory premises the idea that ePortfolios can "display qualifications for employment" and "showcase job-related accomplishments beyond schooling, for evaluation or promotion." The statement's third principle, "Virtual Identities," states, "Students represent themselves through personalized information that conveys a web-savvy and deliberately constructed ethos for various uses of the e-portfolio." Faculty are encouraged to support students in these rhetorical efforts by "facilitat[ing] critical discussions of how writers represent themselves in online resumes, profiles, etc." and by "acquaint[ing] students with how they construct professional ethos in their own e-portfolios." The statement's fourth principle, "Authentic Audiences," states, "Students

engage in audience analysis of who they intend to read their e-portfolios, not only to accommodate faculty, but also employers […]". And faculty are encouraged to support students in developing the abilities to successfully perform such audience analysis by "ask[ing] students to discuss changes they would make to 're-purpose' e-portfolios for different readers, e.g., program directors in their major, prospective employers […]." The statement encourages the recognition of the rhetorical exigency of the job search as an opportunity to help students develop rhetorical awareness. This is a qualitatively different approach to ePortfolios than the worldware argument. In both cases, ePortfolios are being endorsed because of connections they provide to the world of employment. But while worldware arguments tend to devolve toward software training advocacy, résumé arguments tend to aspire to helping students develop critical thinking and rhetorical awareness. I would argue that there's nothing inherently wrong with encouraging the use of ePortfolios based on an argument of workplace relevance; the nexus of that relevance, however, should be résumés, rather than worldware.

The Centrality of the Link

But why is an ePortfolio a better tool for résumé composition and delivery than a paper version? Another way to ask this question is, how do we justify the investment in purchasing, maintaining, and supporting the technology demanded by ePortfolio projects, let alone the increased learning curve, if we dismiss the worldware argument? Recall that along with developing workplace relevant skills, Blair and Takayoshi argue that ePortfolios can be worth the investment if they support an expanded version of literacy. The second principle, "Digital Environments," of CCCC's "Principles and Practices in Electronic Portfolios" encourages faculty to "introduce students to concepts and

applications of visual rhetoric on the Internet" and to "help students experiment with multimedia possibilities for composing documents." We've examined the fact that the digitized substrate of electronic documents permits a relatively effortless shift toward multimodal and multimedia composition (relative to non-digitized media). Certainly, composers were including song lyrics and pictures in articles and books for centuries before digitization came along. But the material resources required to do so were so much more prohibitive (in the case of pictures)—if not entirely unavailable (in the case of turning song lyrics into audible music)—in a print-based world than they are in a digital world that composers were discouraged from composing multimodal and multimedia texts—again, at least relative to digital composers, who are by comparison encouraged to do so. That this shift not only permits but may even encourage the composition of texts that engage more aspects of more authors' (and readers') sensitivities and epistemologies is no small thing to notice. As we've seen, for example, a digitized résumé allows composers to demonstrate, not merely claim, proficiency with information technology.

To cite just one other huge implication of this shift, Patricia Dunn urges that "we should problematize issues *within* the classroom regarding who is being oppressed—and whose interests are being served—by unproblematized practical methods that are almost completely print-based" (46). Relying heavily on Howard Gardner's Theory of Multiple Intelligences, Dunn argues for classroom praxis "that both recognizes and takes advantage of the different ways people come to know" (58). To the extent that institutionalized education has been oppressing students who are better able to learn and to express themselves through movement, music, and visual imagery than through print media, and to the extent that digital environments can begin to redress that oppression,

the argument for ePortfolios becomes that much stronger. That is not, however, the argument I have chosen to take up in this dissertation.

My focus is on opportunities for reflection made possible by digital technology, and the most likely source of those opportunities is the hyperlink. The CCCC statement's second principle encourages faculty to "Teach students to use features of web-design in rhetorically effective and ethical ways (linking, choosing images, creating webpage formats)." Even more to the point is the statement's fifth principle, "Reflection and E-portfolio Pedagogy," which urges faculty to "Teach students different formats and forms that facilitate reflection on their learning at various stages of drafting and web-design (e.g., reflective cover letters that introduce and link readers to various artifacts; concept maps)." Furthermore, Principle #6: Integration and Curriculum Connections, discusses the ways in which students "use linking to represent how e-portfolio artifacts inter-relate with other courses in the larger context of whole-curriculum learning." The link, as its name implies, helps composers make connections, and making connections (as we saw in Chapter Two by looking at Schön's theory of reflective transfer and Schacter's theory of elaborative encoding) is what reflection is all about.

I have played the role of devil's advocate above by pointing out that print literacy has been exploiting mechanisms for associative thinking for centuries. I now wish to inhabit, temporarily, the opposite role.[26] While it's true that word processing software has made the insertion of digressive or merely commentary footnotes exceedingly easy (perhaps too much so for some readers' tastes, though parenthetical asides have always been available, as well—to say nothing of commas for nonessential modifiers and em

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[26] Although, as my discussion of spiritual allusions in the Microsoft case study transcript may have hinted, I'm a bit uncomfortable with the idea of taking on the role of god's advocate, particularly if it means prematurely deifying the hyperlink.

dashes for disjunctive musings), these remediated tracings from print literacy are not fundamentally altered by digitization. The hyperlink, on the other hand, could be seen as representing a fundamentally digital associative tool. To the extent that it is, it deserves attention as the key differentiating factor between paper portfolios and electronic portfolios, particularly with respect to supporting reflective thinking (and composing).

Focusing more on reading than on writing, Burbules draws significant distinctions between print and digital texts, and he places the hyperlink at the center of these distinctions. He argues,

> Printed texts are by nature selective and exclusive. Any page, any volume, can only contain so many words; it can refer to other texts, but accessing those involves activities of reaching to a shelf, or purchasing the book, or going to a library, and so on; activities that are not themselves reading, activities that require energy, time, and sometimes money that a reader may not have to spare. Hypertexts on the Web are by nature inclusive: texts can be almost any size one wishes; any text can be linked to a virtually unlimited number of other texts on-line; the addition of new links does not in any significant way detract from the text at hand; and accessing any of these textual links requires little time or effort. The key element in this hypertextual structure is the link. (103)

Burbules goes on to problematize the link, arguing for a practice of critical hyperreading that relies on noting the tropic qualities of links, which he sees as "associative relations that change, redefine, and provide enhanced or restricted access to the information they comprise" (103). This way of thinking about links is highly generative, but I believe we

can engage Burbules' ideas about them more productively by first taking a comparatively unproblematized look at links.

Links Handwritten and Hypertextual

Although it's quite common these days to refer to hyperlinks as merely links, perhaps in order to display an acceptable level of tech-savviness, there is at least one good reason to resist such sociolinguistic streamlining in this case. The fact is that people make links in lots of ways non-hypertextual. A brief browsing narrative can help draw out the obviousness of this claim.

I performed a Google search for "etymology of hyperlink." I'm aware that this isn't a particularly scholarly thing to do, but I believe it's a particularly relevant thing to do with regard to this topic. The first result "of about 17,300" offered by Google was a hyperlink to a threaded conversation on *Velocity Reviews* from 2005 titled, "Link vs. Hyperlink." JohnW starts by asking, "What, if any, is the difference between a link and a hyperlink?" Several people respond with attempts to construct a definition on the fly. Most attempts are circumscribed through the terministic screen of the discourse community. For example, Mark Parnell writes,

> IMO *hyperlinks* would be the links on a page that you follow to get to
> another file (e.g. another web page, image, video, etc.). *Links* are
> any link at all to another file - this includes hyperlinks, but would
> also include things like <link> elements - to stylesheets and
> next/previous page etc. Can't think of any other examples off the top of
> my head, but I'm sure there are plenty.

This is creative, functional etymology in action. But an even more creative response comes from Toby Inkster, who employs a previously unrelated terministic screen, in the classic Shakespearean way, for a laugh: "The chain attached to a ship's anchor isn't made of hyperlinks." This joke, as any pun would do, serves as such homely yet splendid ready-made support for Burke's famous dictum: "Even if any given terminology is a *reflection* of reality, by its very nature as a terminology it must be a *selection* of reality; and to this extent it must function also as a *deflection* of reality" ("Terministic Screens" 45).[27] Parnell, immersed in a Web-centric discursive milieu, "can't think of any other examples off the top of [his] head" of a link that is neither a hyperlink nor a link to another digitized file like a stylesheet, but he's "sure there are plenty." Of course he knows, just as Inkster does, that the word predates computers. But the same set of discourse conventions, the same terministic screen, that makes "IMO" not only intelligible to his intended audience but also a marker of his status as a discourse community insider[28] deflects Parnell's attention away from that knowledge.

The point of that entertaining little story is that immersion in the new can interfere with our remembrance of the old. As I've argued, writers have been weaving texts by making associative connections for centuries. And we don't have to limit the range of our hearkening to this history to the invention of the printing press; links were being

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[27] By the way, this is a good spot to insert a (non-hypertextual though certainly intratextual) link to Chapter Two's discussion of the way the selection performed by a student during the composition of a portfolio can be seen as a type of reflection, as well. With Burke's help, we can recognize that each item selected *out* of the portfolio represents educational experiences deflected from reflection, at least the kind of reflection that is made available for readers' consumption.

[28] I say it's a status marker because of the contradiction between the putative attempt to save keystrokes by typing "IMO" instead of "in my opinion" and the willingness not only to respond to a stranger's post but to invent (and type out) a paragraph-long etymology.

made in handwriting long before then, and they're still being made that way in the 21st Century.

A comparison of two portfolio tools, one pen-and-paper and one electronic, hints at the range of possibilities afforded by links. The Washington State University Junior Writing Portfolio includes a handwritten, timed-essay response to one of several possible prompts. In 2006, a group of prompts were used that asked students to reflect upon their lower-division coursework through the lens of the University's Six Learning Goals of the Baccalaureate. Students were prompted to connect experiences in specific classes with specific learning goals. These connections can be read as handwritten links.

Also writing in 2006, Walz describes a career ePortfolio project at Florida State University that uses a skills matrix, in which "specific developmental skills are cross-referenced with ePortfolio categories, for example, communication skills could be cross-referenced to specific courses and/or professions" (202). Walz provides a graphic example of the skills matrix that has rows labeled with skills (e.g., communication, creativity, critical thinking, leadership) and columns labeled with experiences (e.g., courses, jobs, service, life experiences) (202). The cells of the grid are all filled with the label "*Link*" (202). The result is a table that might look something like this:

	Courses	Jobs	Service
Communication	*Link*	*Link*	*Link*
Critical Thinking	*Link*	*Link*	*Link*

Walz makes some extremely large claims about the value of skills matrices, claims that are visually challenged by the simplicity of the grid he provides.

> A skills matrix provides students a context in which to understand how to acquire and employ the skills they accumulate over the course of their college career. A skills matrix also allows students to see the big picture in terms of their educational requirements, to visualize a trajectory of their development, and to articulate competencies and experiences to employers and graduate schools in a more concrete manner. (202)

Whether or not the matrix actually does all this for FSU students, and whether or not WSU's reflective timed-essay prompt helps its students connect educational experiences to learning goals, is a question that would likely require at least two dissertations to begin to address. My goal for this brief inquiry-within-an-inquiry is much more modest in scope. I simply want to look at the affordances for reflection suggested by the two approaches, particularly with respect to the way links are being employed.

The WSU reflective timed-essay prompt contains the same set of instructions for student writers, regardless of the particular combination of two learning goals about which they are asked to reflect. The instructions read, in part,

> On the first page of your bluebook, make some notes. In particular:
>
> - Identify your chosen major;
> - List at least five of the most important courses you have taken so far;
> - Briefly note why each of those courses is so important.
>
> Washington State University has established several broad expectations that all students must meet. Using the courses you have listed

(supplemented as appropriate with information about other courses or experiences) as your evidence, write an essay in which you reflect upon and demonstrate ways you have addressed the following goals:

[*Two learning goals appear here, with their respective competencies.*]

As you compose your essay, pay direct attention to how these courses and experiences address the competencies listed above.

The students are being asked to construct a set of associative links between courses and experiences at one terminus and the specified learning goals at the other. The framework provided by the prompt instructions serves as a skills matrix in non-graphic form. Washington State University's Six Learning Goals of the Baccalaureate are published on the school's Web site and appear on hallway posters and in orientation brochures. The shorthand labels for the goals are Critical and Creative Thinking; Quantitative & Symbolic Reasoning; Information Literacy; Communication; Self in Society; and Specialty. Because the goals are not required elements of course syllabuses, and because students are deluged with a large volume of information during orientation (and while text messaging as they walk through the halls), it's quite possible that students do not possess a high level of ready familiarity with them. The connections prompted by the timed-essay exam can thus be seen as connecting the known with the new. To use Perkins and Salomon's terminology, students are presented with a backward-reaching, high road transfer opportunity (26).

When students apply their curricular experiences to the learning goals they have been confronted with, they engage in reflective transfer. When they engage in this cognitive process of making meaning out of the (perhaps unfamiliar) learning goals by

connecting them to memories of those curricular experiences, they conduct elaborative encoding. As we saw in Chapter Two, Schacter argues,"If we want to improve our chances of remembering an incident or learning a fact, we need to make sure that we carry out elaborative encoding by reflecting on the information and relating it to other things we already know" (45). It would therefore be reasonable to expect that students who take this exam will be more likely to remember the Six Learning Goals (or more precisely, the two they are given by the prompt). By the same token, we could expect that they will be more likely to remember the curricular experiences they link to the learning goals. The handwritten links provide readers of the student essays with bridges between experiences and goals; those same bridges provide student writers with complex engrams that are accessible through multiple retrieval cues—those that call on the learning goals and those that call on the learning experiences.

The prompt for the WSU reflective timed-essay instructs students to write a second essay. The instructions for this Part Two essay read,

> As you look back on your undergraduate experiences to date, both inside and outside the classroom, write a short essay about an accomplishment you have made that is not reflected in the goals you addressed above. Why is that accomplishment important to you? What does it say about you as a person? How does it add to or complete the picture of yourself that you have given in Part One?

This second essay provides an opportunity for elaboration by negation; the student is asked to construct a link to memories *not* relevant to the learning goals. But because the goals are mentioned in the instructions, along with the essay composed for Part One, the

elaboration, the link, is connected, by negation, to the experiences remembered in Part One and to the goals that were linked to those experiences. The link also is co-constructed, by the prompt and the student writer, in a cross-temporal fashion. That is, the writer is instructed to "look back" to the past and look forward to how it adds to or completes "the picture of yourself" that the student is in the process of constructing during the timed-write examination period. Sitting in the seat of the transient present, the writer calls on memories of the past to present as evidence in the construction of an argument that takes the form of a picture that will be scrutinized by a faculty member in the future.[29]

The WSU Junior Writing Portfolio, with the experimental reflective timed-essay prompt, seems to call for quite complex associative thinking (and linking). But without the graphically-generative support of the FSU skills matrix, as reproduced by Walz, are the WSU students comparatively under-supported in their efforts to elaborately encode connections between their learning experiences and such external criteria as university learning goals? To frame the question differently, can we theorize any reason for an increase in quantity or quality (specifically, complexity) of associative linking in the digitized, hypertextual space of the FSU career portfolio?

One obvious difference that could certainly have a significant impact on quantity and quality of linking is that the WSU instrument is a timed-essay, while the FSU instrument is not. Students at WSU have an hour and a half to compose the two essays in

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[29] We may well wonder whether the student writer, while writing, holds an image of that faculty member reading the bluebook in the near future. Evidence in the instructions supports an assumption that at least some student writers would be holding such a mental image: "The faculty who read and evaluate this essay will be looking for your ability to focus your writing; to organize what you have to say in ways that make your perspective accessible to a reader; to use evidence that supports and clarifies your major assertions; to write with fluency; and, within the obvious limits of a timed writing, to use the conventions of standard written English."

response to the reflective prompt. Students at FSU presumably have months, even years, to return to the career portfolio and add links to the skills matrix. This difference in presumed time on task, as well as the possibility of increased anxiety due to the timed nature of the WSU exam, makes comparison with the FSU career portfolio not merely a matter of apples and oranges, but perhaps something more akin to a comparison between an apple and the life cycle of an orange tree. The seeds of the entire process are in the apple, but the entire process actually plays out for the orange tree.

But we could just as easily ask the WSU student to keep a written journal throughout the undergraduate years and periodically add links between experiences and the learning goals as we could ask the FSU student to embed the hyperlinks between the developmental skills and the ePortfolio categories in a timed-exam setting. Hypothetically controlling for differential effects of time on task and test anxiety, then, would we still be left with theoretically significant differences in linking performance? The FSU skills matrix, using hyperlinks, would seem to facilitate incorporation of more textual material than the WSU handwritten reflection would. I could imagine an FSU student constructing links to texts he or she has composed and to those composed by others, including Web sites with their own chains of embedded links. In theory, the FSU student could incorporate the "virtually unlimited number" of texts Burbules refers to merely through a process of stringing together a similarly unlimited number of mouse clicks. Although the WSU student could allude to a virtually unlimited number of texts by referencing them in her or his journal, the actual texts could only be actually incorporated by virtue of a Herculean effort of transcription and/or photocopying.

But what does this hypothesized difference amount to? For whom does it matter? Readers of the two portfolios would have very different reading experiences. Reading the FSU portfolio would be a matter of following the author's links to texts that purportedly serve as evidence of skill development. The particular skill, and the domain within which evidence of it can be found, are indicated for the reader by the position the link holds within the graphical matrix. The author provides those contextual cues for the reader merely by choosing which box to put that particular link in. No more explanation is required.

The reader of the WSU portfolio would not have the benefit of seeing the entire version of the texts linked to, nor the benefit of the readymade labels provided by the links' spatial positioning within a graphical matrix. Because of this apparent shortcoming of handwritten links as opposed to hyperlinks, more explanation would be required. The author would have to explain not only what the texts linked to contain, but also how they can be read as demonstrating evidence of the linked-to skills. This is almost certainly much more time consuming, and so we could expect far fewer links. But I want to argue that isn't necessarily a bad thing. To be sure, the reader of the handwritten reflection would be robbed of the opportunity to see and hear multimedia texts that the reader of the ePortfolio might have access to. The first reader would also have less opportunity to verify that the linked-to text actually demonstrates what the author claims it demonstrates. In both cases, the responsibility would fall on the author to make up for these impoverishments of opportunity by explaining what the texts are in vivid enough detail for the reader to visualize them and by arguing for a particular reading of those texts that turns them into evidence in support of the claims that they

demonstrate specific skills. This may make for a more difficult evaluation on the part of the reader. It almost certainly makes for a more difficult compositional task for the writer. Since I am far more interested in portfolios for their formative assessment value than for their summative assessment value, I see the extra work (in terms of increased audience awareness and the explicative effort called forth by that awareness) demanded of the WSU paper portfolio composer as an overall asset of that tool, rather than a liability, when compared to the FSU ePortfolio.

Where do we link to from here?

The prompt-driven, largely hypothetical, comparative study of the FSU and WSU portfolios has led to a rather premature dismissal of the complexities offered by the hyperlink. However, such a hypothetical study can be suggestive of themes to look for when shifting to other modes of inquiry. For example, when we look at examples of portfolio composition, will we see an impoverishment of elaboration in students' ePortfolios, as anticipated by the hypothetical study?

Before taking up that question in Chapter Five, a crucially important theoretical strand must be followed up on. In this chapter, we have come across the hyperlink as a key element of the electronic portfolio. The idea of embedding associative links within texts is certainly nothing new, but there has been much written about the new possibilities opened up by the hyperlink. Although this element is a salient feature of ePortfolios, attempting to embed a theoretical discussion of it within the ePortfolio chapter will not do it justice. The hyperlink, perhaps above and beyond all its other qualities, functions within a realm of infinite (and yet infinitely tractable) space. Chapter Four serves

therefore not as an attempt to circumscribe this bounder, but to provide it with some

space of its own within (and certainly beyond) which to roam.

