New technological advances, in particular the Internet, can alter the architectural limits that restrict education by providing "lines of flight" outside of traditional structures. For example, students can access a library catalogue using computers in class, rather than actually having to go as a class to the library. In a computer-assisted instruction literature class at Georgia's Dekalb College, spatial limitations were overcome by placing the course syllabus on the World Wide Web, allowing students to work on assignments without the instructor and allowing for the use of numerous on-line supplements. This kind of innovation changes teacher-student relations, fostering a networked learning community that can take place in and out of the classroom. Simple tools like newsgroups and electronic mail can serve as a supplement to the classroom discussion, while more extreme examples of supplemental space are provided by Multi-User Dimensions (MUDs) and Multi-User Dimensions, Object Oriented (MOOs), which allow users to create text-based "spatial" environments that encourage playfulness and a freer exchange of ideas than the traditional classroom. Problems can arise, however, with the time needed to keep students up to speed with the technology and to teach them to sort through enormous amounts of information on the Web. It is also important to realize that while technology may break down some barriers between teachers and students, learning may become nothing more than play and some students may try to take too much control. (HAA)
Humanities On (the) line:
Classrooms, Space, and the Supplement

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In the fall of 1996, Terry O'Banion visited my college as a representative of the League for Innovation in the Community College. He spoke on the architectural limits that restrict education and mentioned four in particular: time, place, efficiency, and role. In part, what I want to address are the ways in which technology can resist, alter, or challenge these architectural limits. I stress can. There's no technological imperative here, nor do I believe that simply adopting technology will initiate a paradigm shift. I also hope to avoid two extremes: I will try to herald neither immanent technotopia nor impending technocratic catastrophe.

Perhaps it is best, however, to start with a bit of history.

I have been teaching Computer Aided Instruction (CAI) classes at DeKalb College in Atlanta since 1992. At first, my experience in a CAI classroom was not too different from the experience of many; my composition class resembled something like "Comp 101 meets keyboarding." That quickly changed for me, however. My threshold moment was sometime in early 1993 when I
began to work on a paper for the Society for the Interdisciplinary Study of Social Imagery (SISSI) conference. I had just begun reading the work of Jean Baudrillard, a thin little book entitled *The Ecstasy of Communication*. I was also just beginning to explore uses for the Internet that went beyond e-mail; most notably, I had stumbled upon online real-time communication by way of an application called a MOO.

Meanwhile, the media had begun its Internet feeding frenzy, generating "virtual" this and "cyber-" that at every turn. On one hand, cultural theorists speculated that we were seeing the emergence of a hyperreal world of simulation. Driven from urban spaces to suburban isolation, the middle class was now becoming modularized. Community was gone for good. At the other extreme a group of "cyber-hippies" proclaimed the emergence of new electronic *agorae*: public spaces of our own creation which would lead to grassroots empowerment and the emergence of a global village.

And there I stood, between McLuhan and Adorno so to speak, faced with what seemed like a rather mundane question: now that the college has networked the CAI lab, how would I bring Internet into my classroom?

* *************** *

All of this brings me back to architectural limits and the
notion of a learning space. Quite literally, the traditional learning space is defined by a spatio-temporal structure: we meet at a definite hour in a definite place. But this space is also defined by lines of force. It is a formal space, one that conforms interactions to specific models of work and identity, what Terry O'Banion calls efficiency and role. Networked technology, however, can alter learning space by providing "lines of flight" outside this traditional structure and form.

My own experience with this sort of change in learning space began rather simply in my first year of using a networked classroom, and it provides a good starting example of the kind of challenges I'm talking about. Without a networked lab, demonstrating our library's online catalog meant packing up our books and bags, trudging over to the library, and gathering around a single terminal, while the teacher (that's me) demonstrated keystrokes. In a networked classroom, trudging occurs electronically. A telnet application links every student's computer to the library, or for that matter, libraries at nearby Georgia State, Georgia Tech, or Emory University. Even in this simple example, the structural limits on our learning space have been altered. The library (any library) has penetrated the classroom walls, or vice versa if you prefer. The walls do not disappear, but they have become more permeable, like an infinite set of doors. Note also, however, that in this altered space, more opportunities arise for the students to learn how to use the
database experientially—first hand—by following along with my demonstration rather than just watching it. We're seeing here our first challenge to formal limits of the classroom as well.

