Mapping the Resourcefulness of Sources: A Worknet Pedagogy

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Abstract: Existing pedagogical approaches to research source use commonly frame sources as materials to be incorporated *into* texts. The worknets project presented in this article provides an alternative concerned with slowly tracing associations *along* semantic, bibliographic, affinity-based, and choric aspects of the research source and *across* the contexts from which it was produced. These four sets of associations complement established approaches to source use while also illuminating qualities of a source that draw on network logics to support rhetorical invention and inquiry processes across the disciplines.

> "Writing is one of the activities by which we locate ourselves in the enmeshed systems that make up the social world" (Cooper 373).

Opening: Locating Sources *Along* Systems

In her 1986 essay, The Ecology of Writing, Marilyn Cooper expressed a preference for "an ecological model of writing, whose fundamental tenet is that writing is an activity through which a person is continually engaged with a variety of socially constituted systems" (367). Cooper's articulation of an ecological view was—for Rhetoric and Composition—one of the earliest to appear in what today has become too teeming an arena for any one Burkean parlor to host, much less contain. Numerous scholars and practitioners{1} have adopted, expressed, and extended in sophisticated ways ecological understandings of writing activity systems. While the array of perspectives on writing ecologies over nearly three decades grows ever more vast, much of this work builds upon or in other ways accords with Cooper's ideas that ecological systems are "inherently dynamic" (368), that they spill fortuitously beyond bounded contexts, and that a simple web provides a conceptual metaphor and a visual model sufficient for grasping (and eventually venturing along) the topographies of such systems.

I begin with Cooper's prescient article both because her ideas underpin the logic of the pedagogy and project that I develop in this paper and because I present the project using The Ecology of Writing as a model source. The project responds to a concern for approaches to source-based academic writing that frame sources too reductively as materials to be slotted *into* writing. In a contemporary frame, the project I introduce resonates with Douglas Brent's arguments for rethinking the value of the research paper, where he notes its connective facility for students (i.e., source-based research operating as a way to aid students in realizing linkages across disciplines). Brent writes, "with the writing task in the foreground and the content more in the background, we can spend a great deal of time working students through various phases of getting to know source texts that they will need in order to answer their particular research questions" (48). In addition to helping students get to know source texts, worknets function heuristically from the earliest stages of inquiry, emphasizing how work with sources can operate as rhetorical invention. Research questions are oftentimes instigated by encounters with what others have written. As such, the approach reinforces for writers a generative relationship between coming up with viable research questions and reading exploratorily for dimensions of sources they had not considered before, dimensions that are germane to rethinking researchable questions as the questions morph and take on better defined shapes. Worknets extend this premise into practice, locating students' work with sources not only in middle and late stages of a project's development, such as happens when writers seek and enlist sources only as evidence to support claims (i.e., a supportive approach), but at an earlier juncture, while a project is still somewhat messy, still taking shape (i.e., an inventive approach). The approach offered here is flexible insofar as it remains open to what

constitutes a researchable question. As presented, it is also informed by alternative approaches to research processes, such as the collection and annotation practices Geoffrey Sirc emphasized in "box-logic" and the nomadic, Barthes-influenced "anything whatever" Jeff Rice introduced as an aspect of his 1963 hip-hop machine. Both of these approaches value the juxtaposition of uncanny, striking artifacts—an inventive mélange of song lyrics, photographs, snippets of text. Together these produce uncanny instigations that spark more intense interest in research than do topic-based alternatives.

I call the project *worknets*. Worknets offer researching writers a means of locating and tracing sources *along* and *across* networked activity systems (Spinuzzi). Worknets treat sources as *complexly enmeshed resources* for rhetorical invention and, in effect, as *constellations of activity* whose tracing may prove generative throughout a researching writer's many stages of active inquiry. Sources are suspended among many disparate forces while writers compose; they are rather like tiny knots held in part among a skein of ties that coalesces motives, arguments, references, generalist and disciplinarily-situated vocabularies, sites of production, and space-time coordinates. As such, source-based writing stands to be enriched by adopting an explicitly networked logic when engaging sources.