CHAPTER FOUR

HYPERLINKS

> One of the great values of creative work, as in writing,
> painting, or any art, is that it promotes a constructive,
> although unconscious, playing with meanings in their
> relations.
>
> — John Dewey, *How We Think*, 183

In Chapter Three, I argue that associative linking devices have been exploited by thinkers and writers both long before the advent of electronic media and ever since. It seems reasonable, then, to demand of the hyperlink, "What's so different about you?" In order to begin to address that question, we have to accept a few postulates, recognizing, as we've done before, that they are elements of the fragile foundation of whatever house of cards we may eventually build atop them. Keeping this in mind threatens the value of neither the cards nor the house constructed of them; it does, perhaps, protect us from the dangers of putting too much weight on the roof if we try to make sweeping generalizations without remembering what we started with.

Two such postulates are embedded in Ilana Snyder's definition of hypertext: "Hypertext—a way of connecting text, pictures, film and sound in a nonlinear manner by electronic links—exists only online. Hypertext is fully electronic reading and writing. Hypertext differs from printed text by offering users multiple pathways through a web of information" (xxvi). First, because the connecting so fundamental to hypertext is accomplished via electronic links, these hyperlinks are what make hypertext hyper. They are not exactly identical, but they are inseparable in any but the most abstract conceptualizations. Where hyperlinks are deployed, a hypertext is constructed. Where a

hypertext is detected, it is the presence of hyperlinks that allows such detection. Therefore, any investigation of the one must involve an inquiry into the other. Though we may find ourselves talking about hypertext, the focus of such talk will always be the hyperlink.

Second, although we could certainly quibble with Snyder's assertion that printed text does not offer users "multiple pathways through a web of information,"[30] to do so would likely get us no closer to discerning the hyperlink's distinctive qualities, so we will tentatively accept the implication that the hyperlink's domain is an electronic one. To sum up, then: when we talk about hypertext, we are also talking about hyperlinks; and when we talk about either, we're talking about electronic environments. This is a rather generous bit of stipulating early on in a chapter, but I don't want to convey the impression that we will be proceeding by capitulation alone throughout this chapter. As Snyder herself offers, "Hypertext certainly has much potential in educational settings but, I suggest, its influences are best examined with dispassion and more than a modicum of scepticism" (xxvi). We will, accordingly, keep a check henceforth on the generosity with which we accept further postulates.

In an essay in the same collection that includes Snyder's definition of hypertext, Hawisher and Selfe, not operating under the constraints of extremity demanded by the composition of definitions, soften the distinction between print and electronic spaces by including a reasonable, qualitative qualifier. They write, "If [hypermedia environments] are used to allow readers and writers to make their own connections (with a speed that is unknown in print contexts) and then to create new knowledge from these connections,

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[30] I have in fact preemptively quibbled with this notion of print text as relentlessly unilinear in more than one location in Chapter Three. The reader is encouraged to follow that thread, either now, later, or never.

they suggest a new instructional medium that we have only begun to imagine, much less study" ("Reflections" 11). When ePortfolios take advantage of this qualitative edge, with respect to the speed with which hyperlinks can facilitate connections *and* the creation of knowledge from those connections through reflective metacommentary, they are absolutely worthy of study. And by virtue of their centrality in the preceding proposition, hyperlinks obviously must be a focus of the study they support.

In "Beyond the Hype: Reassessing Hypertext," Snyder charts the progress that led from, in the 1970s, "the enthusiastic rhetoric of techno-evangelists who believed that simply giving students computers to use as writing machines would improve the quality of their writing" (125) to a similar enthusiasm that had, by the 1990s, suffused discussion of hypertext. As we see in the MOSS 2007 interview transcript analyzed in Chapter Three, the unabashed embrace of evangelism as a metaphor for spreading the good news of technological tools for education has persisted in the new millennium. And in the case of a software vendor, we would actually be quite surprised if this were not the case. Although focused more exclusively on the Internet, Clifford Stoll's heretical critique of the market forces behind the 1990s rush to get everyone online, *Silicon Snake Oil*, may have been equally applicable to the buzz about hypertext then and the buzz about ePortfolios now.

Seemingly challenging the central tenet of my decision to devote a chapter of my dissertation to the hyperlink, Snyder writes, "The idea that hypertext linking is so revolutionary that it enhances whatever the author is writing about is like the belief that simply giving a writer a word processing machine improves writing" (128). She sees this as an example of technological determinism, by which she means "the assumption that

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qualities inherent in the computer medium itself are responsible for changes in social and cultural practices" (132). She goes one step further, clarifying the dyslogistic stance she takes toward technological determinism, by arguing that "to hail [hypertext technology's] advent as the beginning of a social and educational revolution is politically naïve" (133). Of course, like anyone else, I don't want to come across as naïve, especially in a dissertation. But I do believe the hyperlink is a crucial element of ePortfolio technology, the element that must be investigated more thoroughly in order to maximize the ePortfolio's positive educational impact and to insulate against a naiveté that would leave educators vulnerable to the claims of snake oil salesmen (and saleswomen).

Despite her earnest efforts to maintain a level of scepticism, and her determination not to succumb to the carnival barking of technological determinism, Snyder allows herself to jump on the hypertext bandwagon occasionally.

> Because hypertext easily accommodates interdisciplinary approaches to literary studies, teachers can use it to develop and extend their students' ability to think critically and make connections between discrete bodies of information. The electronic facility to make such connections speeds up the development of skilled reading and creative thinking. The instantaniety of hypertextual links also permits and encourages sophisticated forms of analysis. (135)

In this passage, we see some huge and familiar claims, all resting on the stack of turtles that is the hyperlink. Beyond extending critical and associative thinking (no small accomplishments, to be sure), here the speed associated with hyperlinks noted by

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Hawisher and Selfe shifts quite smoothly into an ability to speed up development of creative thinking and skilled reading.[31]

To be fair, Snyder quickly jumps back off the bandwagon. After citing a laundry list of hypertextual boons for writing instruction offered by Johndan Johnson-Eilola, she acknowledges, "It is difficult, however, to produce research data that support these claims" (136), adding, "At present, information about the connections between hypertext and the development of writing still largely depends on anecdote and prediction" (137). This hints at the question of preferred research methodology, and I would agree with the implication that anecdote and prediction are insufficient evidence to support uncritical integration of hypertext technologies into the composition classroom. I would also point out a significant qualitative distinction between anecdote and case study, the method I employ in Chapter Five. The distinction is thick description; a case study approach demands description not only of what someone says and/or does, but also an exploration of why it's being said or done, based on contextual evidence.

Among the boons Snyder sees being offered up by Johnson-Eilola is "the possibility for promoting associative thinking" (136). Actually, turning to the essay of his that she cites for this claim, we find that it isn't Johnson-Eilola's claim, after all. "Structure and Text: *Writing Space* & STORYSPACE," an early (1992) theoretical discussion of hypertext's applicability to the composition classroom, is an interesting hybrid artifact of the educational technology gold rush. Announcing in his introduction, "What I am aiming for now is not so much an overview or response to *Writing Space* and STORYSPACE as an extrapolation of them into the context of composition," Johnson-Eilola adds nobility (as the Microsoft employee cited in Chapter Three might call it) to

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[31] A notion addressed directly by Burbules, to whom we shall turn later in this chapter.

the discussion of a specific hypertext software product: STORYSPACE. Like Jay Bolter's *Writing Space*, which is both a theory-rich intellectual exploration of hypertext and an extended advertisement for STORYSPACE, "Structure and Text" simultaneously explores hypertext theory in a rigorous way and pitches[32] STORYSPACE to the compositionist readers of the journal in which it was published: *Computers and Composition.*

A Suggestive Study

Johnson-Eilola attributes the claim (attributed to him by Snyder) for hypertext's "possibility for promoting associative thinking" to Beeman et al's "Hypertext and Pluralism: From Lineal to Non-lineal Thinking," a paper presented at the 1987 Conference on Hypertext and Hypermedia that describes the Brown University Educational Software Project (ESP). Drawing a line of connection between the almost wholesale adoption in American academic circles of the Sapir-Whorf Hypothesis (in either strong or weak form) that "there may be a linkage between the language one speaks and one's patterns of thought" (68) and theories of developmental cognitive psychology deriving from Bernstein, Perry, and Piaget, Beeman et al reach the conclusion that "in the United States higher education has traditionally been seen as contributing to an ongoing human ontogenetic process" (68). This tradition they see culminating not only in a belief that higher education is involved in changing the way students think but that specifically, "The cognitive style most widely fostered in American and Northern European post-secondary education today is the promotion of pluralistic, integrated thinking, whereby students are encouraged to see the phenomena of

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[32] I don't mean to minimize the generative aspect of either Bolter's or Johnson-Eilola's work; nonetheless, statements by Johnson-Eilola such as, "The difficulties in reading *Writing Space* and working with STORYSPACE are well worth the effort" justify, I believe, my use of the term *pitch*.

the world in interrelated relativistic terms rather than as isolated bits of information" (68). This cognitive style, which Beeman et al connect to Ashby's notion of post-conventional thinking via Entwhistle and Ramsden's idea of critical thinking, is associative because it emphasizes relativism and contextuality. By choosing to call it the pluralistic cognitive style, Beeman et al emphasize the developmental shift from dualism toward relativism Perry found in his studies of Harvard students. For my purposes, I am more interested in the aspect of pluralism that emphasizes contextuality. I don't believe I'm substantively misapplying their work, however, because by using "non-lineal" appositively to "pluralistic," Beeman et al leave the door open to my use of "associative" as an appositive to "non-lineal."

Beeman et al suggest that we see pluralistic cognitive integration "in the expertise and facility of the most revered experts in any discipline, who are able to encounter new phenomena and interpret them correctly[33], seemingly without thinking" (69). This is very similar to the reflective transfer ability Schön celebrates in reflective practitioners, although Schön would likely amend "correctly" to "effectively." In order to support movement toward this type of thinking, and to attempt to overcome what Beeman et al refer to as the "paradox in post-secondary education [being] that the ideal on non-lineal knowledge is approached through lineal communication, presentation, and instruction" (69), the Institute for Research in Information and Scholarship at Brown developed a hypertext software program called Intermedia. As Beeman et al describe it, "One of the key aims of Intermedia was to provide the ability to link different materials creating

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[33] Providing inadvertent evidence of the difficulty in attaining and sustaining a pluralistic cognitive style, Beeman et al demonstrate a persistent attachment to dualistic thinking: phenomena can be interpreted "correctly."

semantically meaningful relationships between different information and ideas" (71). Multimedia functionality and hyperlinks were combined in a platform that would support making these connections visually, on the screen.

Two instructors developed course material using Intermedia, and the ESP used observational methodology to assess the program's effect on student learning outcomes and perceptions. The findings were mixed in a highly suggestive (for my study) way. The researchers found positive effects of Intermedia in measures such as ratio of instructor questions to student questions and quality of essay examinations. One teaching assistant "felt compelled to assign five students grades in excess of the theoretical maximum for the examination. The students receiving these high grades were among the highest users of Intermedia" (76). Students reported in interviews that they couldn't discern exactly how Intermedia helped, but that they found it helpful; Beeman et al see this as evidence of developing a "non-lineal appreciation" because the students couldn't untangle the various influences from different instructional materials (77). This is perhaps a bit of wishful thinking on the observers' part. But they do not overreach in their conclusions: "We are not certain whether the students' exposure to Intermedia fostered the same type of learning effects" (81). They are referring to a teaching assistant who helped develop the Intermedia materials for an English literature survey and who experienced a significant expansion in her conceptualization of the literary canon in the process.

The apparent difference in effectiveness of working with Intermedia between designers and users is attributed by Beeman et al to time on task: "The fact that persons involved in creating the materials used in teaching experienced a powerful reorganization

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of their own thinking regarding these materials suggests that increased use of Intermedia results in cumulative reinforcement of pluralistic, non-lineal thinking" (81). And that explanation makes sense. However, another plausible explanation is much more useful for an investigation of beneficial effects of hypertext in ePortfolios. The students in the ESP study were using Intermedia as passive readers, whereas the teaching assistants were composing with the system, creating the links, rather than merely following them.

Reading, Writing, and the Memex

A focus on the reading experiences supported, encouraged, and/or demanded by hypertext has persisted throughout the history of the form, resulting in a relative blind spot with regard to the writing experiences opened up by hypertext that has similarly persisted. But the blind spot wasn't always an inevitability. After giving a brief history of hypertext's theoretical forerunner, Vannevar Bush's Memex, Jones and Spiro credit Ted Nelson as the man "who in 1965 coined the word 'hypertext' to refer to the kind of intuitive, non-linear reading and writing which the Memex would, in theory, have made possible" (150). We see mention of writing in that attribution, and if we investigate the idea of the Memex, we see that the focus was actually on writing (or at least, recording), though reading was certainly a part of the vision, too.

Originally published in The Atlantic Monthly in July of 1945, just weeks before the United States dropped atomic bombs on Hiroshima and Nagasaki, Bush's "As We May Think" is a thought experiment attempting to find a direction toward which to focus the soon-to-be-idled scientific resources that had been contributing to the war effort. Bush begins the essay with a bit of strikingly premature nostalgia.

This has not been a scientist's war; it has been a war in which all have had

a part. The scientists, burying their old professional competition in the

demand of a common cause, have shared greatly and learned much. It has

been exhilarating to work in effective partnership. Now, for many, this

appears to be approaching an end. What are the scientists to do next? (1)

Large-scale scientific collaboration had been "exhilarating," and it had also been

frighteningly effective. As Roosevelt's Director of the Office of Scientific Research and

Development, Bush was interested in keeping the ball rolling, and he was concerned

about obstacles in the ball's path. What caught his eye was the "growing mountain of

research" that appeared to him as "evidence that we are being bogged down today as

specialization extends" (1). This was already, in 1945, developing into a situation that I

can personally recognize as still very much with us over sixty years later. As Bush

describes it, "The investigator is staggered by the findings and conclusions of thousands

of other workers—conclusions which he cannot find time to grasp, much less to

remember, as they appear" (1). The answer Bush devises to this problem of too much

information is the Memex.

Extrapolating from then-state-of-the-art developments in photography and speech

recognition hardware, Bush offers an image.

One can now picture a future investigator in his laboratory. His hands are

free, and he is not anchored. As he moves about and observes, he

photographs and comments. Time is automatically recorded to tie the two

records together. If he goes into the field, he may be connected by radio to

his recorder. As he ponders over his notes in the evening, he again talks

his comments into the record. His typed record, as well as his

photographs, may both be in miniature, so that he projects them for

examination. (2)

The camera is attached to his (of course the scientific investigator of the future would be

a man[34]) forehead, and a voice-activated stenotype captures his verbal commentary.

So far, we're still firmly in the realm of composing. Instead of writing, by hand

or by typing keys on a typewriter, people will speak into machines or insert hole-punched

cards into them. The emphasis is on recording, rather than arranging or presenting, but

these are, nonetheless, compositional activities. The next step, the one that crosses back

and forth over the barrier between writing and reading, is the integration of previous

findings. Retrieval becomes the problem, and as Bush sees it, "Our ineptitude in getting

at the record is largely caused by the artificiality of systems of indexing" (4). Arguing

that the human mind "operates by association" (4), he proposes a desk filled with

microfilm and mechanical apparatus for its retrieval, translucent screens for viewing the

microfilm, and a keyboard for calling up particular bits of film and annotating them. The

annotations could be elaborate or merely code words serving as connections to other bits

of film. And this, Bush says, "is the essential feature of the memex. The process of tying

two items together is the important thing" (4). Associative trails will be constructed by

"a new profession of trail blazers, those who find delight in the task of establishing useful

trails through the enormous mass of the common record" (4). The emphasis subtly shifts

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[34] Women (or rather, girls) did have a role to play in the amazing future. Describing mainframe computers with "enormous appetites," Bush envisions "a whole room full of girls armed with simple key board punches […]. There will always be plenty of things to compute in the detailed affairs of millions of people doing complicated things" (2). Fortunately, there will still be jobs for girls using "simple" devices.

from writing—composing the associative trail—to reading—consuming the products of the work of the new professional associators.

Perhaps it was because the machine would be costly and the knowledge of the annotative code would be limited to an intellectual elite that Bush's vision relegated composing to the trail blazers, rather than everyone. Certainly, the first microcomputers *were* costly,[35] and knowledge of programming code, including HTML, *was* limited to a technological elite. Throw in the market forces that made ".com" the top-level domain most associated with the World Wide Web, and it's really no surprise that hypertext has always tended to emphasize consumption over production. Still, the bridge from Bush to Nelson is worthy of inspection, not merely for evidence of the shift to consumerism but in order to follow the associative trail of associative thinking embedded within the hyperlink—particularly, within the writing of a hyperlink.

Ted Nelson and the ELF

The first print mention of the term "hypertext" is in a paper Ted Nelson delivered at the 1965 Association of Computing Machinery National Conference. "A File Structure for the Complex, The Changing and the Indeterminate" begins with a discussion of Bush's theoretical device. Explaining that "the original idea was to make a file for writers and scientists, much like the personal side of Bush's Memex, that would do the things such people need with the richness they would want," Nelson argues that "the kinds of file structures required if we are to use the computer for personal files and as an adjunct to creativity are wholly different in character from those customary in

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[35] Ted Nelson, writing in 1965, expresses excitement about costs being "down considerably. A small computer with mass memory and video-type display now costs $37,000; amortized over time this would cost less than a secretary" (85).

business and scientific data processing" (84). The emphasis is clearly on facilitating production, on writing. These structures are to be "an adjunct to creativity."

Nelson calls attention to the blurry non-line between reading and writing, but the focus remains on writing. Describing the intent of his project more specifically, he writes, "Its purpose was to create techniques for handling personal file systems and manuscripts in progress. These two purposes are closely related and not sharply distinct" (85). Writers collect notes, and often "the assembly of textual notes <u>becomes</u> the writing of text without a sharp break" (85). This fact leads him to the idea of a "<u>dream</u> file: the file system that would have every feature a novelist or absent-minded professor could want, holding everything he wanted in just the complicated way he wanted it held" (85). Despite the implied elitism of a system useful for (male) novelists and (male) professors, the emphasis on helping writers in the process of writing places Nelson's vision squarely within the purview of composition pedagogy.[36]

Arguing that "the problems of writing are little understood, even by writers," Nelson denounces traditional wisdom about the value of constructing outlines in advance and concludes that "the task of writing is one of rearrangement and reprocessing" (87). To facilitate this rearrangement, Nelson designs a system of zippered lists with persistent links between entries on separate lists. This allows him to envision functionality that became standard and essential features of word processing software (e.g., multiple draft capability, cut-and-paste text block manipulation, undo support, and dynamic indexing).

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[36] Indeed, a concern about process motivates Nelson to write, "Surely half the time spent in writing is spent physically rearranging words and paper and trying to find things already written; if 95% of this time could be saved, it would only take half as long to write something" (85). It's worth noting that his essay is published in a format that is clearly typewritten, with fascinating artifacts such as three-component brackets made of dashes and slashes—a procedure my vastly superior word processing software, a theoretical descendant of Nelson's ELF, cannot duplicate.

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Links can be put in sequences, a la Bush's associative trails, setting up the possibility of hypertext. The resulting evolutionary list file (ELF), Nelson suggests, in a way suggestive of current notions of hyper- or cyberspace, "may be thought of as a <u>place</u>; not a machine" (91). But because he was worried about making the system user-friendly for "laymen (including artists and writers) who feel unkindly disposed toward computers" (89), Nelson deliberately bracketed off the possibility of making the ELF "an evolutionary <u>network</u> file, allowing any two entries to be connected" (91).[37]

After explaining how his system might work, Nelson asks, "But, except as a crutch to man's fallible mind, is there any reason to suppose that the system has any general applicability in principle?" (96). It is at this point that the discussion shifts from writerly to readerly concerns. I think it's only coincidental that this is the same point in the essay at which the term "hypertext" is introduced "to mean a body of written or pictorial material interconnected in such a complex way that it could not conveniently be presented or represented on paper" (96). Nelson suggests that hypertext could have educational applications, particularly with respect to keeping engaged those students who get bored reading books (96). Here we see the beginning of the blind spot; there's a lot of money to be made in producing materials for educational consumption.