By way of a more elaborate example, I turn to a CAI literature class I taught in the spring of 1996. Once a week, my modern European literature survey class met in the computer lab. The first thing I did for the class was to put the syllabus itself online—note that an online syllabus means the end of the lost syllabus—it's always there. Unlike the paper syllabus that I handed out in class, the online version had numerous supplements, each one a hypermedia link to a networked resource ranging from an electronic version of the text to population maps for major European cities in the nineteenth century. "The supplement" became the model for how technology played a part in the classroom. It also provided the basis for formal challenge to the traditional limits on the learning space. This challenge of the supplement occurred on the very first day.

As it happened, I had to present a paper at a popular culture conference on the first day of class. Instead of cancelling class or having an instructor cover for me, I used the web-based syllabus to generate an assignment that took place within the classroom and beyond its walls. The syllabus had a "button" at the top of the page with rather clear instructions attached to it: "Day 1: Click Here." Far from being busywork,
what the students found when they "clicked" was a basic paradigm that accompanied us throughout the course: that of the supplement.

The first thing that the students encountered when they "clicked" was an explanation of where I was; that small detail will be important in just a moment. After that, I gave them a four-part assignment based on the material on the web-based syllabus and on the World Wide Web itself:

1. Go back to the syllabus and click on the reading for today (NOTE: there are two links for today. I want you to choose the poem "An Essay on Man"). Read through the poem; it provides you with an historical starting point for this course. When you are done, let me know what you think of the poem by writing a paragraph or two about the poem. Click HERE to mail me your response. Your message should go in the large empty box (click in it and begin writing). Remember to include your name.

2. When you are done, spend some time exploring the various links on the hypertext version of the syllabus. You'll note that some links are directly related, others are more tangential. You'll also notice that I'm still adding links. You can help too....

3. Here's how you can help. Choose an author or a key word (or two) and search the WWW for some useful links. If you don't know how to search the web, click HERE for Altavista, a rather decent search engine.

4. Once you find one or two decent links, mail them to me (you'll want to copy or write down the URL—that's the address printed in the box marked "Location." Don't forget to include your name!

In this hard copy rendering of the day 1 assignment, boldfaced words mark hypermedia links either to another site or to an email subroutine. Part one is pretty straightforward: a reading assignment. But note that the text itself is online. With an online text, I can begin discussing literature on the first day of class, even if (as in most cases) a majority of students have
yet to buy their books.\(^7\)

The rest of the assignment is less traditional, and it is here that I see formal challenges beginning to emerge. Step two asks students to \textit{explore} the syllabus: play with the links and experiment. It's the online equivalent of spending the first day of class wandering around the PN, PR, and PS stacks of the library, flipping through texts. But I'm asking more of them too. In parts 3 and 4 I tell them how to \textit{supplement} the syllabus with their own discoveries from the WWW.

Now, nothing's perfect. Only about 1/3 to 1/2 of the class responded in some way to the assignment.\(^8\) Yet even those students who did not manage to complete the assignment had a wealth of opportunities to \textit{explore} the course. There's a lot of learning going on here, even in the absence of a teacher.\(^9\) While I'm certainly not advocating the elimination of teachers, the fact that so much inquiry can occur in the absence of an instructor emphasizes the degree to which networked technology can provide a challenge to the formal limits of a learning space. As in my earlier example of telnetting to the library, networked technology initiates a change in "place" in the classroom. We still meet in a "real" classroom at a specific class time, but now there is a challenge to this structure by way of an online 24-hour supplement. Links from around the world penetrated the classroom, and students were encouraged to travel beyond the walls of the class. In doing so, they encountered the work of
others: from experts at major research institutes to undergraduates in other survey classes.

So with this change in place comes a change in the dynamic between teacher(s) and students. The ultimate goal of the networked syllabus was for it to serve as a collaborative project between students and between teacher and student. This sort of inter-student communication fosters a kind of networked learning community, one that can take place inside and outside of the traditional classroom. In doing so, students taking charge of their class by supplementing the course content with their own research. The lines of communication start to multiply as the work of "beginner" undergraduates mingles with the "expert" links of other networked sources. And all of these things can occur outside of—or perhaps more accurately as a supplement to—the traditional classroom with its traditional limits.