The word worknets comes from Bruno Latour's *Reassembling the Social,* a book in which he introduces Actor-Network Theory, a methodology developed to trace and account for associations among divergent, oftentimes non-obvious, actors. Latour mentions worknets fleetingly and as a playful inversion of *networks* because worknets place an explicit emphasis on action, whereas networks can appear inert, like static snapshots. Latour writes, "Really, we should say 'work-net' instead of 'network'. It's the work, and the movement, and the flow, and the changes that should be stressed. But now we are stuck with 'network' and everyone thinks we mean the World Wide Web or something like that" (143). By naming the project "worknets," I hope for its network logic to be evident as it foregrounds some of the ways relations among articles, people, things, places, moments, and activities manifest *as* a particular research source, whatever the source may be. With this in mind, the word "worknets" refers to *the specific project* in a teaching context as well as *the networked, associational aspects of a research source* that are traceable and that by tracing can lead researching writers to rhetorical invention and further inquiry. The approach seeks to render a source's associations traceable in such a way that powerfully augments inquiry and related research-based writing processes for students. In effect, the guiding, sustained question in a worknets-based pedagogy is, how is a particular source entangled in an associative web, constituted by both obvious and non-obvious traces? Recognizing a source's associative web enlarges its footprint and makes it knowable as the culmination of constellated activity. Insights stemming from this support inquiry and invention because they demystify the orienting contexts from which the source emerged, rendering more explicitly hints of the behind-the-scenes mess and divergent forces borne out through the source as it takes shape, eventually as a tidy manuscript that circulates and ages.

In the project this paper introduces, I attend to four *worknet phases*, or aspects of sources that, once surfaced, may illuminate promising possibilities for further inquiry: *semantic*, *bibliographic*, *affinity-based*, and *choric*. These four phases are by no means exhaustive, but I have presented them as a scaffolded set, meaning that they build from one to the next, offering a practical schema for attending to highly salient dimensions of a research source. The *semantic* phase examines high frequency and load bearing words and phrases (i.e., vocabulary). The *bibliographic* phase attends to source reference (i.e., citations), noticing both how the sources operate in the article and following-up on selected references list for further discovery work. The *affinity-based* phase dwells on authorship (i.e., professional and intellectual kinship). It looks into who wrote the article, what else they have written, the author's intellectual genealogy (i.e., collaborators and mentors), and the occasion for the source's composition. The *choric* phase inquires into serendipitous and coincidental events occurring at or near (in place and time) the source's development (i.e., generative surrounds). Tracing each of the four phases for one research source involves illustrating the phases and writing an account for each of them that explores how selected associations have materialized and how those ties could be generative for an emerging research project. Each phase is exemplified more fully in the second half of the paper.

For instructors who teach research-based academic writing, worknets stand to strengthen the relationship between reading, invention, and formal, explicit citation. They enlarge and render more vividly apparent the source's contexts, which in turn helps writers realize the differences between casual (or requirement-obliging) citation and source use that is likely to be more rhetorically astute due to greater engagement with the source. Worknets bring sources more fully into view, so writers can make decisions about source use mindful of other possibilities. In this sense, worknets hinge between a specific *project* that applies the tracing of associations for a specific research source and a *pedagogy* or rationale guiding priorities for writing instruction that frames research as cognizance of and participation in networked activity systems.

Worknets respond directly to concerns raised in The Citation Project, an ongoing study of the ways college writers

use sources, and echoed in Alison Head's study of student views of search processes. According to these studies, many students engage only shallowly with sources, and they also tend to be uncertain about techniques for gauging quality of sources and eventually retrieving full sources beyond second-hand references and abstracts more likely to be free-circulating online. Head's study of research writing practices by students in the humanities and social sciences, for instance, reports findings indicating much uncertainty related to search and retrieval (para. 18). She also notes that many students look to professors for guidance, which adds urgency to the matter of how to teach research well. If search, retrieval, and responsible use are not self-evident, they warrant explicit instruction. A similar charge of ownership of and responsibility for this pattern is reiterated at The Citation Project web site: "If instructors know how shallowly students are engaging with their research source—and that is what the Citation Project research reveals—then they know what responsible pedagogy needs to address" (para. 3). In addition to addressing the Citation Project's conclusions about shallow engagement with sources, a worknets-based approach also reinforces the interconnections among sources by making such connections explicit. Mapping connections is likely to influence the ways writers recognize themselves as entering into conversations that pre-exist them, and careful, slow work with sources prepares writers to decide more effectively about how to use sources later as support, whether by direct quotation, paraphrase, or summary. In light of the Citation Project's findings, instructors oftentimes know *what* "responsible pedagogy needs to address," indeed. A worknet pedagogy supplies a *how*.