But the production aspect need not have been pushed into the blind spot. The reason students would not be as bored with hypertext, Nelson seems to suggest, is that hypertext is a more natural way of organizing information: "I believe that such a system as the ELF actually ties in better than anything previously used with the actual processes by which thought is progressively organized" (97). But as he points out earlier in the

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[37] Another fascinating possibility only lightly touched upon, making links "modal, the different link-modes having different meanings to the user" (91), speaks to the very problem Burbules takes up when trying to get readers to think about the different semic functions of links.

essay, it is the user's "job to draw the connections, not the machine's" (93). I would argue then that from its theoretical inception, the hypertext was envisioned as a medium for active composition, and only secondarily for passive reception.

Cognitive Flexibility Theory

I'm playing with the opposition between active composition and passive reception of texts, despite my learned distrust of such a clearly defined opposition, because meaningful distinctions between the two practices do, in fact, exist. Furthermore, these distinctions take on meaningfulness at the nexus of the hyperlink.

On the one hand, the notion of reading as distinct from writing has been successfully challenged for some time now. Stanley Fish argues that "meanings are the property neither of fixed and stable texts nor of free and independent readers but of interpretive communities that are responsible both for the shape of a reader's activities and for the texts those activities produce" (322). Texts are composed through the reading of them. Although I've always read the efforts of Barthes, Derrida, and Foucault to challenge the hierarchy that places author in a role of authority over reader as an analogue of their resistance to foundational authority structures in society generally, that reading of motivations has not generally interfered with my acceptance of the underlying argument that the line between writing and reading, if it exists, must be seen as blurry, at best.

On the other hand, when we try to follow specific implications of this argument, the line occasionally reasserts itself. The comparative educational affordances of hypertext, relative to the practices of reading and writing it, provide a case in point. Proponents of Cognitive Flexibility Theory (and hypertext's role both in supporting and

applying that theory) simultaneously seem aware of the line between reading and writing even as they try to elide it.

Just as Beeman et al sense hypertext's value as an instructional aid in the development of cognitive pluralism, cognitive flexibility theorists see in hypertext an antidote to the limits of dualistic thinking. Viewing hypertext as a "convergence of interpretive theory and technology," Jones and Spiro argue that it represents "a veritable revelation within the traditional classroom" (151).

> For (their technological, visual and auditory sophistication notwithstanding) our students arrive in our classrooms as confirmed interpretive essentialists—ie, they are convinced that there is something that these texts are Really About, 'timeless truths' inscribed in a cryptic code that only we can decipher. This in turn encourages our dangerously flattering self-image as academic 'priests' dispensing the intellectual 'sacraments,' as well as our students' view that education is a matter of passively receiving these sacraments in the traditional, ritual environment of the lecture hall. (151)

The problem with this hieratical relationship is that it fosters an approach to teaching and learning static facts, an approach that Schön and others recognize as being inimical to successful practice in a dynamic world. As Jones and Spiro explain, "The basic tenets of cognitive flexibility theory are all intended to combat this proclivity for oversimplified and essentialistic modes of thought that are so inappropriate for complex and ill-structured knowledge domains" (153). For such domains, Schön emphasizes the value of

reflective transfer; cognitive flexibility theorists emphasize the value of *knowledge transfer* (Jacobson & Spiro 241).

Jones and Spiro explain Cognitive Flexibility Theory (CFT) as containing the following principles:

> Utilization of multiple representations;
>
> Provision for massive interconnectedness of knowledge representations;
>
> Emphasis on knowledge assembly rather than intact knowledge retrieval;
>
> Reliance on representational fragments as building blocks for constructing understandings. (153-6)

Aside from the first principle regarding multiple representations, we can see a clear path from Bush's Memex to Nelson's ELF to Spiro et al's CFT. Recall Bush's argument that "The process of tying two items together is the important thing" (4) and Nelson's insistence that it is the user's "job to draw the connections, not the machine's" (93). This persistent emphasis not only on information fragments being linked but on the active, compositional linking of those fragments takes up residence in CFT as a result of its concern for supporting knowledge transfer.

Reporting on a study of the effects of hypertextual educational materials on knowledge transfer, Jacobson and Spiro explain that the study was driven by a desire to address "the inability of students to transfer knowledge to relevant new situations" (241). As I have explained, this is the fundamental concern I have as a compositionist that drives me to place so much stock in the development of rhetorical awareness and a rhetorical repertoire that will support what Schön refers to as reflective transfer. It also links my goals with those expressed by Dewey nearly a century ago ("What [one] has

learned in the way of knowledge and skill in one situation becomes an instrument of understanding and dealing effectively with the situations which follow" (*Experience* 44)) and Quintilian two millennia ago ("For what object have we in teaching them, but that they may not always require to be taught?" (109)). Jacobson and Spiro write, "To address these problems, CFT makes a number of instructional prescriptions, such as:

> use of *multiple knowledge presentations* […];
>
> explicitly *linking and tailoring concepts to practice or case examples* […];
> *incrementally introducing complexity* in small, cognitively manageable units; stressing the *interrelated and web-like nature of knowledge* […];
> and encouraging the *assembly* of appropriate knowledge from various conceptual and case sources […]. (241, emphasis in original)

Although this reads as a pedagogical operationalization of CFT principles, the authors' choice of passive sentence construction introduces a notable possibility for debilitating slippage. Who does the using, linking, and assembling—the instructor or the student (or both)? It seems to me that Jacobson and Spiro deliberately exploit the slipperiness of the distinction between reading and writing argued for by Barthes, Derrida, and Fish in order to stave off the slippage between passive and active learning that might undermine the findings of their study.

Jacobson and Spiro constructed two hypertext learning environments. A control condition utilized hyperlinks to make one-to-one correlations between cases and abstractions; and an experimental condition utilized "*Thematic Criss-Crossing* […] in which abstract and case-centered components of the domain were studied from a variety of intellectual perspectives that highlighted different aspects of the knowledge" (242,

emphasis in original). The designers of the experimental hypertext learning environment did the thematic criss-crossing by embedding hyperlinks across the one-to-one correlations of the control version. Following interpretive theorists, we could say that the student readers of the hypertext also did the thematic criss-crossing by following those links. This is, I believe, the reading intended by the study report's authors. It's the only reading that supports the claim of CFT's efficacy in supporting knowledge transfer. Yes, the study revealed that students who read the experimental hypertext outperformed the students who read the control hypertext with regard to transfer of knowledge to domain-related but previously-unencountered problems (243). But while CFT implies knowledge assembly (composition), "the Thematic Criss-Crossing subjects *read* 15 different thematic combinations" (245, my emphasis); they did not *write* a single hyperlink.

To be fair, Jacobson and Spiro almost acknowledge this distinction. They write, "Part of the effectiveness of the Thematic Criss-Crossing treatment thus may be due to the externalized *modeling of knowledge assembly* demonstrated through the computer re-editings of the link relationships between the minicases based on different theme combinations" (246, emphasis in original). Their emphasis on modeling and demonstration ostensibly resists a misreading of the passive construction of "demonstrated through the computer re-editings" that would have erroneously placed the student in the missing subject role. However, it's difficult to sustain such generosity of attributed intentionality when the authors proceed to write, "With this procedure, the student directly experiences the combination and recombination of knowledge components that, internalized over time, undergirds the development of cognitive flexibility and the improved ability to transfer knowledge to new situations" (246). A

direct experience of combination and recombination of knowledge components would have the student doing the combining and recombining; by comparison, reading through someone else's combination and recombination must be an indirect experience. The "internalized over time" qualification points to evidence that such a distinction matters, despite interpretive theorists' success at blurring it.

Jacobson and Spiro's study measured student performance on two sets of short answer and essay instruments. The assessments were administered with a four-day interval between sets. The authors write, "While there was no difference between the groups on the judges' scores for the more cognitively demanding Problem-Solving Essay task administered at the end of Session 2, the Thematic Criss-Crossing group achieved significantly higher essay scores by Session 4" (243). This experimentally-demonstrated cognitive processing lag belies the notion that there is no distinction between reading and writing. Something happened, over time, between the two acts. As Jacobson and Spiro explain, "The delayed effectiveness of the Thematic Criss-Crossing treatment was expected as it was thought that a critical period of time would be required by the subjects to assimilate the multiple and interrelated perspectives of the knowledge presented by this treatment" (243).[38] This suggests that the assimilation does not occur during reading; it is a compositional cognitive activity separate from reading, as indicated by its manifestation in later writing performance.

One conclusion that could have been drawn from this finding (but, as in the case of the Intermedia study, was not) is that students need to be presented with writing tasks

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[38] This explanation/hypothesis suggests a limitation of the WSU reflective timed-essay discussed in Chapter Three. To the extent that students are unfamiliar with the Six Learning Goals of the Baccalaureate, two of which confront them in the essay prompt, they will be differentially constrained by a potentially construct-irrelevant element of the testing situation: its timed nature.

in order not only to demonstrate an increased faculty for knowledge transfer but to actually *do* the increasing of that faculty. The terministic screen of education scientists that too often reads writing assessment as summative, rather than formative, deflects attention from a potentially powerful construal of the findings. This deflective terministic screen is reinforced by a capitalistic worldview that privileges owners of intellectual property (e.g., the designers of the hypertext learning environment) over consumers of it (e.g., student readers). Jacobson and Spiro come close to seeing past this blind spot, but aren't quite able to, as evidenced by their statement that "a critical implication of the study is that *merely providing hypertext links to different information nodes is not sufficient to promote the transfer of knowledge to new situations*" (246, emphasis in original). This is followed not by an urging of educators to encourage assembly of meaning from bits of information through writing, as CFT principles might have dictated, but rather by a reminder of the distinction between the control and experimental conditions of the study: one-to-one linking vs. thematic criss-crossing, all of which was done by the authors of the hypertext.

It's worth noting that thematic criss-crossing is the hypertext functionality Nelson deliberately bracketed off in the interests of shielding technophobic users from unnecessary complexity. Jacobson and Spiro demonstrate that deliberately removing those brackets could lead to more effective instructional applications of Nelson's hypertext concept. The next evolutionary step would be to remove the brackets between Bush's "new profession of trail blazers, those who find delight in the task of establishing useful trails through the enormous mass of the common record" (4) and the users who passively follow those trails.

Hyperwriters and the Link Types They Employ

Marcia Dickson begins her essay, "Click Here to Organize," by writing, "My colleague Scott Lloyd DeWitt has long claimed in casual conversation that the very act of creating a hypertext link will spark in students a type of metadiscourse about texts that they usually avoid" (253). As Dickson points out, DeWitt has made such claims in formal conversation, as well. "Defining Links" describes a classroom study DeWitt conducted for his dissertation. Near the end of a semester, he asked his first-year composition students to compose a hypertext, using HyperCard, that linked together several of the formal and informal writings students had composed up to that point. According to DeWitt, "The most significant finding is that students, when creating links, spent a considerable amount of time rereading their own writing in order to make purposeful connections within their stacks" (146-7). This is almost certainly a salutary outcome of writing hypertexts. And DeWitt's comparison of purposeful connections with gratuitous ones (e.g., a standard set of navigation buttons that is replicated on every card) suggests an assessment method that could effectively test for this salutary outcome. Though gratuitous links may not be proof that students did not reread their linked-to text nodes in the composition of hypertexts or ePortfolios,[39] purposeful links, by contrast, do represent evidence of hypertext-inspired rereading.

Another trace of the cognitive processing prompted by hyperlinking shows up in the names writers give to the links themselves. Using HyperCard's button-based link

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[39] Musing about possibilities for integrating hypertext into the composition classroom other than as an appendage to a more traditional, print-based curriculum, DeWitt describes an ePortfolio, without referring to it as such: "Perhaps students could have created hypertext portfolios that included all of the unit's writing, including draft work and writing process self-reflections" (145). Here we see the familiar compositionist definition of portfolio as distinct from a mere collection of texts, the distinguishing feature being the inclusion of reflective metacommentary.

embedding feature, DeWitt's students named buttons in two distinctly different ways: "students chose to represent the link between cards according to the content of ideas on the cards or based on the assignment they were completing" (140). Content-oriented links tended to demonstrate thoughtful integration of the linked-to material, whereas assignment-oriented links did not; in the latter cases, students were linking merely to fulfill requirements to include a specified number and type of assignments. Recalling the FSU skills matrix model, the positioning of the link within the matrix forecloses the opportunity to read a distinction in the way the student thinks about the link based solely on the way it is named. Instead, the thinking is represented by the placement within the matrix.

It seems to me this could serve as an argument both for and against the use of skills matrices in ePortfolios. If the goal is to foster reflective thinking, the skills matrix might help by preventing student writers from making links based merely on what the linked-to element is, a la DeWitt's students assigning names to link buttons according only to the assignment linked-to. We could say such object-oriented linking would not support semantic elaborative encoding, to apply Schacter's terminology.[40] However, we could also say that by forcing all links into the matrix and making the link names

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[40] In his 1998 dissertation, Chester Lyskawa describes a study he conducted to investigate student attitudes toward semiotic and traditional hyperlinks and any differential effects of them on outcomes from working with hypertext learning materials. The distinction between semiotic and traditional is largely an artifact of early HTML style, which is why I have relegated a discussion of his work to a footnote in my own dissertation. Lyskawa's traditional hyperlink is a filename or URL embedded in surrounding text and indicated as a hyperlink only by virtue of being blue, underlined, or both; a semiotic hyperlink is "a combination of both graphical and textual elements," such as a button with a word written on it (5). Lyskawa found no significant difference in learning outcomes between students who studied a hypertext with semiotic links and those who studied one with traditional links. He did, however, find significant differences in student attitudes toward the two types of links; students preferred semiotic links. Because this study did not involve composing, its findings are of limited relevance to my investigation. Making links immediately meaningful to readers did not, apparently, improve elaborative encoding. But perhaps this would be remedied by asking students to write their own meaningful links. The fact that students appreciated the meaningful links more than the relatively-arbitrary computer language links at least hints at a preference for meaning making with respect to link usage.

themselves largely irrelevant, the skills matrix turns all texts into assignment objects, thereby encouraging students to ignore the meaning *within* the linked-to documents, in favor of attending only to the meaning *of* them.

DeWitt sees much potential for integrating hypertext into the composition classroom in order to foster metadiscursive thinking, but to be fair to him, he does not fall under the sway of technological determinism. He writes, "Hypertext itself will not teach students advanced-level thinking skills. But its concept can indeed augment sound pedagogy that does" (144). If a portfolio-based composition curriculum is sound pedagogy, and I certainly believe it can be, the integration of hypertext in the form of ePortfolios should be able to augment that sound pedagogy. Paying close attention to link types may be a crucial aspect of such successful integration and augmentation.

Emily Golson makes a distinction between intersecting and interacting links. Whereas "*Intersecting* links do not suggest meaning," "*interacting* links force readers to build momentary coherence from momentary disparity" (157). Golson sees intersecting links supporting hierarchical structure, while interacting links better support post-modern, shifting organizational structures.[41] This opposition cannot be neatly superimposed onto DeWitt's distinction between purposeful and gratuitous links, although the persistent

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[41] Burbules offers handles for the slipperiness of this distinction between traditional, hierarchical modes of organization and newer, post-modern ones: "Where traditional text depends upon the disciplines of the Outline and the Syllogism, hypertext opens up the additional textual possibilities of Bricolage and Juxtaposition: *assembling* texts from pieces that can be represented in multiple relations to one another" (107). Jacobson and Spiro's thematic criss-crossing is now accepted as a fundamental attribute of hypertext. Nelson worried about reader aversion to the complexity that would be introduced by the inclusion of this functionality in the ELF. It's an open question whether or not we are now sufficiently post-modern to handle such complexity with aplomb. Burbules notes that "the force of these habits [of traditional organizational thinking] is so strong that most readers tend to impose such a pattern on textual material in the process of reading, even when the content resists it" (107); "indeed, traditional text can be read hypertextually and hypertexts can be read quite traditionally" (108). I find that as I take advantage of my word processing software's ability to support easy insertion of footnotes, I'm *writing* hypertextually, or at least juxtapositionally; the reader who skips over these digressions could be seen as reading hypertextually.

navigation bars that DeWitt might label gratuitous would probably be labeled intersecting by Golson. Golson's distinction rests more on the difference between contiguity and disjunction, a distinction Burbules more productively explores with the use of rhetorical tropes.

Although it never mentions reflective writing or ePortfolios, Nicholas Burbules' "Rhetorics of the Web: Hyperreading and Critical Literacy" may be the text most valuable to my dissertation. It's certainly the most important source of generative ideational energy for this chapter. Placing the hyperlink at the very heart of his inquiry, Burbules argues,

> The significance of links in a hypertextual environment is often
> underestimated; the textual points or nodes are assumed, and the links are
> regarded simply as matters of preference or convenience. Their ease of
> use makes them seem merely shortcuts, and subservient to the important
> things: the information sources that they make available. Their speed in
> taking a user from one point to another makes the moment of transition
> too fleeting to merit reflection; the link-event becomes invisible. (104)

His explanation for the underestimation of hyperlinks calls attention to the obverse of the attribute for which they are so often celebrated, the one that Hawisher and Selfe parenthetically allude to: speed. If this dissertation were a hypertext,[42] I could have made "parenthetically allude to" a hyperlink that would have taken the reader to the previous page even more quickly than said reader could have turned to said page (if this

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[42] A possibility suggested by Theron Desrosier of the WSU Center for Teaching and Learning with Technology—actually, he suggested that I make the dissertation an ePortfolio. It's an intriguing idea, though I'm a bit hesitant when I recall the talk of evangelizing in the interview transcript I analyze in Chapter Three. No offense to Theron, but I'd be shocked if SharePoint weren't the platform he had in mind.

dissertation were printed on paper), not to mention the time lost in scanning for the quote that could have been saved by embedding an anchor to which the link would have immediately pointed. Furthermore, that linking could have been accomplished in far less time than it took me to compose this explanation. I could have done it almost without thinking. And of course, that's Burbules' point.

Claiming that "Their familiarity can be deceptive," Burbules explicates three aspects of links in an attempt to "counteract their apparent naturalness" (104). First, echoing Nelson's notion of modal links and Lyskawa's distinction between traditional and semiotic links, Burbules argues, "all links are not the same, and do not imply the same type of semic relation" (104). This point leads eventually to the menagerie of rhetorical tropes he trots out as categories for some of the types of links. I will return shortly to describe the menagerie and then put it to work in the case studies of Chapter Five. At this point, we'll accept it as a postulate.

The second aspect of hyperlinks offered up by Burbules in the service of problematizing them is that "in our ordinary encounters with links, they are already made" (104). This refers to the facts that Burbules' essay is nominally devoted to reading practices and that most readers of hypertexts are not also writers of them. He goes on to analyze the distinctions between reading and writing hypertexts and makes the claim that a "crucial aspect of developing [the] capacity for critical hyperreading is" learning to write hypertextually (118). In the decade or so that has transpired since the publication of his essay, the advent of Web 2.0 technologies such as blogs, wikis, and social networking sites has helped make writers out of many more readers whose contributions were previously constrained by the limits of their knowledge of hypertext mark-up language

(HTML). That said, the difficulty I've witnessed college juniors and seniors having as they try to accept and work with Burbules' first aspect challenges his causal claim connecting hyperwriting to critical hyperreading. These students may know how to construct hyperlinks and may do so quite frequently, but they are not necessarily any more able to reflect on the links themselves as a result of that knowledge and action. This is, of course, another version of the bone of technological determinism I pick with Blair and Takayoshi in Chapter Three over the differences between allowing, encouraging, and entailing.

This question of the effects of writing on reading intersects with the third aspect of hyperlinks Burbules would call our attention to: "the act of a link is not simply to associate two givens" (105). In one sense, this is a corollary of the first aspect. If different types of links can be inductively identified by the semic relations they imply between the linked-to textual nodes, it must also be true that the meaning of the nodes will be affected by the link. And if the meaning of a node is up for grabs, so too must be its truth value. Following this line of reasoning, we can see how this third aspect overlaps with the second aspect. Although Burbules acknowledges what many teachers and librarians continue to notice and lament—that readers often regard hypertexts as "authoritative, since in most cases the ability to create such pages—the knowledge of the code—will give the invisible author a certain status" (106)—he also looks quite presciently to the future we now find ourselves in, forecasting that

> as more and more people develop the skills to create such documents—or
> as new generations of HTML editing/word processing software make their
> creation a seamless part of text creation itself—the credibility of any

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particular hypertext on the Web will diminish, since there will almost

certainly be more garbage than work of quality in this Brave New Self-

Publishing World. (106)

Possessing knowledge of HTML and Web authoring skills was never an infallible sign of

scruples, any more than the ability to click on a "make link" icon is now.