In a similar way, something as simple as informing my students about my conference in Las Vegas can also encourage these sorts of challenges to the formal limits of the classroom. With networked technology, I can augment that challenge by allowing classroom-to-research connections to proliferate. For example, my students can, by following a link or two, "wander" beyond the Virtual Classroom homepage I set up for my CAI class and find themselves at my general home page, with its links to postmodern theory, cyberculture research, and networked literary resources. My more research-oriented pages and my classroom
pages, in other words, are interconnected, and I encourage my students to explore links that lead well beyond the confines of the syllabus. There's a benefit to exploring these paths; it's the same reason that I told my students about the conference in Vegas and then later talked about popular culture in the context of the course. These lines of flight pass through and beyond the limits of the course, but they also show the many paths that intersect our shared learning space. This fluid medium allows for students to "wander" beyond the borders of the class and see how it quite literally links to scholarship, research, and academic discourse. These encounters, these fluid interactions, are at the heart of how networked technology can (and again I stress can) challenge traditional classroom form and structure.

Simple tools like newsgroups and e-mail can also alter learning spaces. My CAI composition classes have their own newsgroups, which serve as a supplement to the classroom discussion. Not every student takes to it, but the point is that the technology has provided a supplemental space--both part of the class and outside of the class at the same time. E-mail can serve the same function. Students have three options: the can email me, they can email another classmate, or they can email the entire class. The medium is once again challenging roles and formal limits by allowing for a non-hierarchical dissemination of information. With both of these tools, subsequent subject headings ("threads") allow spontaneous groupings to form, which
we can then use for collaborative work, or for brainstorming, or for a number of other uses.

More extreme examples of supplemental space exist too. MUDs (Multi-User Dimensions) and MOOs (Multi-user dimensions, Object-Oriented), for example, allow users to create text-based "spatial" environments through descriptions. The result is a sort of "chat room" that functions as an immersive hypertext. I have used MOOs in CAI classes mostly to experiment with the potentials of this space, specifically as a means of generating ideas for future papers. Anyone who has spent any time in these environments will know that this "text-based virtual reality" encourages a playfulness in its users. The first time I used a MOO in class, we started off using our real names; as soon as students figured out how to change their names most of them did. As expected the anonymity opened up some interesting doors:

Door #1: it was a class discussion in which every student had at least one thing to say. The shy and the outspoken were on a level playing field; conversations proliferated, spreading in multiple directions. Which leads to...

Door #2: it was the most scatological class discussion we ever had: plenty of innuendoes, along with flirting, joking, etc. It's clearly a playful space (a point I'll return to in a moment). And...
Door #3: At one point a student asked, "Anyone remember who the teacher is?" I had changed names too, and as a result, there was an ambiguity introduced that is literally impossible in a traditional classroom. I responded with a question that I now ask to you: "Can you imagine what kind of class it would be if the student never knew who was going to be the teacher next?"

A lot of play goes on in a MOO, that's for sure, but there are quite a few channels opened up by that playfulness, quite a few walls coming down. Remember that as a supplemental space, the MOO is online 24 hours a day. As such, it could function as a student union of sorts, and at "commuter colleges" like my own, students could use as many opportunities as possible for informal academic exchange. Note also how play challenges roles: stable identities of teacher and student, who's in the front row, who's less studious, who to take "seriously," etc. All of these challenges draw on the ways in which a MOO can function as an informal place, as opposed to the formal space of the traditional classroom. What's work here? What's play? What is our measure of efficiency? We're on difficult terrain here, but exciting terrain as well.

I promised you that I would not be a technotopian, and I hope I have not come off that way. All of this technology serves its purpose because I have worked hard to conceive of ways to use
it to supplement the traditional classroom. The technology is not driving the classroom. However...it can. There are going to be days when "techno-creep" lures you, just as there are still days when I seem to be spending too much class time getting some students technologically up to speed. It would be the equivalent of having to teach students how to open a book and turn pages before I taught them a poem. So be forewarned: the "Ecstasy of Communication" can be overwhelming.

This can be particularly true with the WWW. Lately I’ve been stressing in my classes the difference between an electronic source and networked hearsay. Not all online information is created equal. With the increase of information, students have to learn better and better sorting skills, or soon they are buried under a mountain of information. And of course let’s remember that providing students with information is not necessarily equal to encouraging them toward knowledge.

Remember also that all of this technology does not necessarily point toward a paradigm shift in learning space. Simply putting students online will not magically create non-hierarchical relations. What goes on in my classroom away from the computers encourages the same sort of interactions, the same shift in classroom dynamics. The technology is only a supplement. The supplement declares itself as something in addition to "central" text; it is not its replacement. As such, the
supplement also declares the incomplete nature of what we're holding at the center, its "essential" lack. In this way I see networked technology as a "constructive disruption" to the traditional classroom.