Worknets as a "Constructive Phase" Pedagogy: Preposition-ing and Wandering Resourcefulness

Cooper's ecological approach responded to timely debates in the 1980s about the most ethical frames through which to think about and teach writing. Her argument acknowledged tensions between her social view and its counterpart, which preferred to understand writers as solitary, as isolated. Instead of seeing particular moments in a writing process as *more* enmeshed ecologically than others, such as an emphasis on delivery or audience might privilege, Cooper suggested that "language and texts are not simply the means by which individuals discover and communicate information, but are essentially social activities, dependent on social structures and processes not only in their interpretive but *also in their constructive phases*" (my emphasis, 366). A worknets-based pedagogy regards Cooper's attention to constructive phases to be a critical distinction worth drawing upon. Accepting and acting upon source use as a constructive phase sees exploratory collection and annotation as vital from the earliest stages of inquiry and invention. Worknets, then, assume writers and sources ought to function as a symbiotic hybrid would, with each dependent upon and acting with the other all along. This adjustment, which finds its theoretical footing in Latour's consideration of hybrids in *We Have Never Been Modern*, calls on us to suspend the convenience of conceptual dichotomies (e.g., writer and source as discrete, separate actors) and to consider them instead as integral and mutually entangled (10). Search and retrieval of sources, therefore, are not only acts of composing but they also are *social* acts: acts that find writers and sources as associatively entangled and implicated in one another (i.e., "writer" is virtually the same as "writer with sources"; "sources" are virtually the same as "sources with writer"). The temporary fusion of identifications must not be mistaken for "social" in the commonplace sense of interpersonal engagement, affability, or conversational palling around. Rather, the idea of hybridity in this context, as a way to reconsider source-based writing as social, requires us to recognize as more thickly interconnected than we are accustomed to noticing a constellation of people, things, and forces of which the writer and source, through writing, are indelibly becoming a part. Immersing into this web, which is akin to noticing it and viewing it as a heuristic fund for invention during constructive phases, helps the writer compose inventively, if exploratorily, and in time to "connect with [whatever may surface as] the relevant idea system" (369).

To tease out this hybridity just a bit further, it will help to provide context related to commonplace prepositions for research-based academic writing and also to address more fully how an ecological conception of the "writer+sources" hybrid presents a social, resourceful alternative pedagogy for composition practitioners. The purposes in elaborating these principles are two-fold: 1) to suggest that commonplace prepositions for naming what students do with sources warrant mindful attention, and 2) to suggest how a worknet-based approach to teaching research writing foregrounds source use as a social, or ecology-building act. That is, writing with sources fashions a web of associations of which one's writing is inseparable as a continuation and an outgrowth.

Prepositioning

Richard Lanham's discussion of the generative oscillation between looking *at* and looking *through* interfaces, whether pages or lit screens or other presentational surfaces, is well-known among his many contributions to rhetorical education. Lanham theorizes this bi-stable condition in *The Electronic Word*, and the artifacts he

analyzes in this case are hypertext and digital interfaces as well as our perspectival relationships to them. Lanham claims a value in differential orientations capable of shifting attention to "frontstage/backstage" in keeping with the logic indicated by each respective preposition in the tandem (72). As an update to Lanham's consideration of at/through and keeping with the context of interfaces, Collin Brooke recently factored in a third preposition, *from*, which adds a more explicit emphasis on networked participation and identification: "With interfaces, it is no longer sufficient to speak simply of an at/through distinction that leaves the position of the viewer, user, or reader unexamined. Just as we look *at* and *through* interfaces, we also look *from* a particular position, and that position is both macro- and microperceptual" (140). With Brooke's contribution, Lanham's bi-stability was revised, updated, and improved upon; in its place, a more network-based account of pluralized conceptions of our interactions as well as a sensible and well-theorized recognition of the ways prepositions produce easy-to-overlook frames for thinking and acting.

In Brooke's update to Lanham's at/through distinction and its more explicit emphasis on networks, I find the exigency for re-evaluating commonplace prepositions applied to source use. Consider the prepositions typically associated with source use and citation in researched academic prose. What are writers commonly urged to do with sources?{2} Which prepositions—think of them as *god prepositions*—have become so freely and frequently invoked in research writing instructional discourse as to appear ubiquitous and universal?

Take an example from Andrea Lunsford's *The Everyday Writer*: "Here are some general guidelines for integrating source materials *into* your writing" (emphasis added, 186). Later in the same section on "Research," under the subheading, "Integrating sources and avoiding plagiarism," Lunsford writes, "Carefully integrate quotations *into* your text so that they flow smoothly and clearly *into* the surrounding sentences" (emphasis added, 187). For the sake of comparison, David Blakesley and Jeffrey Hoogeveen's *The Brief Thomson Handbook* puts it this way: "Signal phrases...introduce and integrate source material *into* writing" (emphasis added, 164). I must be careful to acknowledge that my purpose here is only to provide a couple of illustrative examples by way of sampling, not to introduce a comprehensive study of contemporary handbooks in circulation. That the preposition *into* is easy to locate in a few of the handbooks I happened to have on my office shelf does corroborate a tacit sense many teachers of writing have, that "into" is frequently used to pre-position source materials relative to their landing place in the new document. In fact, when it comes to source use and the orienting terms for what we ask students to do with sources, *into* seems to be the commonest preposition.