Burbules' Tropical Menagerie

The approach to counteracting the deceptive, apparent naturalness of links

Burbules suggests "is to consider how links are tools of rhetoric" (110). He offers nine

tropes as examples and refers to them as a menagerie "because the list of items [he is]

discussing is not meant to be systematic or exhaustive" (111). Such a hybrid, empirical-

analytical approach seems particularly fitting considering the millennia-long debate

within and about rhetoric, traceable back to Plato, as to whether or not it can or should be

developed as a science of systematic and exhaustive knowledge production, as Aristotle

tries to do in his *Rhetoric*, or whether it must always be at best a genuine art, as suggested

late in the *Phaedrus*, or a spurious knack, as insisted upon throughout the *Gorgias*. Since

Plato has Socrates, in the *Phaedrus*, set the bar exceedingly high—"Thrasymachus, or

anyone else who seriously proffers a scientific rhetoric, will, in the first place, describe

the soul very precisely" (147)—I've never felt much shame in refusing to accept the

challenge.

The examples Burbules includes in his menagerie are metaphor, metonymy,

synecdoche, hyperbole, antistasis, identity, sequence, cause-and-effect, and catechresis.

Because I employ these tropes in my analysis of student ePortfolios in Chapter Five, it's

important to describe each in its turn here, looking briefly at the examples Burbules provides so as to come away with more-or-less stable definitions to work with.

Acknowledging that *metaphor* is sometimes used as the umbrella term for all figurative language, Burbules describes the specific trope as "a comparison, an equation, between apparently dissimilar objects, inviting the listener or reader to see points of similarity between them *while also inviting a change in the originally related concepts by 'carrying over' previously unrelated characteristics from one to the other*" (111, emphasis in original). One of the examples he offers, "school is jail," (111) reminds me of a metaphor I once used successfully to help a student see the value of figurative language: "This desk is a cage around my soul." Having just finished arguing that metaphors were stupid and didn't help him say anything he couldn't say in plain language, the student responded to my metaphor, in a somewhat awe-struck tone, "It's so true." Metaphor helps us help other people see things the way we see them. Burbules' example of a metaphoric hyperlink is one from a page on political organizations to the Catholic Church, which he suggests, "might make a reader think about politics and religion in a different way" (111). But such a response depends heavily on a shared perception of some similarity; without that, an intended metaphor drifts into the territory of catachresis.

Burbules defines *metonymy* as "an association not by similarity, but by contiguity, relations in practice" (111). He gives the example of baseball and hot dogs in America, and the Web example of a link from a vacation destinations page to a page on "How to Avoid Pickpockets" (112). As with metaphor, metonymy depends on some experience with the world that is shared between the speaker (writer) and the listener (reader).

Without that shared experience, the trope may be incomprehensible. Attempts at both metaphor and metonymy can be supplemented by commentary to address potential gaps between intended and perceived meaning (or lack thereof). A skills matrix ePortfolio may give student composers the impression that such commentary is unnecessary (because the column and row labels presumably provide all needed contextualization), potentially resulting in miscommunication.

Describing *synecdoche* as more specific than either metaphor or metonymy, Burbules writes that it "involves figurations where part of something is used as shorthand for the thing as a whole or, more rarely, vice versa," two possibilities he combines in the example, "the moustache came back to the bar and asked for another beer; he already had a six-pack inside him" (112). He argues that synecdoche is "particularly influential in identifying, or suggesting, relations of categorical inclusion: a list of 'Human Rights Violations' may include links to pages dealing with corporal punishment in schools, or vice versa" (112). The entire concept of a skills matrix of links relies on synecdochal categorization. But as Burbules points out, "because such categorical links are often the gateway that controls access to that information, clustering and relating items in one way rather than another is more than a matter of convenience or heuristic—it becomes a method of determining how people think about a subject" (113). And it is a reliance on this effect that makes the skills matrix both attractive and somewhat dangerous in the context of an ePortfolio. An evaluator could be persuaded to view a linked-to document as evidence of the particular skill-domain expertise implied by the position of the link within the matrix. Or the evaluator could read the linked-to document as entirely irrelevant, in which case the writer's credibility would be damaged .

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Hyperbole is exaggeration.[43] Burbules points out that the entire World Wide Web is "essentially hyperbolic (starting with its name)" (113). He gives the example of a movie guide page, which implies that all movies will be reviewed. Continuing along with my application of tropes to the FSU skills matrix model, the idea that one linked document sufficiently provides evidence of each skill-domain pairing can certainly be seen as hyperbolic, as can be the implication that all relevant or essential skills and domains are represented by the columns and rows of the matrix itself.

Burbules defines *antistasis* as "the repetition of a word—the 'same' word—in a different context ('whenever I fly in an airline I feel trapped, as if I were a fly in a bottle')" (113). His application of this trope to hypertext, "using a particular word or phrase as a pivot from one context to a very different one," strikes me as in some ways indistinguishable from a metaphor stretched too far (catachresis), except for the somewhat metonymic quality of homonymic contiguity. Burbules recognizes this metonymic aspect of antistasis on the Web, giving the example of a calendar program that lists all kinds of events that happened on a given day throughout history. As he points out, the effect is a "juxtaposition of apparently unrelated points of information and the reduction of all to the same superficial level of significance" (114). Just as

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[43] Although Burbules labels hyperbole's opposite as understatement, the opposite rhetorical trope is litotes. He offers the ironic example, "it was a little warm in Egypt when we visited" (113). I suggest one way to think about litotes in hyperlinks would be the stylistic decision to make a link neither a button nor a passage of text explicitly called out as a link. When words in a hypertext are simply a different color, indicating that they are explorable as hyperlinks, they can be seen as functioning litotically. An analogous, non-hypertext example would be a footnote that is not extraneous, superfluous, or digressive, but instead carries on discussion of a key element of the main text. The present footnote may or may not serve as an example; like all rhetorical tropes, the decision about correct labeling of instantiations is a matter of social construction between author/speaker and reader/listener.

juxtaposition can be seen as a distinguishing organizational strategy of post-modernity,[44] dissatisfaction with the resulting superficiality can be seen as a symptom of the same post-modern condition. However, as Burbules also points out, antistatic links can also work in an anti-metaphorical way "by invoking 'the same' in a way that reveals difference" (114). A student who places a link to the same document in several boxes of a skills matrix can demonstrate not only applicability of that document as evidence of several skill-domain pairings but also an ability to do the careful reading that would reveal such multivalence.

Burbules includes *identity* in his menagerie "as a companion and contrast to antistasis" (114). He writes, "Unlike antistasis, which tends to highlight the ways in which terms or concepts change significance in different contexts, identity tends to hypostasise meanings, to freeze them, by suggesting that core meaning resists changing context" (115). He doesn't provide a specific hypertext example, but we can imagine repeated links from occurrences of the word *democracy* to images of Capitol Hill, stories about U.S. invasions of Iraq and Afghanistan, and perhaps even the protester standing in front of a line of tanks in Tiananmen Square. Democracy is democracy is democracy. Just as repeated links to the same document across several cells of a skills matrix could be read as antistasis, assuming the reader is able to discern multivalence within the document, it could also be read as identity if the reader begins to get the impression that the author is unclear about distinctions between the skills or domains represented in the matrix.

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[44] As the astute, nonhypertextual reader will recall, I cite, in an earlier footnote, Burbules as making this very claim.

Burbules lumps *sequence* and *cause-and-effect* into one discussion of "links that suggest 'this *and then* that' or 'this *because of* that'" (115, emphasis in original). He offers the example of a link from a rock music page to one on drug use. The danger in not recognizing such tropic functioning of links is that

> because they do not specify or explain such connections, but simply
>
> *manifest* them, they are more difficult to recognise and question; often
>
> they simply carry the reader with them to inferences that could just as well
>
> be drawn quite differently, or could be criticised or rejected. (115,
>
> emphasis in original)

This goes to the heart of Burbules' concern about the importance of helping students develop skills for critical hyperreading. I would argue that such skills are also needed for application to the composition process in order to avoid the loss of credibility I discuss above with respect to synecdochal linking. Burbules implicitly supports this argument, writing, "The credibility of designers/authors, then, is continually open for question and challenge by hyperreaders […] as creators of a semic system" (118). And since students of composition are and will be both readers and writers of hypertext, they must attend both to the credibility of what they read *and* the potential threats to their own credibility lurking in inappropriate or ineffectual links that they might write. Hyperwriting is creative writing, and it is a constructive playing with meanings in their relations, to paraphrase the Dewey epigraph to this chapter. But Burbules shows us that in order to maximize rhetorical effectiveness, this constructive playing with meanings in their relations cannot be, as Dewey suggests it can, an unconscious process.

Finally, Burbules explains, "Catechresis on the Web becomes a trope for the basic working of the link, generally; *any* two things can be linked, even a raven and a writing desk, and with that link, a process of semic movement begins instantaneously" (116, emphasis in original). If readers are willing to play along, what at first appears to be an improper or far-fetched comparison (catechresis) drifts toward metonymy and even synecdoche by virtue of contiguity and repetition. Today's catachrestic link is (or at least may be) tomorrow's metonymic or even synecdochic link. Much depends on the amount and quality of good will generated or sustained within the reader by the writer. A lack of credibility will cause readers to see unexpected links as persistently catachrestic rather than incipiently metonymic or synecdochic. Although a surprising, disjunctive hyperlink may be pleasantly acceptable in literary hypertext, hypostasized catechresis in a student ePortfolio likely will be evaluated negatively because it represents miscommunication.

Tying It All Together

Burbules' insight into the fundamentally tropic nature of hyperlinks ties in nicely with the emphasis on associative thinking at the heart of Cognitive Flexibility Theory and Schön's notion of reflection-in-action. Rhetorical tropes depend upon available semic connections between words; rhetors exploit those connections, and auditors either appreciate or reject them. Thinking about links as rhetorical tropes could support the kinds of associative thinking that would allow hyperwriters to do elaborative encoding of lessons learned through learning experiences, which would in turn support reflective transfer of knowledge from familiar to unfamiliar discursive domains and from familiar to unfamiliar problems within discursive domains. Thinking about links as rhetorical tropes could also support detecting traces of those kinds of associative thinking in the

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hyperlinking performed by composers of hypertexts. We now turn to that task by reading

sample student ePortfolios and the contexts within which they were composed in order to

extrapolate implications for composition pedagogy.

CHAPTER FIVE

SAMPLE ePORTFOLIOS

> There is no integration of character and mind unless there is
> fusion of the intellectual and the emotional, of meaning and
> value, of fact and imaginative running beyond fact into the
> realm of desired possibilities.
>
> — John Dewey, *How We Think*, 278

Hawisher and Selfe contend that "[W]e need to make sure that the revolutionary claims made for the use of computers in education—claims that have little to do with how schools, students, and teachers really use computers—are informed by the kinds of research that literacy educators prize" ("Reflections" 15). They stack the deck in order to imply what those prized kinds of research must involve: paying attention to how schools, students, and teachers really use computers. That's exactly the research methodology employed in this chapter. It's thick description, in the sense that I describe not only what students are doing in ePortfolios but also make inferences about why they are doing those things, using contextual evidence to support those inferences. In his contribution to the Foreword of the *Handbook of Research on ePortfolios*, Serge Ravet writes, "As this book demonstrates through scientific studies and informed testimonies, the ePortfolio is currently effecting a quiet revolution in the world of learning" (xxix). Writing from the other side of the millennial changeover, Ravet moves Hawisher and Selfe's claim of revolution from computers to the specific use of them investigated by this dissertation: ePortfolios. I don't know how quiet that revolution is—certainly more quiet than the vendors of ePortfolio systems would like it to be—or how much the methodologies of scientific study and informed testimonial contribute to or work against that quietness.

Different auditors will be persuaded by different epistemologies, as is always the case. As one type of literacy educator, I find I am most persuaded neither by the often over-reaching generalizations of science nor the often self-serving hyperbole of testimonial, but rather by the explicit composition of case study. Here is what I'm looking at, and here is what I make of it; the level of representativeness of the artifacts and the value of inferences drawn from them are entirely contestable, but at least both artifacts and inferences are available for scrutiny.

At the close of Chapter Two, I suggest a set of heuristic questions for the explorations to follow. Before embarking on an exploration of actual student ePortfolios, we should revisit those questions in order to determine which have been addressed thus far and which remain available for useful guidance in our reading. The questions are:

- In what ways does the electronic medium support the development of a rhetorical repertoire through reflective transfer?
- In what ways does the medium support reflective transfer through elaborative encoding?
- Where do we see examples of task-specific-strategy responses to prompts for reflection?
- What forms do these responses take?
- What forms do the prompts take?
- Are there valuable types of reflective response other than task-specific-strategies that emerge?
- Can we theorize bridges between these unforeseen reflective types and development of rhetorical repertoires?

The use of hyperlinks in metaphoric ways (in both the overarching sense of metaphor as the umbrella label for all figurative language and the more specific sense of metaphor as the particular rhetorical trope of carrying over meaning from one concept to another) supports reflective transfer by virtue of allowing composers to map connections between concepts in an infinite number of directions and combinations. This mapping across hyperspace, which is itself a creation *of* hyperspace, can be read as an isomorphic representation of the elaborative encoding taking place within the brain of the composer. Indeed, Beeman et al and Jacobson and Spiro hoped to tap into the educational benefits of such reading and measure the outcomes of those benefits for the readers of hypertexts. But as I discuss in Chapter Four, the focus on hypertext as educational reading material causes Beeman et al to be blinded to the educational possibilities inherent in the composition of hypertext. Jacobson and Spiro are similarly unable to see around this blind spot, despite Cognitive Flexibility Theory's emphasis on knowledge assembly. Both sets of researchers are too focused on the consumption of hypertext to recognize that it is the production of hypertext that supports elaborative encoding and thus reflective transfer.

If that synopsis succeeds in describing how the historical and theoretical explorations of Chapter Four answer the first two questions on the Chapter Two take-aways list, the other five questions remain to be taken up. Four of them are questions best addressed empirically; that is the work of this chapter. The final question demands an inductive leap, which can only be performed after the observations are recorded. Therefore, we'll wait for the conclusion to take up the question of bridges between unforeseen types of reflection and the development of rhetorical repertoires.

In this chapter, I examine sample portfolios from three ePortfolio projects in order to look for examples of task-specific strategy responses and other unforeseen types of responses to prompts for reflection. Proceeding in the mode of thick descriptive analysis, I also examine the institutional prompts for reflection and speculate about effects of those prompts upon the choices made by ePortfolio composers, particularly with respect to the ways that hyperlinks are used to make connections across educational experiences and beyond.

The ePortfolio at LaGuardia

Begun with a Department of Education grant, LaGuardia Community College's ePortfolio program has evolved into one of the most established in the United States. Looking at the project's Web site, we encounter some familiar themes. We're told that "ePortfolios are one of the hottest educational tools sweeping the country. At colleges and universities around the nation, students are participating in a digital revolution as they create websites that represent their educational goals and achievements." What we're dealing with, as we've learned, is nothing short of a revolution. So it behooves us to take a close look at how that revolution is playing out on a central battleground.

It's not exactly clear who is on the other side of this revolutionary war. Perhaps it is the entrenched stubbornness of print-imprinted intellectuals demanding clear evidence of benefits before jumping on the bandwagon. Perhaps it is the rarely-recognized reticence of students who aren't sure why they have to learn a new software interface in order to make their personal and scholarly work available for unknown readers and reviewers. Perhaps it is the hard-nosed skepticism of administrators who read through proposals for expensive system upgrades and wonder just what they'll be getting for the

money. Of course, anyone pushing to initiate or expand an ePortfolio program must be very concerned about which one or combination of these opponents will be showing up on the other side of the battlefield. But I'm not currently trying to do any such pushing, so I'm happy to leave the question open for the moment.

That said, if we look at what LaGuardia Community College puts forward as "ePortfolio Benefits," we can read evidence of an awareness of all three opponents. The college Web site states,

> The ePortfolio offers students:
>
> - A place to collect and save your coursework ;
>
> - A chance to showcase your accomplishments and your best school work to family and friends.
>
> - A tool for creating digital resumes to send to employers;
>
> - An opportunity to use creativity to represent yourself and your education;
>
> - A portal that helps you connect your educational goals with your personal experiences;
>
> - An electronic resource you can use to apply for transfer and financial aid at a 4 year school;
>
> - A chance to reflect on your education, to make connections between where you are and where you want to be.

The ostensible audience for this list of benefits is the student body. Certainly, showcasing to friends, family, employers, and other schools is something that would help students make sense of the ePortfolio. But there's a bit more for print-imprinted

intellectuals (a label fitting for many college students, to be sure, but meant in this context to refer to instructors and administrators) in touting the ePortfolio as a portal for connecting goals to experiences. As I argue in Chapter Two, such a structure not only provides students with a viable prompt for reflection and reflective writing but also provides readers with a window onto students' familiarity with course and program goals. If students can provide specific, relevant examples of educational experiences and map them onto institutional goals, educators and accreditors can read this as evidence of effective teaching. Likewise, if some goals routinely go begging for documentation of corresponding experiences in ePortfolios, a gap will have been identified and curricular and/or pedagogical adjustments can be generated and implemented.

But aside from these pragmatic possibilities, what are we to make of the suggestion that composing an ePortfolio presents an "opportunity to use creativity to represent yourself and your education"? Anyone who has read incoming freshmen writing placement exams or assigned first-year composition students a personal literacy narrative will be familiar with the theme of the high school teacher who liberated (or, conversely, squelched) the creative energy of the student writer who is now hoping for more opportunities to let that energy flow. In that sense, we can read this statement of benefit as marketing of the ePortfolio to the incoming students at LaGuardia. There are, of course, faculty members also drawn to this possibility.

Bonnie Lenore Kyburz, Communication Across the Curriculum Director at Utah Valley State College, told me she believes that by virtue of its digitality, the ePortfolio expands possibilities for students to engage more of their senses (and sensibilities) in the creative composing process. Herself a composer of avant-garde films and the author of

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the blog "Kind of... thinking about representation," Kyburz would no doubt be receptive to LaGuardia's statement about ePortfolios providing opportunities for student creativity in representation. In particular, she values the opportunities for affective expression opened up by film, music, and graphic images.

As I've stated throughout this dissertation, I'm much more interested in reflection than creativity, at least in the context of the ePortfolio. But as the epigraph above from Dewey suggests, this is almost certainly a false binary. It may be the case that the kind of surprising, catachrestic connections I would hope to find students making in their ePortfolios are as much the result of creative thinking as they are of reflective thinking. Looking at examples from LaGuardia's ePortfolio Web site, it's sometimes exceedingly difficult to draw a line between the two.

Sandra Lorena Rios' ePortfolio

LaGuardia's Web site offers a link to a "Featured Student ePortfolio," that of Sandra Lorena Rios. The link delivers us to Rios' ePortfolio welcome page. The page has a top banner image collage, including what must be a photo of the college campus and another of Rios herself. Clicking any link quickly affirms that the sight has a static navigation frame of links that persist throughout the reading of Rios' portfolio. Beneath the image collage, a navigation bar has seven persistent links: "Welcome; Classes & Projects; About Me; Resume; Educational Goals; My Links; Contact Me." Beneath that navigation bar is a three-celled table, with either side cell holding two static links: "Multimedia Work; Writing Work" and "Programming Work; Other Work." Only the center cell ever changes in response to clicking on any navigation link. Looking at them through the lens of Burbules' menagerie, these persistent links function tropically to

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support an idea of identity; [45] regardless of how a reader explores the composition, the artifacts linked to will remain what they always are. Eschewing context-sensitive navigation, Rios demonstrates that she is either unable to make the software perform that way or is uninterested in thinking about the ways that juxtaposition can influence meaning for a reader. Or perhaps this organizational structure reflects Rios' perception of Web design conventions that emphasize maximum usability with minimum mouse clicks, in which case it would be erroneous to consider the navigation links gratuitous.