Finally, there are those who are seriously concerned that some of these borders and walls are in place for a reason. A MOO can be a very chaotic place, for example, and by turning over hierarchical control, some feel that learning soon becomes nothing more than play: shouting kids on the school yard. Note also that some students want more control. Not everyone is going to be comfortable in this non-hierarchical environment. There are some valid concerns here, and I think we need to keep them in mind as we introduce creative disruptions in the traditional classroom. At the same time, I see the importance of introducing these sorts of supplements if we can use these new learning spaces to encourage our students to take responsibility for learning itself--to stress that it is ultimately their classroom. This sort of emphasis requires an effort not just from teachers, but from students as well. They will have to shift along with us if these supplemental spaces are going to succeed as classrooms. We need not fear that humanities are "on the line" when Humanities 101 goes online. Nor do I believe that a Brave New World shimmers on our computer screens. Networked technology, however, does offer us the opportunity to challenge our limits, our teaching strategies, and ultimately, our students.
Notes

1. Baudrillard describes this "world of simulation" as a world of objects in which both original and copy have disappeared, leaving behind only the endless reproduction of an intangible "model." Hyperreality occurs when simulation allows for the production of a "more real than real" reality, one in which the model of the world precedes and predetermines what counts as "reality." See Jean Baudrillard, *Simulation and Simulacra*, (Ann Arbor: U Michigan P, 1994).

2. The "electronic agora" is Howard Rheingold's reinscription of Marshall McLuhan's "global village." Rheingold, whose personal history moves from 60s student radical to 90s virtual community advocate, serves as a convenient spokesperson for some of the more utopian perspectives on networked technology. See Howard Rheingold, *The Virtual Community*, (New York: Addison-Wesley, 1993).

3. My comments on formal and structural space draw tangentially from O'Banion's discussion of architectural limits of the classroom and may not entirely align with his interpretation of the origin of these limits in industrialist America, or his assessment of how to overcome these limits. As this paper was originally presented to members of O'Banion's League for Innovation, the parallel is perhaps of more interest to the original audience than to current readers. For a more complete discussion of O'Banion's views, see Terry O'Banion, *Teaching and Learning in the Community College*, (Washington D.C.: Community College P, 1994).

4. I am borrowing this metaphor from Deleuze and Guattari, who have written at length on the organizational limits inherent in "striated space" as opposed to the lines of flight produced within "smooth space." See Gilles Deleuze and Felix Guattari, *A Thousand Plateaus*, (Minneapolis: U Minnesota P, 1987). For a discussion of smooth and striated space online see my article in *The Texts of Cyberspace* (Bloomington: Indiana UP, forthcoming) entitled "Virtual Topographies."

5. Note that this change in learning space cannot occur in isolation; in other words, it assumes that the college library (or any library for that matter) has made their material available online, and that it is possible to access it from remote terminals. The change that occurs in my classroom learning space takes place given the condition of possibility that other spaces have engaged in the same activity. To put it another way: I am "enmeshing" the classroom in a net-work or web, and by doing
so, I create "lines of communication" that overcome the borderlines of the physical classroom.

6. Except, of course, when the server is down. There's always an excuse to miss an assignment....

7. Electronic texts also provide an affordable way to supplement class material. In many of my classes I find it advantageous to supplement required texts with online material or photocopied printouts of online material. These public domain texts provide an inexpensive way to generate reading packets for classes.

8. Many students had difficulty with the final step: emailing their search results. As web-based technology becomes more and more prevalent, however, I am sure that students will become as familiar with operating a browser as they are operating a telephone.

9. I did ask a colleague to stay in class for the first ten minutes to take role and to help students get to the web-based syllabus. After that, though, students were on their own.

10. These newsgroups can be either open or closed to the public. DeKalb College has decided to limit its access to local domains. Students can read and post to a full range of USENET groups, but outside machines cannot read or post to DeKalb lists.

11. Several MOOs have come into existence specifically for academic reasons. For a positive (and at time idealistic) account of the Netoric project at MediaMOO, see Tari Lin Fanderclai, "Like Magic, Only Real." Wired Women, (Seattle:Seal, 1996), 224-241.

12. Richard Grusin calls this approach the "technological fallacy." For a critical look at the unbridled optimism that accompanies some discussions of education online, see his article entitled, "What is an Electronic Author? Theory and the Technological Fallacy," Virtual Realities and Their Discontents (Baltimore: Johns Hopkins UP, 1996), 39-53.
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