Into is predisposed to a centripetal or in-bound pathway. The English language, however, lacks a preposition antithetical to this one; there is no *out-to*, only *from*. And we are all familiar with a framing discourse for research writing that talks about taking materials *from* sources and integrating materials *into* the new composition. Yet, much in the same way Brooke regarded Lanham's at/through pairing as inadequate for expressing the contingent agencies of "viewers, users, and readers" who encounter interfaces, I argue that the preponderance of *from* and *into* prepositions provide a linear but not yet network-based conceptual frame for source use, particularly when we seek to emphasize a source-using-writer hybrid acting throughout all phases, including a constructive phase. A worknets-based pedagogy deliberately complicates the *into*-ward gesture (suggested by this preposition) with an outward-venturing alternative: *along*.

In *Lines: A Brief History*, cultural anthropologist Tim Ingold draws a distinction between the logics of *along* and *across* as these prepositions relate to modes of travel. Although both prepositions (and the dispositions implied by each) convene outward-bound conceptions of movement, acts of traveling *across*, which Ingold equates with transport, imply an itinerate route, or, that is, a route whose ultimate destination is pre-determined: "[T]ransport is destination oriented. It is not so much a development along a way of life as a carrying across, from location to location, of people and goods in such a way as to leave their basic natures unaffected" (77). To provide a counterpoint, Ingold explains how particular cultures, such as the Inuit living in Arctic regions, are exemplars of an along-oriented mode of path-making, for "*as soon as a person moves he becomes a line*" (emphasis in original, 75). Relatedly, the writer+source hybrid becomes a mesh of lines, threaded along and building toward aggregate pathways or channels of inquiry. This is a slightly different way of thinking about source use than the from/into prepositions usually make available to writers, but the preference I've explained here for an along/across alternative does not need to eclipse more conventional approaches to source use. Rather, the prepositions along and across provide different ways to think about how writers can way-find with sources at all phases of composition, including the constructive phase.

Making Sources Resourceful, or Writing Along "Wiggly Paths"

Sources become more fully visible as ecologically enmeshed *resources* when we begin to think in terms of the prepositional alternatives sketched above. An *along* manner or attitude, drawing upon Ingold's study of lines,

foregrounds the participatory sociability of source use—the webs writers actively build and ask readers to traverse with them—more than the from/into pairing does. From/into connotes slotting; along/across, on the other hand, suggest radial continuity, a kind of carrying-on. I want writers to realize how this along/across framework opens sources to rhetorical invention because it yields multiple possibilities for connection and exploration. The along/across spectrum offers centrifugal, or outward-moving, alternatives to its dead-endist, lift-and-load counterpart, from/into.

As such, the notion of resourcefulness—or using everything available, as much as possible—relates to I.A. Richards' discussion of the wandering resourcefulness of words in "Speculative Instruments." Countering structuralist reductions of the relation between words and meanings, Richards seeks a systematic approach to the problem of meaning that allows for shifting connotations:

> All these [central intellectual] words wander in many directions in this figurative space of meaning. But they wander systematically, as do other wanderers, the Planets. By fixing a limited number of positions, meanings, for them, we may help ourselves to plot their courses. But we should not persuade ourselves that they must be at one or other of these marked points. The laws of their motions are what we need to know: their dependence upon the positions of the other words that should be taken into account with them. (38)

The constellatory metaphor brings systematic wandering to bear on "what we need to know" about words when using them. For words and their multiple valences, Richards introduces a conceptual frame—the paths of planets —to explain shifting between fixed and emerging relations. Because sources depend upon small semantic networks, Richards' distinction is useful for qualifying a definition for resourcefulness that locates it in this tension between anchor and drift. Analysis of a source must hold mutual regard for established contexts while also allowing for semiotic drift, or wandering, implicated with new and emerging contexts.