DeWitt denigrates this kind of "gratuitous linking" (139). And certainly, such persistent navigation links present limited opportunities for rhetorical analysis. Nonetheless, decisions Rios has made *are* embedded in the navigation structure. Not only do we see a mix of personal, academic, and professional aspects in the main navigation bar, but we also see a particular conceptualization of the portfolio's purpose in the four categories of work. Although there is a link inviting readers to contact her via email, Rios' ePortfolio is not primarily geared toward social networking. It's about industriousness much more than it's about staying in touch with friends.

From her welcome page, we learn that Rios is working on her Associate Degree in New Media Technology. After introducing herself, she offers a reflective testimonial that no doubt contributed to the decision made by LaGuardia's Center for Teaching and Learning to put her ePortfolio forward as a featured student composition.

> From my first ESL class when I was introduced to ePortfolio I have grown a lot. Not only have I gained technical skills, but I've learned how to express myself as a serious student and a hard worker. The different

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[45] Besides identity, Rios' work links could be read as serving a synecdochical function; whatever exists on the four linked-to pages is representative of her entire body of multimedia, programming, writing, and other work. Such representation is, of course, a core function of the portfolio, whether electronic or paper.

sections of my ePortfolio made me realize the important things about how

I see myself starting at LaGuardia, how I see myself now and in my future.

My experience with ePortfolio at LaGuardia has made me see more of

who I want to be and how I can accomplish my goals.

There's a touch of technological determinism here, but Rios maintains her subject status

by retaining the role of agent. The ePortfolio may have "made [her] see," but she's still

the one who wants to be someone and accomplish her own goals. We are encouraged by

a link to "Read More>>" about Rios and her goals.

The "Read More>>" link turns out to be, as its label suggests it will be,

metonymic, leading the reader to a page of reflection on Rios' ePortfolio experience from

which the paragraph cited above is excerpted. The linked-to material is what was

contiguous with the welcome paragraph. Rios shows an awareness of audience

expectations and Web style by choosing not to deluge the reader with an extended

reflection on ePortfolios on the welcome page. But she delivers on the promise that the

link will lead to more reflection. We are delivered to a page whose URL ends with

"reflexion.html," and it is indeed a reflection on the author's encounters with the

ePortfolio technology and composing process. She tells readers that the first section

developed was the "About Me" page, a personal narrative accompanied by personal

photos. The next draft, "my second ePortfolio," brought in academic work and

educational goals "that would make my family proud of me." Then, looking toward her

career, Rios writes, "I decided to use my ePortfolio as an opportunity to show and

demonstrate all the skills that I have had learned throughout my journey at LaGuardia

Community College." In this short reflection, we see Rios thinking of her ePortfolio in

ways that connect to six of the seven benefits of ePortfolios put forward by the college. The only benefit not specifically addressed is that of using the ePortfolio to apply for transfer to a four-year college.

Recall that one of the persistent links in Rios' navigation bar is to her résumé. Having clicked through to see multimedia examples of her work, including pictures she drew, Web sites she designed, and films she produced, I am surprised to see a thoroughly traditional résumé. It has no embedded links, no images, and no unexpected font choices. In Chapter Three, I discuss the Microsoft employee (Melanie) who argued that an ePortfolio can make the "old fashioned resume look quite boring." Perhaps it can, but as Rios' example demonstrates, it need not. She wants the ePortfolio to "show and demonstrate all the skills" she's acquired; her résumé may show those skills, in the sense of listing them, but it doesn't demonstrate them. This is puzzling considering her major is New Media Technology. It's not the case that she is unfamiliar with the idea of demonstrating her technological and design skills through the composition of her ePortfolio; her "Classes & Projects" page includes this claim: "My E-Portfolio itself is a good example of the quality of my work." And it is. Thus, it seems safe to assume that Rios deliberately stuck to a traditional résumé format, adhering to the generic conventions of a paper résumé, based upon rhetorical considerations rather than technological limitations. She seems to realize that the entire portfolio functions as a résumé of her digital technology skills; the résumé itself doesn't have to do that work, so she doesn't have to run the risk of alienating potential employers who might be looking for a traditional résumé by offering them only an unconventional one.

The four pages corresponding to the work categories in Rios' ePortfolio contain links to individual projects, followed by very brief descriptive summaries of those projects. The "Classes & Projects" link directs the reader to an alternative portal to the projects and includes reflective commentary about the courses and experiences that generated the linked-to projects. It could easily have been a compilation of the four sets of links and short descriptions available through the work links. Instead, for no apparent reason (such as a template structure that includes text boxes for reflection), Rios takes the opportunity to reflect on what she learned while working on each project, e.g., "I learned so much from this class; before I took it, I did not even know what citation meant; however, after taking this course, I was able to develop research papers and other written work that requested any type of research with any problem at all." That may not be profoundly insightful, but it does demonstrate an awareness of transfer and a desire to make forward reaching connections between the experience and future tasks that will call upon what was learned. Describing her internship as a student technology mentor, Rios reflects on more personally meaningful experiences.

> Right know I am also assigned to be the assistant of the instructor of a class specially designed for people who are high school teachers and do not know how to use the technology. Imagine me, a student, teaching the teachers! It feels so good =) In addition, I also have to help faculty and sometimes teach them if they do not know how to use any of the technologies provided by LaGuardia as it is the blackboard.

The technological skills she is developing are not merely instrumentally useful; they have intrinsic, identity-constructing value for Rios. For her, Blackboard is functioning as worldware in the least narrow sense of the word.

Rios tapped into the purported benefits (along with some unexpected ones) of a Blackboard ePortfolio. She feels that the software helped her to learn more about herself and her goals. Perhaps it did so by prompting her to articulate her goals and put them into juxtaposition with her coursework, as well as with some autobiographical material. And perhaps it was that bit of autobiography that prompted the seemingly unsolicited reflective writing. Right now, I want to mark this as the emergence of one of those valuable types of reflective response other than task-specific-strategies that the sixth take-away question from Chapter Two anticipates. I'm aware that I'm drawing an inference based upon a very small sample of data. Fortunately, LaGuardia Community College and its students have quite generously published several other ePortfolios. Taking a look at a few more complicates the picture a bit.

Meghavi Patel's ePortfolio

Meghavi Patel welcomes visitors to her ePortfolio with a photo of herself and a greeting that lays out the themes that will be repeated throughout the portfolio.

> Hi, I am Meghavi Patel. I am from India. I came in this country before year ago. I have my parents and a brother in my family. I was born in India in 1986. Now, I live in the New York in Queens. I didn't attend any High school in U.S.A. as I came in this country before a year. LaGuardia is my first college in this country. My major is Liberal Arts. I want to get

transfer in any college that have Pharmacy from the LaGuardia college

after a year.

This introduction is followed by a photo of the Taj Mahal and a list of hyperlinks: "About Me, Classes and Projects, Resume, Educational Goals, Links, Contact." Since this is the exact same set of categories used by Rios in her navigation bar (with the exception of the somewhat superfluous "Welcome" link), it seems safe to assume that these links are part of a Blackboard template for the basic ePortfolio. Apparently not as familiar with Web design or conventions as Rios is, Patel does not place these links in a persistent navigation bar. This relative lack of concern for navigability could explain why Patel didn't see the need for a welcome link, whereas Rios' ubiquitous linking scheme never fails to anticipate every possible navigational desire of a reader.

Although the content categories are the same, the ePortfolios of Patel and Rios display significant differences in the quantity and quality of reflective writing. Patel's "About Me" page is heavily weighted toward discussion of her goals: get good enough marks to transfer to a pharmacy school and then become a pharmacist. These are repeated on her "Educational Goals" page. Perhaps writing the goals material first, or even knowing that it would have to be written to fill out the template, bled over into the "About Me" page. Nonetheless, Patel does provide a few personal notes about herself. She writes, "I am very sensitive by nature. I can't see see anybody's problem." Although a bit cryptic, this pair of sentences evinces an intent to share something about herself that is not directly related to her educational goals. The template convention of an "About Me" page turns on the trope of hyperbole; in a few paragraphs, the writer is supposed to crystallize her essence and offer it up for the reader's inspection. It's not

enough, writers such as Patel seem to intuit, to share goals and educational history. Something private, or nearly private, must be revealed.[46] Patel rises to this challenge, briefly, and then immediately moves on to perfunctory information about her family that quickly leads back to her educational goals. She does not take the opportunity to reflect on this aspect of her nature. She writes instead about learning about the semester system and ACT tests, which leads to the one bit of reflection on the "About Me" page: "To learn about these things is really important to me because each system is totally different than I ever learned before in my college life in India. I felt like what I learned in this college is very useful to me in my life and for the future." Having thus connected her past, present, and future, Patel closes in an appropriately hyperbolic mode, considering the context: "That's all about me!"

Patel's "Classes and Projects" page consists entirely of unannotated links to four classes: "Basic Writing, Basic Reading, Critical Thinking, and Sociology." Each link

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[46] An ePortfolio template that includes an "About Me" page may thus simultaneously prompt composers to generate the autobiographically-inspired reflective responses we see emerging in Rios' ePortfolio *and* generate resistance to such a prompting. Discussing Foucault's notion of the examination as a subject-constituting form of discipline, Peggy O'Neill argues, "As we grade papers, evaluate portfolios, or design placement and proficiency exams, we are implicated in the inherent surveillance of these activities and the concrete consequences for individuals as well as in their potential for making disciplinary knowledge" (83). O'Neill goes on to state, "The portfolio can be constructed as a space that exposes the student writer…" (155). Certainly, an "About Me" template is overtly hegemonic; it may even be invasively panoptic. Interestingly, O'Neill seems much more concerned about such hegemony taking the form of limitations placed upon portfolio composers by explicit rating criteria than she is by the invitation for personal exposure represented in open-ended prompts, i.e., "About Me" page templates. That said, O'Neill reserves some of her most pointed challenges to portfolio assessment for mandatory reflective components. Likening the reflective letter to Foucault's notion of the confession, she refers to it as "an obligatory act that demands the writer to construct herself in the appropriate discourse to someone in a more powerful position" (163). While taking O'Neill's point and acknowledging the disturbing overlap she has uncovered between reflection and confession, I must, hopefully uncynically, confess that it seems to me that all school writing, if not *all* writing, has elements of the rhetorical situation that match her description of the confessional obligatory act. When does public writing not demand constructing a persona for an audience with regard to appropriateness and power? To encourage students to imagine that writing is a place to "be yourself" and disregard power relations between oneself and one's readers would be to encourage defenselessness against the "potentially sinister aspects of portfolios" (173) O'Neill writes about. Perhaps less dramatically, but certainly no less importantly, doing so leaves students unprepared to take advantage of the heuristic potential available through conceiving of the audience as a dialogic partner–warts, power differentials, and all.

leads to a page with a paragraph (apparently copied from the college's course catalog) describing the course and its objectives, a link to an assignment Patel completed, and a paragraph labeled, "Reflection." Her reflection on an essay she wrote regarding hate crime legislation for her basic writing course is actually a summary of the assignment and the conclusion she reached. The basic reading course's reflection paragraph moves a bit closer to reflection on what was learned.

> I did this assignment in basic reading class. This was the essay on the Edward Murrow who was the main charecter of the book. By writing this eassy, we learn a lot of things about the journalism in the history. We learn about the freedonm of speech and freedom of press. Edward Murrow was a good writer as well as good journalist.

Although there's not much specificity in the description of what was learned, an evaluative statement brings Patel into the paragraph, allowing her to articulate one thing she will take away from the experience, namely, that "Edward Murrow was a good writer as well as good journalist."

This pattern is repeated in the critical thinking reflection paragraph, with the movement toward specificity and evaluation continuing.

> This assignment is an interview of the Gandhi who was known as a "father of nation" in India. He is famous in world. I learn a lot of things about Gandhi from this assignment. The way that he helped to gain the freedom in India, about his vegetarian diet, about his method of non-violence. It was really good assignment.

There is no solid evidence that these reflections were written in the same order in which their links appear on the "Classes and Projects" page. But in the absence of evidence to the contrary, the progression toward specificity and evaluation could be read as the product of practice. This supposition is supported by the final reflection in the series.

> I did that assignment in my sociology class. We use the website infotrac. We took three articles from this website. We compare those articles with the GSS data and made the hypothesis. This assignment sounds hard in begining. The intersting part of this assignment is the result of the GSS data. It was surprising to me. The result of this reserch was that the happiness of marriages are decrising compare to last few years. I think I did this assignment well.

Patel is now commenting on specifics of the assignment, her reactions to those specifics, and her own performance. She does not articulate the basis for her self-evaluation, but it's reasonable to assume that the specificity that has been building through practice with the genre will eventually spill over into that section of future reflections.

Specificity of self-evaluation does appear on Patel's "Educational Goals" page. After telling readers that she wants to study pharmacy because "one can earn good money in the pharmacy," she writes, "The other reason that I select this major is that I like science and specially chemistry which is a main subject in the Pharmacy. I think, I am good in science." Admittedly, this is very brief, but it does represent unsolicited reflection. Perhaps something about the prompt to articulate one's goals encourages reflection on those goals.

Patel's "Links" page affirms a reading of her portfolio as one composed by a woman who has developed a coherent professional identity. Of the four links listed, only one ("Infotrac") is not directly linked to that identity. "Pharmacy Choice" carries the annotation, "I would like to major in Pharmacy. In this link you can find the information about the scopes of pharmacy." "St. Johns college" is actually a link to the St. John's University College of Pharmacy Web site. Finally, Patel annotates the "Pharmacy jobs" link by writing, "I like to work as a pharmacist. So, I refer this website to see the demend of the jobs in pharmacy." These links help a reader see Patel as a student with clear career goals, an image that is affirmed throughout her portfolio. Another way to read all of this affirmation of career goals is that the template functions to reinforce this identity. Nothing apparently prohibits Patel from linking to entertainment sites, social networking sites, or sites about India. And yet, she does not choose to do so.

Unlike Rios, Patel does not make design choices that demonstrate proficiency with software or familiarity with Web style conventions. This is easily understandable in light of the two students' chosen fields. Also, Patel composed her ePortfolio after only one semester at LaGuardia, whereas Rios had many more experiences at the college to integrate and draw upon for reflection. And of course, they are two different people. Whichever of these facts accounts for differences in creativity as demonstrated in the ePortfolio, these differences do not completely mask a growing reflective tendency on Patel's part. We can never know if this tendency would have developed at the same pace in the absence of the ePortfolio project, but the project did not apparently prohibit its development. I recognize this is hardly a ringing endorsement. And that's all right,

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because this dissertation isn't an effort to construct an endorsement of ePortfolios. For now, complications and suggestive possibilities are exactly what we're after.

Ruth Martha's ePortfolio

LaGuardia Community College recognizes three distinct levels of ePortfolio based upon technological proficiency of the student composer: basic, intermediate, and advanced. Patel's is a basic ePortfolio, described on the college Web site as being "for students who have very limited computer skills and will not require any other kind of computer programs." Students are assured, "You will only need to have access to the internet and logon to the Blackboard 6 ePortfolio Environment. Many students create their first ePortfolio in the Basic level." Rios' ePortfolio appears to be an intermediate level one. At least, it appears to have been started as an intermediate level ePortfolio. I base this assumption on Rios' use of a navigation template available from the Intermediate ePortfolio Gallery of the Web site, which informs readers that these "ePortfolios are for students who have some degree of computer skills and will require students to learn/download the free computer program called Netscape Composer. Students who choose to create an intermediate level will use one of our preset templates." The advanced level is "for students who have advanced computer skills and would like to create an original ePortfolio template and banner. This kind of ePortfolio requires students to be really ambitious and learn technically sophisticated web/graphic design programs like Macromedia Dreamweaver, Fireworks and Flash." Ruth Martha's ePortfolio is exhibited in the Advanced ePortfolio Gallery.

Majoring in Business Administration, Martha appears to be as focused on her career path as Patel and Rios are; her "Goals" link connects to a page titled, "My Career

Goal." But Martha's ePortfolio displays more willingness to experiment with multimedia software and a notable difference in the level of integration between different aspects of her life. It is impossible to know if there is a causal relationship between these two qualities of her ePortfolio, let alone which direction such a relationship would take. Is a person with an artistic temperament more likely to see the composition of an ePortfolio as an opportunity to engage those sensibilities in order to construct a representation of herself that aligns with that temperament? Or do the multimedia affordances of the digital environment, combined with the right mix of generative instructions and template categories in an ePortfolio system, support or even encourage composers' creative and integrative impulses? Perhaps it's both. Certainly, advocates and vendors of ePortfolios (a pair of heavily though not entirely overlapping sets of people) would argue that both effects occur. And certainly, Ruth Martha's ePortfolio could be pointed to as support for that argument.

Martha's ePortfolio is introduced by an animated splash page that is dominated by a photo collage of her face superimposed next to an Indonesian island. A text box slides in from the left, announcing, "God blessed me with some great, unique features-some beautiful, in my eyes, and some not so beautiful. But I think we are all created this way for a reason, so I have no desire to tamper with that." The reader is invited to click on a link labeled, "Enter." This conventional metaphor of digital environments seems refreshingly apt because the "space" entered is a rich, multidimensional one. A consistent color scheme in green and black holds together a thoughtful mixture of fonts, image galleries, and shapes. Music begins playing, and we learn by reading her introduction of herself that it is music she helped create as a member of a Christian pop

band. This "About Me" page describes a person who works for a jewelry company and wants to open one of her own after earning a degree in business administration. She is a volunteer musician at the church her uncle pastors, and her band has released a CD. She informs her readers, "Creating an ePortfolio was an exciting experience. I am really thankful to Prof. Regan who was my instructor in the Oral Communication class. He encouraged me to create an ePortfolio as a final project instead of a speech. In fact, I was the only one in class that created an ePortfolio and I felt good about it." She creates and demonstrates a sense of integration through the metonymous use of text-embedded links to the Web sites of the jewelry company and the church. Clicking on either opens a new window, rather than taking the reader completely away from the ePortfolio. This is a fairly simple feature to execute, but as a design choice, it demonstrates an awareness of and concern for audience. It is highly unlikely that someone would use Martha's ePortfolio as a portal to these other sites, at least not on a first reading. She offers these metonyms, these entities of contiguity to herself, so that readers can understand her more complexly. But she maintains their contiguity by holding readers in her ePortfolio, rather than sending them away with identity links that would erase the distinction between herself and these organizations.

I'm making much of this little design choice; a skeptic might argue that it could just be the only way Martha knows how to write a link and that I'm falling victim to the old intentional fallacy. But at the bottom of her "About Me" page, she uses a self-target link (as opposed to the blank-target links described above) to carry the reader to a new page. She writes, "To read more, click here." And if we do, we're taken to an entire

page of reflection on the ePortfolio composition process titled, "Reflection on My ePortfolio."

Martha has a persistent navigation bar on the left side of every page of her ePortfolio. The links are to the same categories Patel and Rios used: "About Me, Projects, Resume, Goals, Links, Contact." The fact that these categories appear in the ePortfolios of three students using different templates at different levels of computer expertise, combined with the fact that Martha does not have a navigation bar link to her dedicated ePortfolio reflection page, despite her demonstrated proficiency with Web design, tells me that LaGuardia is strongly encouraging, if not requiring, the use of these six categories. Browsing through the gallery of student ePortfolios on the college Web site, I find every example contains these six links. Sometimes they are slightly reworded, such as from Patel's "Classes and Projects" to Martha's "Projects." And sometimes an extra category is added, such as Rios' "Welcome." Most likely, every template includes these categories. They provide students with space to bring in different aspects of their identities: personal, academic, professional, aspirational, and social. And by providing that space, the categories seem to suggest an opportunity for reflection to students—not to all perhaps, but to some.

Apparently prompted by this suggestion, Martha writes a reflective essay that is no doubt read by LaGuardia's ePortfolio team as an affirmation of their dedication to the project. I must confess that it goes a long way to overcoming my skepticism of ePortfolio hype and affirms my decision to invest several months of my life writing a dissertation about the tool. I chose Martha's ePortfolio for analysis at random from the examples in the college's Advanced ePortfolio Gallery, but it's not truly a random sample

because the college chose it as an exemplar for inclusion in the gallery. Therefore, I won't argue that all, most, or even many students will have the experience with ePortfolios that Martha has had. But an exemplar shows us what's possible. And this particular exemplar deserves a very close look.

After thanking her speech professor for getting her started, as noted above, Martha describes meeting with the ePortfolio consultants. She writes, "They helped me to create my own ePortfolio. It was such a great experience because I was trying to learn more about myself and find out what I will do in the future." Writing after the event, she may be misremembering a bit, retrospectively projecting current thinking onto past events as Schacter's model of memory would suggest. We can never know for sure. But if we take her on her word, Martha came to the ePortfolio composition process with a very generous notion of what it had to offer her. Perhaps the hype helped prime this student to make the most out of the ePortfolio experience.

Martha reflects on the process succinctly but with specificity, placing herself in the narrative in ways that affirm the claims of ePortfolio advocates and demonstrate her rhetorical awareness. She writes, "Since I started building my ePortfolio, my creativity has increased and realized that learning can also be fun. The most challenging part was to decide the design of it, like picking the colors, pictures, and music. I want to do my best so the audience can enjoy my ePortfolio and understand it easily." At this point in the reflective essay, she has said what most educators would probably be satisfied with. Indeed, the realization that "learning can also be fun" sounds a bit like schmoozing with an intended audience of teachers. But this is followed by reflection of another order of specificity and connectedness altogether.

I could see the improvement that I make through all the projects and assignments. I realized that the skills that I got in some classes, be a good foundation to other subject of classes. For example, the Oral Communication class taught me to speak in front of the class and did some speeches. In fact, for my Marketing class I needed to do a presentation that required me to speak in front of the class. I was not worry so much because I was doing it already in my Oral Communication class.

I learned a lot more about myself in the Cooperative Education class. I found out what are my strongest and weakest points in doing a job. I do have the ability to adapt quickly and change rapidly in the workplace. Also, I do have some computer skill that really useful for most of my classes such as do my homework in Microsoft Word, making Power Point presentation, and do my math project in Microsoft Excel. In my marketing class, my group was the best group for developing a new marketing product. I was doing the advertising part that computer skill have a big role in it. Therefore, I made a magazine ads and a billboard advertising.

In the context of an ePortfolio, this student is recognizing the development of her academic skills and the transferability of them to her professional future. The composition of her ePortfolio occasioned backward-reaching, high road transfer because she was able to abstract skills that carried over from one class to another. Engaging in this reflection also prompted some forward-reaching transfer as she contemplates how her adaptability will be an asset in the workplace.

As I've said, Martha exhibits just as much dedication to clear professional aspirations as Patel and Rios do in their ePortfolios. Like Patel and Rios, Martha eschews the opportunity provided by the digital environment to challenge traditional conventions of a résumé.[47] However, she shows an increased sensibility to design aesthetics and an increased concern for audience by formatting her résumé to match the design themes of the rest of her ePortfolio and providing a link at the bottom of the page to a printer-friendly version that reads, "Click here for Resume word document." She discusses this choice, obliquely, in her reflective essay: "By publishing the ePortfolio, the other advantage is when I want to apply for a job, I do not need to send them a resume because the resume is already online and it makes it easier for me and the interviewer to get the resume as soon as possible by just typing the ePortfolio's website." Again, in the context of a reflection, this student is projecting an application of her academic work into the future of her professional life. What's more, she extends the high road transfer beyond herself to other students: "From all of these experiences, I would like to encourage all the students to make their own ePortfolio so they can be creative, learn more about themselves, and get updated with this modern world." This conclusion to her reflective essay displays not only Martha's consolidation of abstract concepts she has learned and is taking away from the ePortfolio composition experience but also a complex understanding of her intended audience. She knows educators at LaGuardia Community College will be reading her work. She also knows that students will look to her as an example. And since she plans on directing potential employers to the résumé she has embedded within her ePortfolio, she knows they are in her audience, too.

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[47] She does take advantage of hypertext functionality by embedding a mailto hotlink in the Web-formatted version of her résumé. But again, she shows audience awareness by choosing to label the link with her email address, rather than with a more Web-conventional label, such as "Send me an email."

Martha's reflective essay demonstrates the connections she has made across the learning experiences she has had in college. She is clearly in integration mode as she composes this document. We see that integration occurring on her "About Me" page. We also see it on her "Links" page. She has six links, presented beautifully in a table that contains a clickable, blank-target screenshot link to each Web site, a title for the site, a link to it in the form of its URL, and a descriptive annotation. Along with demonstrating her Web authoring skills, this links page demonstrates again the seamless integration of the author's various identity aspects by virtue of the links chosen: Heartbead New York (the jewelry business Martha works for); Baruch College (where she apparently plans to seek an MBA); City Blessing Church (where her uncle is the pastor and where she plays keyboard); Friendster (which she tells readers is "my favorite website!" because "I am an easy going girl that loves to know more people."); Bloomberg's Website; and Market Watch. This is not catechresis; it's metonymy. What might otherwise appear to a reader as a random compilation of links becomes instead a gallery of the contiguous aspects of the author's identity. This effect is the result of careful visual and functional design choices, along with integrative personal and reflective writing throughout the ePortfolio. After reading her ePortfolio, it is hard to imagine how this student will fail to make connections between what she learns in college and all of the other aspects of her life, both now and in the future. If it seems as though I'm making too much of an interpretive leap here, I'd like to close this analysis of Ruth Martha's ePortfolio with one more passage from the reflective essay she embedded within it.

> My weakest point is in communication. It is not that I cannot interact with
>
> people, but sometimes I just do not know what to say. Therefore, through

this experience in making ePortfolio, I am looking forward to do my

internship in STM (Student Technology Mentor). I do have the skills and I

need to learn more so I can help other. In this internship, it will require me

to communicate with people in group or individual.

These are the words of an individual who is determined to realistically assess her

strengths and weaknesses and make connections between her experiences that will allow

her to transfer assets of the former to cover liabilities of the latter. She has persuasively

demonstrated her capacity to do just that. And if we take her word for it, the ePortfolio

played a role in developing that capacity.

The Institutional Context at LaGuardia

But if we want to avoid falling into the fallacy of technological determinism, we

must ask at this point, how did the ePortfolio come to play such a role? Just by looking at

three examples, we've been able to surmise that students are responding to some prompts

for content generation and arrangement. It turns out that LaGuardia's Center for

Teaching and Learning has provided students with some fairly directive instructions for

composing the ePortfolio. From the ePortfolio Web site, students can follow a link to

"Introduction to ePortfolio." On that page, students are told, "The ePortfolio is a unique

tool that will allow you to merge your personal and professional goals, putting your

education into a larger context." The familiar notion of portfolio composition being

about collecting, selecting, and reflecting is contextualized for this application, with the

three action words themselves bolded where they appear in the text. A fourth activity is

added: "Building an ePortfolio takes time; you may even create several ePortfolios, each

with more sophisticated classwork and digital design, as you **connect** your studies at

LaGuardia with your career goals, and personal experience." This sets the expectation that students will make such connections, and as our sample indicates, some do. But setting expectations for such abstractions as making connections doesn't guarantee that students will be able to make them. No doubt aware of this fact, the Center for Teaching and Learning provides a Web page on how to "Develop your ePortfolio." This is where the content categories are spelled out. Students are told that "Most LaGuardia ePortfolios have 6 sections," although seven are listed: "Welcome, About Me, Classes and Projects, Educational Goals, Resume, Links, and Contact." And from this page, students can also download a "Guiding Questionnaire" titled "ePortfolio Writing Assignments." This document contains over fifty questions that are "designed to help you get started with your writing." Although students are told, "You don't have to answer all the questions, and you should certainly feel free to add information not asked in these questions," two of the first seven include a parenthetical "optional" at the end. If those are the only optional elements, a savvy student will read the others as required. At a minimum, a less savvy student will be confused by the apparent contradiction between the two types of instructions.

Nonetheless, the questions on the questionnaire go a long way toward explaining the level of integration (of identity facets) and connection (across educational experiences) displayed in the ePortfolios I've analyzed. Students are prompted to consider, "How does this assignment connect to other work you've done in this or other courses?" They're asked to "Describe an event that has shaped the person you are today and motivates you to do well in college." Bridging questions such as these prompt students to connect their past to their present and make connections across the

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experiences they are having in college. The questions included in the "Final Reflection on Your ePortfolio Experience" section are obviously designed to help capture qualitative data that the Center for Teaching and Learning can hold up as support for the investment in the technology. But they are also certainly helpful in prompting students to articulate and consolidate what they have learned, thus making it available for transfer. A sample of the questions in this section could be extracted for productive application to just about any portfolio project, electronic or paper.

> Look back at your work on your ePortfolio. What have you learned by creating a cumulative showcase of your growth and development at the college? In what ways have you grown and developed as a student, as a professional and as a community member as a result of this work? Can you make and see more connections among your classes and across academic disciplines as a result of your ePortfolio work? Explain how and why. In what ways has creating an ePortfolio helped you to make connections? What have you learned about yourself as a result of creating your ePortfolio?

These are, of course, the kind of questions I set out in hope of answering when I began this dissertation. In particular, "In what ways has creating an ePortfolio helped you to make connections?" Perhaps the surprising answer is that it helps by virtue of asking the question. I haven't seen any examples from the LaGuardia galleries in which students reflect specifically on their use of hyperlinks. And perhaps this shouldn't surprise me, considering Burbules' insistence that we are not doing enough to help students develop critical hyperreading skills. But it looks as though LaGuardia Community College may

nonetheless be reaping some of the rewards of a critical hyperliteracy through the combination of an ePortfolio platform and a directive set of heuristic prompts for content generation and process reflection.

An ePortfolio project approach similar to LaGuardia's but with the deliberate addition of prompts that lead students to notice and reflect upon where they are linking, what they are linking to, why they are making those choices, and how those choices might be impacting a reader's experience of the ePortfolio could more pointedly address the development of critical hyperliteracy. This is certainly a reasonable addition, though I would argue that there are already far too many questions on LaGuardia's guiding questionnaire. Adding another set related specifically to linking would only be effective if the new set of questions weren't lost in the sea of current questions. Some paring down is already in order, and even more would need to be undertaken so that the link-related questions would be able to capture students' attention. And it's very important that they do so.

The ePort Consortium's "Electronic Portfolio White Paper" makes much of the idea of ePortfolios as personal learning spaces.

> By facilitating and capturing the evolution of concepts and ideas through revisions of work and interactions with instructors, mentors, classmates and friends, electronic portfolios can be much more than a Web site that simply organizes and presents final projects. They can foster learning spaces where the author can gain insights and a better understanding of him/herself as a learner. (12)

Revisions and interactions are definitely important affordances of ePortfolios. And we have seen that at one college, some students are gaining and documenting such insights and better understandings of themselves as learners. It appears that this is facilitated not merely through the opportunities for storage and sharing of documents but also through the guidance of heuristic questions. If these are helping students create meaningful learning spaces, other types of questions have the potential for augmenting those learning spaces. I would argue, as I believe Burbules would, that such spaces must support the development of critical hyperliteracy, and that means paying more attention to the use of links. Links are where students make connections between elements of their portfolios and of their lives, and the more they are encouraged to metacognize about the mechanisms of such connections (links), the more they will be able to document for themselves, in the form of reflective link annotations and more extended reflective pieces in their ePortfolios, what they have learned, what they've done with that learning in the past, and what they can do with it in the future.

Epsilen: a counter-example

I am making much of the effect of the questions LaGuardia Community College asks its students to consider during the composition of their ePortfolios on the level of integration and connectedness displayed in those ePortfolios. A plausible rival hypothesis is that such connections would occur in the absence of such questions because the digital technology just invites the making of connections. One way to test that hypothesis would be to look at an example of an ePortfolio system that does not include heuristic composition prompts. The Epsilen Environment is one such system.

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From the Epsilen Environment home page, we learn that Epsilen "places social networking and ePortfolios at the center of global eLearning, creating a new environment for the next generation of learners and professionals." The founder and chief technology architect of Epsilen, Indiana University-Purdue University Indianapolis informatics professor Ali Jafari, has composed an ePortfolio using Epsilen. Its visual design is reminiscent of course management systems such as Blackboard, with standard icons accompanying standard navigation links on the left side of the page: "Home, ShareIt, Resume, Showcase, Login." There are persistent navigation boxes on the right side of the page: "Quicklinks, Groups, Courses, Shared Objects." A photo of the author and his contact information dominate the top center of the page. A brief "About Me" paragraph tells us where Jafari works, what his research interests are, and that he is interested in hearing what we think about Epsilen. There is not a single statement on any page of his ePortfolio in which Jafari reflects on connections between elements of the ePortfolio or on the process of composing it or any of the documents or projects linked to from it. In one sense, this is really not surprising because nowhere on the Epsilen Environment site is there any set of heuristic prompts for composition that might be analogous to the guiding questionnaire employed at LaGuardia Community College. And yet, according to John Waters,

> The Epsilen Environment is an example of what can fairly be called a new
> species of electronic portfolios. No longer merely a handy digital means
> for collecting and displaying student work or the professional
> achievements of teachers, this new breed adds internet-based applications
> and services that are fundamental to the Web 2.0 phenomenon-- things

like social networks, blogs, wikis, folksonomies, and mashup tools. ("In

the Driver's Seat")

Adding Web 2.0 interactive features to the standard digital affordances of ePortfolios,

Waters claims, "is turning the traditional electronic portfolio into a diverse personal

learning space, putting students at the helm of their academic experience." If technology

alone generates connection and reflection on that connection, why isn't Jafari doing any

reflecting?

An obvious answer is that Jafari's ePortfolio is a different kind of portfolio

compared to those composed by Patel, Martha, and Rios. They are students at a

community college; he is a professor at a university. Jafari's ePortfolio is more of a

professional résumé. But does that mean that he's done learning? Is he past the point in

his life when reflection has anything to contribute, or would reflection be frowned upon

by his intended audience?

The Epsilen ePortfolio certainly is a different kind of ePortfolio. But the

distinction between student and professor can't account for the difference. Russel

Statham, a junior at CSU Fresno, has also composed an ePortfolio using Epsilen, and he

doesn't do any more reflecting on the composition of it or on the elements embedded

within it than Jafari does. His ePortfolio looks very much like Jafari's. The color scheme

is different, the photo is different, and there are a couple of Web 2.0 links added to

Statham's persistent navigation bar: "My Blog" and "My Facebook." Integration of

various aspects of his identity occurs in these linked-to spaces, and they are arguably

integrated with the ePortfolio by virtue of having link anchors in it. These are interesting

metonymic links, to be sure. Placing them within the professionally-oriented Epsilen

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ePortfolio, Statham seems to be saying, "These are other places that I compose online, and there is no real barrier between the author who does that composing and the one who composed this ePortfolio." So there is integration of identity aspects, made convenient by the digital technology because embedding a link is such an easy thing to do. But I would argue that aside from the reflection done in these connected spaces not being reflection on the ePortfolio or the elements of it, there is no reason whatsoever to believe that Statham was encouraged by his experience with creating an Epsilen ePortfolio to become a blogger or a facebooker.

A brief examination of one more plausible rival hypothesis should suffice to seriously discount the notion that ePortfolio projects without accompanying heuristic and reflective prompts encourage just as much reflection as those with them. It won't have escaped the reader's notice that the examples from LaGuardia Community College were all composed by women, while the examples from Epsilen are both composed by men. I'm certainly not in a position to perform a statistical analysis of relationships between sex and reflection in these two ePortfolio environments. But I don't believe I have to do any such analysis in order to discount a hypothesis that sex accounts for the differences seen between LaGuardia and Epsilen ePortfolios. A man reflecting in a LaGuardia ePortfolio or a woman not reflecting in an Epsilen ePortfolio would disrupt the neat narrative that men are just less reflective than women.

Charles Mak's ePortfolio

Charles Mak's ePortfolio is included in LaGuardia's intermediate gallery. He welcomes readers with a photo of himself that has been manipulated to look like something from the Impressionist School and with these words:

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Welcome to my ePortfolio, where you will see the creative side of me,

which I'm usually used to concealing. I've constructed my ePortfolio to be

anything but dull; you may even find it to be the worst you've ever seen.

While visiting, you'll be viewing a variety of artworks, poetry and essays

that I have composed. These works reflect my personality and ideals,

while expressing open-mindedness towards others. Furthermore, they

reflect my struggles in the process, because one triumphs through failure.

This tone of openness and reflectiveness persists throughout Mak's ePortfolio. For

example, after explaining on his "Educational Goals" page that a career in art is his goal,

he writes, "Working towards my goal will change my life, by allowing me to be more

open minded. Because what bosses require may not be what I agree with. In order to be

able to compose art that I disagree with, I would have to be more open-minded." This is

forward-reaching, high road reflective transfer. He has abstracted the idea of open-

mindedness from his current studies and is applying it to his image of a possible future.

On Mak's "Classes and Projects" page, he reflects on himself as a writer and on

his own writing processes. He writes, "I often find writing and producing art equally

difficult, because ideas are established inside our minds using words as well as images

but communicating in words can be difficult. Even though I have written many papers,

writing an introduction can be strenuous." Here is both reflective transfer across the

domains of written composition and artistic production and the specificity (in identifying

a particularly challenging aspect of composition) that will help Mak focus future efforts

productively. Another example in this vein is included in the annotation he writes for his

"Recent" link in the "Papers" category: "Essays are my personal weakness, especially

when they are required to be completed in class. I am often traumatized by time limits with in class essays, because I am a patient writer. I take a significant amount of time in composing a paper, thinking very carefully before physically writing." He is articulating what he has learned about himself as a writer, connecting difficulties to processes. Each paper linked to includes such specific reflections, but I think the counter-example has been adequately presented; the success of LaGuardia's approach to encouraging reflection is not limited to female ePortfolio composers.

To be fair, it didn't take me much longer to find an example of an Epsilen ePortfolio composed by a woman that does contain reflection. The ePortfolio theorist and advocate Helen Barrett has created her 23rd ePortfolio using Epsilen, and she has included a "Reflection" link to a page on which she reflects on the composition process. I resist reading this example as evidence that Epsilen facilitates reflection despite its lack of heuristic prompting for two reasons. First, Barrett comes to Epsilen with the intention of reporting on its features and functionality; she is an extreme example of an ePortfolio power user, not representative of the generic composer. Second, although she has a "Reflection" page, it's of surprisingly limited scope. The entire text of the page reads,

> This is the 23rd tool that I have used to create my electronic portfolio.
> Since I copied the pages from another HTML version of my portfolio, all
> URLs came over as weblinks. The tool allowed me to reconstruct my
> portfolio in about than an hour, copying and pasting the information.
> There is also no data management tool, to aggregate assessment data.
> Therefore, this tool would work for formative assessment (providing

teacher and peer feedback on student work) but not for summative

assessment.

Seeing only these five sentences on her "Reflection" page makes me think Barrett's

"Reflection" link is functioning a bit hyperbolically. This Spartan bit of reflection from

an ePortfolio expert also lends support to the anti-technological determinism notion that

ePortfolio spaces do not foster reflection merely by virtue of being electronic. If anyone

were going to reflect in a sustained, transfer-supporting way, Barrett would be a top

candidate. And indeed, she does indicate a proclivity for reflection by setting up a

"Reflection" page. But in the Epsilen Environment, which includes no explicit prompts

for reflection, with the exception of the last sentence's forward-reaching bridge, Barrett

does very little reflecting.

The ePortfolio at Penn State

Even if the comparison between a handful of ePortfolios from LaGuardia

Community College and from the Epsilen Environment (affiliated with Indiana

University-Purdue University Indianapolis) suggests that ePortfolios are more likely to

display reflective thinking (through writing, which includes linking) if their introduction

to authors is accompanied by prompts for connection and reflection, it admittedly doesn't

make that argument conclusively. This is not a dissertation written in partial fulfillment

of the degree requirements for a scientific discipline; I am not presenting the results of a

controlled experiment. I am exploring texts, interpreting them through theoretical lenses,

and trying to allow suggestive findings to accrete into evidence for productive

approaches. Such a methodology relies as much on the strength of the examples

analyzed as the analysis itself. One measure of such strength is generalizability. If

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LaGuardia and Epsilen are outliers, extreme exemplars, they run the risk of being dismissible as unrealistic templates for ePortfolio project design. At least one other example could help to minimize that risk.

Penn State University places reflection near the heart of its ePortfolio project. The school's ePortfolio Web site has a persistent "Reflect" link in the top navigation bar that leads to a frameset of reflection pages. The link delivers the reader to a page titled, "REFLECT: Providing Insight." A persistent set of links appear in the left navigation bar: "Reflection and Planning, Reflection and Practice, Reflective Writing Steps, Description vs. Reflection." The "Providing Insight" page begins with a definition by comparison: "Artifacts tell what you know or can do. Reflections tell what you think!" The page goes on to explain the value of reflection in both rhetorical and personal terms.

> First, reflection provides the reader of your e-portfolio with a much better understanding of who you are because you share how you feel about or make sense of the experiences you have been involved in. Reflection allows you to analyze and interpret your artifacts for others.
> Second, the reflective process itself, whether you share your e-portfolio with someone else or not, is a constructive way to think about your own growth and development. Reflecting allows you to explore alternatives and consider future plans.

Student authors are being encouraged to rely on the heuristic usefulness of an imagined audience, one that wants to understand who the writer is and how that writer thinks about the included artifacts. But aside from this rhetorical concern, a promise of self-

knowledge is offered. This dual approach should be helpful for students, whether they are currently socially-oriented or introspectively-inclined.

Perhaps more importantly, calling students' attention to the ways in which reflection crosses boundaries between introspection and persuasion provides a useful bridge across the dichotomy between hegemony and infinite regress that I explore in Chapter Two. Reflecting only in response to pressure to confess or to impress may not allow students to consolidate learning in forms that support transfer.[48] Alternatively, reflecting as if no one were reading removes the motivation to articulate insights. The Penn State approach navigates a path that avoids these unproductive extremes. The "Providing Insight" page instructs students, "As you engage in reflective thinking and write these thoughts and save them as a part of your e-portfolio, think about your audience. Who do you want to share your thoughts with? Your audience might be only yourself, a small group, or perhaps anyone interested in who you are!" The self is still an audience, and any potential audience's needs must be considered during composition, including reflective composition.

Penn State's "Reflection and Practice" page (mis-)cites[49] an argument Yancey makes for portfolios in general:

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[48] The "Reflection and Planning" page of the Penn State ePortfolio Web site begins, "The fourth Penn State Principle reads: I will be responsible for my own academic progress and agree to comply with all University policies." After elaborating on this principle and citing the university president's endorsement of it, the page's authors state, "The kind of a student you become depends on how well you use your reflective skills." While I agree with this statement, I'm struck, as a reader of the Web page, by the decision to lead with policy and presidential statements. Reflection is posited as a means toward compliance with bureaucratic regulations. I'm sure different students will react differently to this type of micro-discipline. It is certainly hegemonic in tone.

[49] The citation offered on the Web page points to the right book but the wrong essay within it. It is not in her essay, "General Patterns and the Future" that Yancey talks about these features of portfolios but in her essay, "Digitized Student Portfolios." The quoted material appears on page 19 of Cambridge et al's *Electronic Portfolios*.

A well-done reflective piece will tell the story of your learning; it gives

you a platform "for explaining what [you] did and did not learn, for

assessing [your] own strengths and weaknesses as learners, for evaluating

[your] products and performances, for showing how that learning connects

with other kinds of learning (in the classroom and without), and for using

the review of the past to think about paths for future learning." (Yancey,

2001) This is not necessarily an easy thing to do.

It certainly isn't. But it's certainly worth attempting, because the world doesn't present

us with a series of challenges that match up perfectly with what we've encountered

before. We can't hug closely to experience without eventually encountering a situation in

which we must construct and cross a bridge from what we've learned to what we need to

do now. Yancey's string of affordances could almost be read as a series of chronological

steps (looping recursively, of course), except that I would place the third step (evaluating

products and performances) at the beginning of the sequence. That would encourage an

evidence-based assessment of what was learned, strengths and weaknesses, etc.

The statement that follows the above passage on the Penn State Web site helps

draw the connection between the quoted statement by Yancey and another statement she

makes in the same book from which the first is drawn. The Web site states, "You should

be an active participant in not only what it is you are learning, but also HOW you learn

and WHY!" In this context, Yancey's statement that "student electronic portfolios rest

on the assumption that *the engaged learner, one who records and interprets and*

evaluates his or her own learning, is the best learner" ("General" 83, emphasis in

original) does not seem quite as hyperbolic as it otherwise might. By itself, that

statement calls for a leap of faith. But in juxtaposition with the quoted sequence of Yancey's, an internal logic becomes evident. Recording, interpreting, and evaluating one's own learning makes one a good learner because it supports the next steps: connecting to other types of learning and to future learning opportunities. This is the core of Dewey's philosophy of education, based as it is on a structure of reflective thinking that allows for "reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience" (*Democracy* 89-90).

The PSU "Reflection and Practice" page offers a routine to help develop a reflective habit of mind. Arguing, "It takes commitment," the page presents four steps embedded within that commitment:

1. **Establish Goals** for yourself,
2. **Monitor your progress** on these goals,
3. **Question things** as they happen,
4. **Assess whether or not what you are doing is working** and then rework your goals if necessary.

This set of cognitive actions is supplemented with a set of heuristic questions: "What are your academic goals? Do you have personal goals? What you are planning to do when you graduate? What is your intended major? Why have you set these goals? How are they important to you?" As we saw with the examples from LaGuardia Community College, questions like these encourage writers to integrate aspects of their lives within the nexus of the ePortfolio. The reasons and values behind goals are often rooted deep in family histories and coming-of-age narratives that might otherwise appear to students as entirely unconnected to academic concerns.

The "Reflective Writing Steps" page delivers on the link's implied promise of an instructional heuristic. Students are instructed to write about a specific incident, tell what happened, what it might mean, and what it might mean for the future. To help get started, eight academically-oriented topoi are presented, such as written assessments received of one's work, the fit of a particular course with one's major, and applicability of what was learned in a specific course. A set of highly directive style tips includes using "an honest, upbeat, sincere tone,"[50] short paragraphs, and topic sentences. Finally, the page offers a valuable reminder about specificity.

> It is important for you to **rely on specifics**, not generalities when assessing the value of an experience and what you have learned from it. Avoid generic unsupported conclusions such as "The internship was a positive experience for me and it was very beneficial too." Instead, present **evidence** (which is already present in your portfolio, after all) to prove your claims-provide *examples*, *scenarios*, *lists*, *names*, *dates*, *emotions*, *labels*, *terminology*. Do not skimp on detail here! (emphasis in original)

The parenthetical reminder that the evidence to support specific claims is "already present in your portfolio" implies a composition process that may not be followed by all students (or even most). But in doing so, perhaps it encourages students to try out such a process of collecting artifacts and then reflecting on their significance.

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[50] What if a writer is honestly and sincerely not feeling upbeat about the reflected-upon experience? The implication appears to be that such an experience should not be included. One way to look at this bit of stylistic advice supports O'Neill's fears about the subject-constituting nature of portfolios, particularly the reflective aspects of them. From this perspective, the insistence on optimism can be seen as potentially stultifying. But another reading of the advice finds a welcome reminder that an ePortfolio composed for school and/or as a résumé is not the electronic equivalent of a visit to the psychologist. The audience is not a non-judgmental sounding board; evaluation of past performance and assessment of future potential are real elements of the rhetorical situation.

Finally, the Penn State University Web page on "Description vs. Reflection" offers excellent comparative examples from student ePortfolios and a rubric that helps call attention back to the reader's experience of the ePortfolio. The first example compares three linking strategies. A link to "MISBD 430: Systems Analysis" is followed by this evaluation: "Without a description, this project link leaves the reader with no clue as to what is coming next!" A "better" option adds a one-sentence description of the specific project being linked to as an annotation immediately below the link. Students are urged, "But don't let it stop there. Why did you include this in your e-portfolio?" "Better yet" is an annotation that includes a sentence reflecting on an abstraction learned through the experience of working on the linked-to project. This three-part example makes the distinction between types of links apparent and available for students to use as a model. A pair of narratives, one descriptive, one reflective, follows the link example. Finally, a self-assessment rubric is presented. A table with column headers "Exemplary," "Satisfactory," and "Lacking" and row labels "about a process," "about a context," and "about the future" contains quotes in each cell that might come from a reader, such as "I can see exactly how you came to your conclusion" and "I have no idea why you find this relevant!" A student who works recursively between this Web page and her own ePortfolio should produce meaningful links annotated with reflective commentary. The emphasis is on the reader's experience, but the composing of links thus annotated entails (over and opposed to allows or encourages) a writer making reflective abstractions and connections and articulating them in a way that may be more meaningful for the writer-reader than the intended reader because it supports consolidation and transfer of learning.

So does it? We might expect that Penn State's gallery of sample student ePortfolios would be cherry-picked for their ability to demonstrate these theoretically beneficial compositional moves. Penn State University provides screen shots of student ePortfolios with evaluative metacommentary, as opposed to the complete access that LaGuardia Community College provides. But because the university puts so much emphasis on the reflective aspect of ePortfolios, it's reasonable to expect that instances of reflection will be made salient enough for our analytical purposes.

Toni McLaughlin's ePortfolio

Toni McLaughlin, a landscape contracting major, writes, "Building my eportfolio had been great in allowing me to easily share my professional and academic experiences with potential employers." She has persistent navigation links to "Home," "Academic Work," "Professional Experience," and "Personal Profile." The gallery commentator praises her color choices and use of thumbnail images of her design projects that expand upon clicking. No evidence is provided that McLaughlin includes reflective comments on her projects. But we are told that "Toni adds a bit of reflective commentary which provides a perspective for her interests as well as her goals." This is followed by a screen shot of her "Professional Experience" page, on which McLaughlin writes,

> Though my grandma had always hoped that I would become a nurse, I was always more interested in the arts. Over the years, I've considered many different career possibilities, including graphic design, interior design, culinary arts, and landscape architecture. At one point, I even considered pursuing a career in forensics, but then I realized it wasn't quite my calling.

She doesn't tell us why she was always more interested in the arts or what caused her to realize that forensics wasn't quite her calling. There is reflection here, but it is not connected to evidence included in the portfolio. In fact, it's a surprising bit of text considering its placement on a page titled "Professional Experience." The encouragement to integrate aspects of her life appears to have produced a surprising reflectiveness, but the accompanying encouragements toward specificity and connecting to evidence do not appear to have produced immediate results in this sample ePortfolio.

Daniel Shaffer's ePortfolio

Daniel Shaffer, a marketing, psychology, and sociology triple major at Penn State, is quoted on the university's ePortfolio Web site as saying this about his ePortfolio:

> With the intention of creating my own unique 'brand image' for future job opportunities and graduate school, my web portfolio has offered me the chance to not only differentiate myself from other business students, but more importantly, has given me the opportunity to develop my technological skills as an online marketer.

This is a student embracing the business end of ePortfolios. He appears to view the entire project as an opportunity to develop and display his marketing skills. And this focus does not appear to preclude him from embedding reflective comments along the way. On his "Education: Sample Coursework" page, Shaffer provides annotated links to three projects. Before each actual link, a paragraph describes the project and what he learned from it. Notably, each paragraph begins with a short abstraction in orange font (the rest of the text is in white on a black background): "Collaborating within a Small Group," "Redefining a Business," "Capturing Attention." These annotation labels link the

particular projects synecdochically to broad categories of marketing practice. They indicate that Shaffer doesn't view the projects as representative of his work in college but as representative of his marketing expertise.

As notable as this ability to generalize from particular projects is, Shaffer's ability to focus on the specific learning outcomes from each project serves to strengthen the impression that he can oscillate from general to specific in order to make his learning available to himself for future applications. Reflecting on a project in which he redesigned a floor layout, Shaffer writes, "From this project, I not only earned the highest grade in the class but more importantly learned the important aspects of human factor psychology in creating a physical space that is more adaptable to the natural movements of store customers." In one sense, he is composing elements of a résumé, displaying sophisticated rhetorical awareness that a potential employer will be more impressed by his ability to articulate what he learned from a project than by the grade he earned on it. But in the process of doing so, he's also consolidating what he learned by distilling the essential lesson into a single sentence. Shaffer employs the link annotation strategy labeled by the Penn State ePortfolio Web site's "Description vs. Reflection" page as "better yet" to reflect on artifacts in a way that is rhetorically effective and personally useful.

Matt Zielinski's ePortfolio

Matt Zielinski's ePortfolio has a teaching portfolio nested within it. This allows Zielinski to integrate aspects of his identity in order to, as he puts it, "shine light on my past while guiding me towards my future at the same time." The opening page is dominated by a photo of Zielinski with a nittany lion mascot, above which is written,

"Lifelong Learner, Lifelong Educator, Lifelong Server." These are replicated below as links, along with "Resume" and "Making Connections" (presumably a final reflective essay). Following the "Lifelong Educator" link to the teaching portfolio, we reach Zielinski's reflection on his "Weekly Journals" artifact. Here he writes, "I believe that these journals are the most valuable artifact in my Teaching Portfolio. I feel that these truly show my teaching experiences and how I have grow to think like a teacher." He proceeds to link the journals to specific points within the Penn State Secondary School Teacher Education Conceptual Framework. His reflection includes the evaluative and connective aspects advocated by Yancey and cited on the Penn State ePortfolio Web site.

I'm not trying to imply a causal connection between the instructions for reflection given on the university's Web site and the examples of reflection that show up in these sample student ePortfolios. McLaughlin's ePortfolio would belie any such attempt. The instructions may have helped some students, such as Shaffer and Zielinski, to write link annotations that call out, with specificity, the meaningfulness of the linked-to artifacts. But as McLaughlin's ePortfolio demonstrates, not all students were willing or able to take full advantage of those instructions.

Nonetheless, the Penn State instructions for reflection are the most thorough and accessible I've read. The examples of link annotations and the self-evaluation rubric provide students with heuristics for thinking about the usefulness of reflective writing within their ePortfolios. Focusing these heuristics on artifact links should help students to become critical hyperreaders of their own links and of those written by others. The evidence of such developing hyperliteracy shows up in their ePortfolios. As we would expect, it will show up unevenly. But in a way, this could be helpful for educators

looking to leverage the affordances of digital technology to support learning transfer. Just as the "OK, better, better yet" three-part link annotation example on Penn State's Web site can call students' attention to distinctions between types of annotations and the usefulness of reflection, distinguishing between quality and type of reflection in sample student ePortfolios can help students notice these distinctions in their own compositions.

Looking for Proof

The many heuristic questions provided on LaGuardia Community College's ePortfolio Web site may not guarantee reflective thinking and writing that will help students see connections between personal, educational, and professional experiences. But they seem to correlate with more reflection than that which appears in ePortfolios composed in the Epsilen Environment. The latter system, developed and employed at Indiana University-Purdue University Indianapolis, may not interfere with writers' reflective habits, but it does not intentionally foster them with heuristic questions or directive instruction on reflective writing.

Taken together, these three ePortfolio projects do not necessarily prove anything about how to effectively support reflective thinking and writing, let alone about the long-term value of such thinking and writing. LaGuardia Community College's final report to the Inter/National Coalition for Electronic Portfolio Research (I/NCEPR) points to mixed findings. Its fourth finding is that "LaGuardia's experience demonstrates that ePortfolio helps high risk students engage more deeply and effectively in the learning process, leading to measurable improvement in student learning outcomes" (3). The evidence is found in a comparison of Community College Survey of Student Engagement (CCSSE) data gathered from students who enrolled in ePortfolio and non-ePortfolio composing

classes. The comparison found significant gains for ePortfolio students on questions drawn from the Academic Challenge and Active Learning areas of the CCSSE. Looking at institutional data, LaGuardia found a pass rate increase of over 5% in ePortfolio classes (4). Recall Yancey's statement that "student electronic portfolios rest on the assumption that *the engaged learner, one who records and interprets and evaluates his or her own learning, is the best learner*" ("General" 83, emphasis in original). LaGuardia's findings would seem to add support to this assumption.

But where does reflection fit in? The LaGuardia final report argues, "For our portfolios to yield the greatest potential, we need to help students and faculty understand reflection as a central practice" (6). And yet, "We have found overall implementation of reflection to be uneven, however. Some student reflections are superficial. Some faculty have reported difficulty figuring out how to integrate reflection into their courses" (6). If the composition of ePortfolios correlates with increased student engagement and course completion rates, but reflection is "uneven," perhaps reflection isn't the key after all.

Northern Illinois University's final report to the I/NCEPR, reporting on a study of teachers' analytic ratings of students' ePortfolios, finds that although there is a positive correlation between reflection scores and evidence scores, "there appears to be little evidence to suggest that reflection about specific traits correlates either to overall quality of reflection, or to overall quality of writing" (2). This would seem to support the conclusion that ePortfolios' effectiveness is unrelated to reflection. But the NIU report points to another possibility.

> Initial qualitative analysis of the eportfolios by the raters indicates a
> neutral relationship between the use of reflection and students writing;

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better writers also tended to be better reflectors overall. Raters indicated

that many students appeared to be more aware of their learning and

writing processes, but that students did not therefore seem to write any

"better" because of that awareness, at least in the one semester time frame

being measured. Longer term effects of the relationship between

reflection and learning were not a component of this project. (2-3)

I would argue that it's unrealistic to assume the benefits of such reflective awareness

would manifest within a one semester time frame. Rodgers points out that "Dewey

reminds us that reflection is a complex, rigorous, intellectual, and emotional enterprise

that takes time to do well" (844). Nonetheless, there appears to be evidence from the

NIU study that reflective awareness can manifest quite quickly, since "better writers also

tended to be better reflectors overall." However, the payoff from the development of

reflective habits of mind, whether we think in terms of Schön's notion of reflective

transfer or Perkins and Salomon's high road transfer, is in the adaptation of knowledge

for application to unfamiliar situations. Perkins and Salomon theorize the hugging and

bridging mechanisms that support such transfer, whereas Schacter's notion of elaborative

encoding provides a more scientific explanation of the brain-based mechanisms involved.

Either way, the point is to make connections—between past, present, and future, and

between various aspects of our identities and experiences. Discussing Dewey's linkage

of reflective thinking and community, Richard Prawat insists, "Language is key. It

allows the individual to transform his or her own inchoate understanding into a form that

is more conscious and rational, thus serving the self. It also allows the individual to share

insight or understanding with others, thus serving the community" (qtd. in Rodgers 857).

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And recall Schön's warning that when "free of the need to make our ideas explicit to someone else, we are less likely to make them explicit to ourselves" (*Educating* 300). It's the articulation of connections, of understandings, that elaborately encodes the engrams for the self and builds the bridges for the self and for others. I see in this a bridge between reflection and engagement, because one cannot reflect effectively without being engaged, and the connections articulated through reflection must lead to an increased perception of engagement with the experiences being connected.

Explaining the increase in engagement relative to ePortfolio composition at LaGuardia then becomes a question of seeing the glass half empty or half full. If reflection is uneven at LaGuardia, it could mean that reflection isn't the driving force behind the ePortfolio project's success; conversely, it could mean that more intentional instruction in and support of reflection would lead to even greater success in student engagement and learning outcomes. My conclusion is an attempt to transfer what I've learned through the exploration in this chapter and the previous ones to the task of describing what forms such intentional instruction and support might productively take.

CHAPTER SIX

CONCLUSION

> How to think reflectively, after all, is not a bandwagon
> issue. It is not a fad whose time has come and gone but
> perhaps the most essential piece of what makes us human,
> of what makes us learners.
>
> — Carol Rodgers, "Defining Reflection," 864

Having explored the literature on reflection, ePortfolios, and hyperlinks, and

having analyzed ten samples of ePortfolios from three very different institutional projects

at three very different institutions, it's now appropriate to reflect on what has been

learned in order to make available for transfer that learning. Four chapters of theoretical

exploration and textual analysis must be synthesized in order to be consolidated. But this

chapter is not only about review. Such backward-reaching transfer is only one aspect of

useful consolidation. I will also be reaching forward to envision future scenarios of

pedagogical application and necessary remaining research.

Working from Dewey's definition of education, Rodgers emphasizes the work

involved in undertaking the reflective thinking dictated by that definition.

> Reconstructing or reorganizing experience means more than just taking
>
> swipes at the obvious elements of an experience, the sculptor hacking
>
> away at a protrusion on the marble or wood. It means spending enough
>
> time with the data of an experience, with the texture and density and grain
>
> of it, so that it can emerge in all its complexity. (854)

This conclusion is in one sense an exercise in spending time with the data amassed in this

dissertation in order to let meanings drawn from it emerge in all of their complexity.

More practically, it's the textual space in which generative statements such as this one by Rodgers can be explicitly connected to curricular and classroom applications. Following Perkins and Salomon's advice that teachers "can help students develop skills of learning for transfer" by acquainting them with "the problem of transfer in itself and the tactics of bridging and hugging" (30), I suggest teaching students Dewey's definition of education and then directly connecting Rodgers' sculpting metaphor to the task of reflective writing in ePortfolios.

Between Reconstructing and Reorganizing

However, as I point out in the introduction to this dissertation, there is a small but extremely important typo in Rodgers' transcription of Dewey's definition of education that must at last be attended to. Recall that Dewey defines education as "that reconstruction or reorganization of experience which adds to the meaning of experience, and which increases ability to direct the course of subsequent experience" (*Democracy* 89-90). And recall that Rodgers defines reflection as "that process of 'reconstruction and reorganization of experience which adds to the meaning of experience'" (848). The "or" between "reconstruction" and "reorganization" morphs into an "and" in Rodgers' version. If we want to dismiss this as an immaterial typo, we certainly could. We could say that Dewey was using the terms synonymously, and that the "or" signifies interchangeability. In a related way, we could say that to reconstruct experiences is always, to some extent, to reorganize them since, as Schacter contends, "When we remember, we complete a pattern with the best match available in memory; we do not shine a spotlight on a stored picture" (71). There's bound to be some reorganization involved, some shuffling of the pieces as we try to reconstruct the pattern. To accept

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these readings would not mean being particularly generous to Rodgers, but I want to withhold forgiveness for a moment, not to punish her but to reaffirm a distinction between reconstructing and reorganizing. They are not, after all, the same word. And holding onto the distinction, and pointing it out to our students, is worth the effort.

One way to tease out that distinction is to map the terms onto Perkins and Salomon's techniques for promoting transfer: "hugging" and "bridging." Reconstructing is an attempt at hugging closely, in the reconstruction, to an idea of the original. It's "completing a pattern with the best match available," as Schacter would have it (71). There's an implied imperative toward neutrality, toward fidelity with the original. Asking students to reconstruct, in this sense of the term, is like asking them to do the first step in a summarize and respond assignment. Reorganizing is the second step. It's about building bridges to other possibilities. It's creative in intent, rather than replicative.

Recall the Penn State University ePortfolio Web site's page on "Description vs. Reflection." It compares three versions of a link to a project from a particular course: the name of the course; a "better" version that adds a one sentence annotation describing the project; and a "better yet" version that adds a sentence to that annotation in which the author abstracts what was learned from the project or what it says about the learner. The distinction between "better" and "better yet" is the distinction between "hugging" and "bridging," between "reconstructing" and "reorganizing." And the point isn't merely that the reader will have a better sense of why the project is being linked to (although being concerned with such things can certainly be heuristic for the writer); the point is that explicitly abstracting something learned from the experience makes that learning available for the abstractor to reorganize in the process of forward-reaching high road

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transfer. Furthermore, reorganizing learning experiences in this way and attaching abstractions to them enacts the elaborative encoding that makes the abstractions more retrievable in future challenging situations, when the process of backward-reaching high road transfer will demand seeing aspects of the new challenge as addressable by the abstractions learned in the past.

If reorganizing is the aspect of reflection that more apparently facilitates learning transfer, reconstructing remains the aspect that provides the foundation for that transfer. A summary and response assignment includes both components for good reason. Just as writing a summary alone doesn't push a learner to fashion something new out of the information by building connections to other information or experience, writing a response alone doesn't push the learner to build such connections to the material at hand. Taking off from the most ephemeral of tangents to say what one already had to say before encountering the new material does not demonstrate learning of the material, nor does it build the connections that allow learning transfer. Reconstructing, though perhaps less glamorous, must nonetheless play a role in the reflective process.

One excellent model for teaching useful reconstruction is discussed in Chapter Two: Faigley, Cherry, Jolliffe, and Skinner's process log developmental scale.   The scale includes general-intentional responses (e.g., "I wanted to compose the best ePortfolio I possibly could"), general-strategy responses (e.g., "I took advantage of the technical support offered in the computer lab"), and task-specific-strategy responses (e.g., "I used the blank-target setting for all external links because although I want readers to have access to those other aspects of my life, I want to keep them in my ePortfolio, not send them off to someone else's site"). Task-specific-strategy responses are more likely

to support reflective transfer through elaborative encoding, so a prompt for reflection on the composition of an ePortfolio should explain the difference between these types of reflection and indicate that the preferred responses are those of the task-specific-strategy type.

Hegemony Revisited

It's one thing to provide examples of different types of reflection, in the way that Penn State does with the three versions of hyperlink annotations or in the way I'm suggesting with the explicit introduction of the Faigley, Cherry, Jolliffe, and Skinner process log developmental scale. But it's another thing entirely to tell students which type of response will be rewarded, as Penn State does by saying that a link accompanied by a descriptive annotation is "better" than one that isn't and an annotation that adds a statement about why the linked-to material is being linked to is "better yet," or as I suggest telling students which of the reflective statement types in the process log developmental scale are the preferred responses. This is arguably a hegemonic form of education because it is an attempt to secure students' consent to think about their own work in ways that we want them to think about it, which are not necessarily the ways they would choose on their own.

Throughout this dissertation, I use Dewey's philosophy of education as a frame for my explorations and analysis. And I might be charged with cherrypicking from his writings if I weren't willing to bring in ideas of his that challenge my own. In *Democracy and Education*, I run up against a serious challenge on this issue of

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hegemony and institutionally-generated[51] criteria for reflection. In order to give the challenge a fair hearing, I feel I must present Dewey's words in context. He writes,

> Unless we set up some definite criterion representing the ideal end by which to judge whether a given attitude or act is approximating or moving away, our sole alternative is to withdraw all influences of the environment lest they interfere with proper development. Since that is not practicable, a working substitute is set up. Usually, of course, this is some idea which an adult would like to have a child acquire. Consequently, by "suggestive questioning" or some other pedagogical device, the teacher proceeds to "draw out" from the pupil what is desired. If what is desired is obtained, that is evidence that the child is unfolding properly. But as the pupil generally has no initiative of his own in this direction, the result is a random groping after what is wanted, and the formation of habits of dependence upon the cues furnished by others. Just because such methods simulate a true principle and claim to have its sanction they may do more harm than would outright "telling," where, at least, it remains with the child how much will stick. (*Democracy* 66-67)

I could attempt to dodge the challenge by pointing out that he is obviously talking about students who are much younger than college students. I don't think of my students as children (any more than I think of myself as an adult). But I don't think his argument rests entirely on the idea that very young students are more vulnerable to hegemonic

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[51] Here I am recognizing that as often as I may wish to imagine myself as an agency-possessing subject, in my students' eyes and in effect, I am an embodiment of whatever educational institution I find myself working for. Therefore, when I establish criteria for reflection, these are by default institutionally-generated criteria for reflection.

thought control than older students are. When Dewey says that "the pupil generally has no initiative of his own in this direction," if we don't hear disdain, we probably hear condescension. And yet, because reflective thinking is a challenging cognitive process, made even more so by the fact that we don't provide students with enough opportunities to practice it, many students, including those at the college level, do sometimes display what appears to be a lack of initiative to reflect meaningfully on their own work.

I would argue that, at least for many students, such an apparent lack of initiative is a sign of not knowing *how* to reflect meaningfully, rather than a sign of some weakness of character. I believe it's my job to teach students how to reflect, by providing prompts that ask heuristic questions and that push students to make connections by telling them that they will be rewarded for doing so. But in doing that pushing, am I supporting the "formation of habits of dependence upon the cues furnished by others"? Perhaps I am. I would like to think that I'm offering students models of reflection that they can internalize, so that they will not be dependent upon cues for reflection furnished by others. I hope I'm teaching them how to have, as Schön calls it, "a reflective conversation with the situation" (*Reflective* 242). I hold this hope in the spirit of Quintilian's rhetorical question, "For what object have we in teaching them, but that they may not always require to be taught?" (109). Of course, I may be deluding myself. Maybe I'll come up with a clever design for longitudinal research into students' abilities to recognize, long after their interactions with my prompts for reflection, elements of life situations that call for reflection. I'm afraid though that there would be far too many variables that I wouldn't be able to control for, and even if I could, such control would likely reduce the usefulness of the study by artificially minimizing the complexities of

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life. Perhaps in decades to come, I'll run into former students who will swell my heart with stories of reconstructing and reorganizing experiences, just like we did all those years ago, in ways that enabled them to take what they had learned and apply it to unfamiliar situations productively. Now that would be welcome longitudinal data.

In the meantime, I may just have to hope for the best on the issue of unintentionally forming habits of dependence. But returning to the specific issue of hegemony, Dewey seems very concerned about a situation in which a teacher induces students to articulate their development in terms provided by the teacher. There's a specter of thought control haunting his assertion that such methods "may do more harm than would outright 'telling,' where, at least, it remains with the child how much will stick" (*Democracy* 67). But, as I've argued above, some (most?) students need some scaffolding upon which to practice reflection. In Chapter Two, I entertain a possible solution to this problem: co-constructed criteria for evaluation of reflective writing. Recall Hilgers, Hussey, and Stitt-Bergh's assertion that

> if students help define evaluation criteria when an assignment is made,
> they will probably begin to use the terminology and ideas from those
> discussions. […] Through training and practice, students will gradually
> internalize criteria that they can apply themselves, based on the
> requirements of the writing situation. (18)

And recall that Smith points out, "The changes they notice are often modeled on class goals; they use my comments as well as class discussion to form their criteria, which suggests how contextualized self-assessments are" (133). From these observations I conclude that the notion that student-generated criteria are somehow outside of

hegemonic power structures is mistaken. Only working from an idealized concept of individuality could we imagine that students could generate meaningful self-evaluative criteria in the complete absence of social interaction. And such an ideal contradicts Dewey's emphasis on the social aspect of education,[52] which "is general, in the degree in which it takes account of social relationships" (*Democracy* 78). I recognize the problem of a power differential between teacher and student; but that differential is a real aspect of the social relationships obtaining within institutions of education. We can and should involve students in the co-construction of evaluative criteria, including that which could be used for reflective self-evaluation. But we shouldn't delude ourselves into thinking that doing so absolves us of participation in hegemonic structures.

The Question of Motivation

I argue in Chapter Two that Gramsci's notion of hegemony does not imply a necessarily negative connotation to the word. But if that's the case, then how do we work toward positive action within hegemonic structures? Dewey's process of reflective thinking provides a possible answer. Arguing, "Mere facts or data are dead, as far as mind is concerned, unless they are used to suggest and test some idea, some way out of a difficulty" (*How We Think* 106), Dewey posits a problem-solving, scientific approach to reflection. The five phases or aspects of the process are suggestion, intellectualization to a problem, hypothesis generation, hypothesis elaboration, and hypothesis testing (*How We Think* 107). The process is prompted by a sort of cognitive dissonance and provides a method for resolving that dissonance. The five phase process is bracketed by a "perplexed, troubled, or confused situation at the beginning and a cleared-up, unified,

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[52] Dewey's emphasis on the social is not limited to education. He writes about "the fact that all human experience is ultimately social: that it involves contact and communication" (*Experience* 32).

resolved situation at the close" (*How We Think* 106). It is this mental discomfort that provides the motivation to do the challenging work of reflective thinking. According to Dewey, "Demand for the solution of a perplexity is the steadying and guiding factor in the entire process of reflection" (*How We Think* 14). One way then to motivate students to reflect, and to help them develop the habit of doing so usefully, is to work with them to identify meaningful problems.

To be sure, coercing students into believing that our problems are their problems could be viewed as hegemonic pedagogy. But if students do not perceive the problems as their own, they will not be meaningful problems, and their motivational energy will not manifest in a felt perplexity that drives engagement with the reflective process. This line of thinking lends support to the practice of developing ePortfolio projects that explicitly encourage student composers to articulate their educational and career goals. When Penn State University's ePortfolio Web site offers a routine to help develop a reflective habit of mind, it blends Dewey's hypothesis formulation and testing model with a goal-oriented one:

1. **Establish Goals** for yourself,

2. **Monitor your progress** on these goals,

3. **Question things** as they happen,

4. **Assess whether or not what you are doing is working** and then rework your goals if necessary.

The university is providing the cues for reflection, setting up the structure of the problem; but they are the student composer's goals, so it's the student composer's problem.

This line of thinking about the intrinsic motivation of authentic, personally-identified problems also lends support to the practice of developing ePortfolio projects that explicitly encourage student composers to integrate different aspects of their identities. When LaGuardia Community College's ePortfolio Web site promises, "The ePortfolio is a unique tool that will allow you to merge your personal and professional goals, putting your education into a larger context," it's not only goals that are invoked. Our goals are representations of who we want to become; they are identity outlines that we draw for ourselves in hopes of someday filling in with ourselves. And although LaGuardia has explicitly invoked the personal by calling for a merger of personal and professional goals, another well of personally-felt motivation remains, perhaps, untapped: the rhetorical. Recall the instructions on Penn State's site: "As you engage in reflective thinking and write these thoughts and save them as a part of your e-portfolio, think about your audience. Who do you want to share your thoughts with? Your audience might be only yourself, a small group, or perhaps anyone interested in who you are!" This is where the never-entirely-removed evaluative aspect of portfolios is an asset. What more personally-motivating rhetorical problem can there be than that of presenting ourselves to others as we would like to be seen?

Here at last may be the connection that allows reflection to be cited as support for the adoption of an ePortfolio project. Making space for the personal in academic writing isn't anything new. But being able to accommodate links to favorite sites, pictures of meaningful people and places, songs one has recorded, Web sites one has built, blogs one has written, even other ePortfolios one has composed, perhaps gives the ePortfolio more support than I have so far acknowledged. All of this space and functionality provided by

the digital environment allows more easy integration of the aspects of a writer's identity than a paper portfolio ever could. And Dewey's theory of the motivational energy for reflective thinking deriving from an encounter with a personally meaningful problem, a perplexity one feels compelled to resolve, allows me to see the connection between identity integration and reflection differently. It allows me to reorganize my thinking with respect to the student ePortfolios I analyze in Chapter Five.

Seeing the ePortfolio (and Reflection) Again

Early in Chapter Five, I revisit the take-away questions from Chapter Two, and I set aside the final question for discussion in this conclusion: Can we theorize bridges between these unforeseen reflective types and development of rhetorical repertoires? In the discussion following my analysis of Sandra Lorena Rios' ePortfolio in Chapter Five, I pause to mark the emergence of a type of reflection that does not fit under the heading of task-specific-strategy. In the ePortfolio she composed while studying at LaGuardia Community College, Rios' "Classes & Projects" link directs the reader to an alternative portal to the projects and includes reflective commentary about the courses and experiences that generated the linked-to projects. The extra layer of navigation appears to be unprompted, and I tentatively suggest that the author may have been induced to provide this space for reflection, in part, by the prompting for autobiographical information that takes most obvious form in an "About Me" page in the ePortfolio template. When Rios writes, "Imagine me, a student, teaching the teachers!" she is asking readers to join her in reflecting on the expansion of her identity. It's a powerful eruption of a reflective response type that does not fit neatly within the categories of Faigley, Cherry, Jolliffe, and Skinner's process log developmental scale: general-

intentional, general-strategy, or task-specific-strategy. I would label it identity-integrative reflection.

Identity-integrative reflection appears to occur in response to the rhetorical problem of presenting ourselves to others as we would like to be seen. Therefore, it could be found in each of the three categories of the process log developmental scale. But it also extends beyond those categories, or perhaps it precedes them. Its subject matter ranges beyond the materials included in and the discursive moves embedded within a composition. Identity-integrative reflection is the epistemological aspect of a rhetorical concern for managing ethos. Therefore, although its subject matter ranges beyond materials included in a composition, it is potentially reactive to those materials. When an ePortfolio template and/or accompanying instructional material prompts a writer to include autobiographical information, it facilitates identity-integrative reflection because it brings aspects of the writer's life into conceptual contact with a self-representational rhetorical problem.

However, it is important to note that there is no evidence that this is a sufficient condition for development of rhetorical repertoires. Nonetheless, some of the necessary conditions have at least been moved into position. Because the writer is encouraged to include in the composition (via hyperlinking) artifacts that represent various aspects of her identity, she is more likely to become aware of the fact that the composition (like any composition!) includes a self-representational dimension. Furthermore, in the case of an ePortfolio, the very connections deployed in the process of including those artifacts–that is, the hyperlinks–themselves become artifacts available for thoughtful study and decision making in the process of arrangement. But as Burbules argues, by virtue of its

profound efficiency, the hyperlink resists calling attention to itself for study. Similarly, the ease with which a composer can embed a .jpg (image) or .mp3 (audio) file could mitigate against taking the time to consider the implications of doing so. Thus, although the motivation for reflection has been made available through the presentation of a meaningful rhetorical problem, application of that motivation to the construction of an explicit, transfer-supporting bridge is not guaranteed. The bridge from identity-integrative reflection to the development of rhetorical repertoires depends upon explicit scaffolding.

Matt Zielinski is clearly concerned with the image of himself being presented by his ePortfolio. Three phrases figure prominently on his welcome page: "Lifelong Learner, Lifelong Educator, Lifelong Server." But at least as prominent is a photo of Zielinski with a nittany lion mascot. What are we to make of this? Does the author want us to know that he's proud to be a student at Penn State University? Was he at some point a mascot himself? Was the photo taken at a community service event in which he participated? He doesn't tell us. He should tell us. We should let him know that we want him to tell us. It would not necessarily be hegemonic, certainly not in any negative sense of the word, if a teacher prompted Zielinski to reflect upon his decision to feature that particular photo of himself so prominently in his ePortfolio.

Ruth Martha employs blank-target links to external Web sites in her ePortfolio. I think she does so intentionally so as to help readers to complete the image of her that she wants them to hold while still holding onto their attention by not losing them to other sites. She never says why she does it. Although giving her the message that a reader might want to know about such things could help motivate her to explicitly reflect on that

design choice, the real benefit of giving such a message is that Martha will be more likely to articulate her thinking *for herself*. If she does so, she will then be in a better position in a future Web design project to analyze the situation to see if the same constraints that led to the blank-target decision in the composition of her LaGuardia Community College ePortfolio obtain. In other words, she will have explicated an abstraction that will facilitate backward-reaching transfer.

I didn't embark on this dissertation in order to construct an indisputable argument in favor of ePortfolios, which is a good thing, because I didn't find the incontrovertible evidence of their beneficial effects on student learning outcomes that might have supported such an argument. I set out instead to interrogate the claims for ePortfolios based on their capacity to support reflective thinking. This entailed looking closely not only at those claims but also at theories of reflection. Having done so, I understand both differently, more complexly, than I did ten months ago. I now believe that helping students to see the ePortfolio as itself a résumé (whether it is being composed in a first-year composition classroom or as a college career record) would help them see it as a meaningful composition and self-representation problem. Encouraging students to integrate the various aspects of their identities in the ePortfolio could give them the extra motivation to reflect, not only on how those aspects are integrated and presented in the ePortfolio, but on how they might be reconstructed and reorganized for integration within their lives.

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