To explain what this means for source use, I am drawn to Richards's suggestion in the passage above that readers need to know "the laws of their motions." When using sources, writers are often concerned with strategically positioning summary, paraphrase, and direct quotation based on rhetorical and discursive considerations, some explicit and some tacit. The laws of motions for sources often fall inexactly between the constraints imposed by context and whatever gesture might extend from or altogether break with those constraints. Resourcefulness is in this case about finding potential and foraging for pathways similar to the prepositional adjustment that favors along/across as opposed to from/into. In fact, for source use, Richards' discussion of resourcefulness bears strong resemblance to the respective along/across frames introduced by Ingold, and both of these aspects are amplified in the visual representations of each worknet phase because the hub and spoke model represents the source at an up-close scale, as dwelling among these paths and as one small intersection in a much larger networked constellation. Source use settles into an orbit or loop that alternates between constraints and drift, or between itinerate and exploratory movements. For researching writers, neither purely itinerate nor purely exploratory manners of source use will suffice; writers skillful in source use must alternate between these movements because source-based writing requires frequent, decision-making oscillation between source and new text.

Mapping the resourcefulness of sources may proceed after adjusting the default prepositions associated with source use and while aspiring to maintain a balance between the itinerate (across) and exploratory (along). Because this second gesture—making sources resourceful—is closely related to method, perhaps one further illustration of the logic this worknets-based pedagogy builds upon will serve before turning to the project itself.

In his book, *Placeways*, Eugene Walter juxtaposes method and *tao* as two distinctive approaches to wayfaring:

> [T]he *tao* remains close to the contours of natural landscape and avoids rationalization, preferring wiggly paths or irregular courses of water. In contrast, the Greek sense of *hodos* or "route" expects rationalization. Our term, "method," which means a way of proceeding but implies rational conduct, comes from the Greek words *meta* plus *hodos.* (Walter 185)

Methodical approaches to source use can be helpful, but I find them especially promising when we foreground our thinking about *met-hod* in relation to the term's Greek ancillaries *meta-* (beyond) and *-hodos* (paths) (Walter 185). With this in mind, *method*ical approaches to source use are not so much lockstep processes of search, retrieval, selection, and integration, but rather as routes across and beyond particular problems. Simply, methodical approaches to source use can become restrictive too early in an inquiry process if we understand source consultation and use as following too narrow or monolithic a set of procedures. When approaches to research writing tolerate stagnant or unquestioning operations, source integration risks turning to unchecked ritual—a flat but requisite gesture involving finding and slotting excerpts. In general, this is what I wish to avoid in my teaching

of research-based writing. My intention is neither to abandon methodical approaches to source use nor to put too deeply in doubt rationalist sensibilities about the functions of sources in researched writing. Rather, worknets as an alternative framework may provide a complementary approach that supports writing conceived and carried out along "wiggly paths or irregular courses." In relation to the distinction Walter draws between method and *tao*, a worknets-based pedagogy makes the most of the resourcefulness of sources. Furthermore, it does so with mutual regard for the value in rationalist aims and purposeful source use, on the one hand, and exploration along "wiggly paths," or a *tao* sensibility, on the other.

What, then, is available for us *to do* with sources that is at once in service of these traditional goals and yet simultaneously encouraging writers to move above and beyond typical pathways of retrieval, reading, and citation? The following section showcases the worknets project that, extending from the pedagogical framework I have elaborated up to this point, provides an alternative to conventional and methodical approaches to source use—that is, it formulates a response to the *What else can we do?* question—a response as concerned as The Citation Project is with "what students are actually doing with their sources" (para. 1) as with what else they could be doing to develop facility with textual research.

Worknets: Course Context

I first developed this project for a section of WRTG326: Research Writing I taught at Eastern Michigan University in the Fall 2010 semester. The course typically enrolls second-, third-, and fourth-year students from a wide variety of majors, a slight majority of whom identify with programs in English Studies, such as Written Communication, English Education, and Journalism. The course promises "to explore the strategies, format and styles of writing appropriate for academic research with emphasis on the student's own field of study" (Eastern Michigan University Academics n. pag.).

Due to the many fields of study represented in the course, I sought to create a project flexible enough that students in different fields would gain similar insights into the resourcefulness of sources in spite of distinctive disciplinary frames from which they researched. A second priority was to dwell at length on a specific source and to be diligent about surfacing many different aspects of its entanglements, which I suspected was atypical compared with other approaches to source use students were already experienced with. Finally, I wanted to craft the project so it would build through intervals—small pieces students could share with each other and with me. Furthermore, working in intervals means each worknet phase could be temporarily held apart from the others, but the series of phases would build in succession toward a more thickly enmeshed representation of traceable associations woven, branching, and threaded across one another. At each interval, students wrote an account of the specific worknet phase surfaced through each of four approaches: *semantic*, *bibliographic*, *affinity-based*, and *choric*. Each phase also included an illustration—a simple diagram consisting of links and nodes—produced using Google Drive Drawing{3}.

The worknets project demonstrated in the next section took shape over six weeks, running from Week Four through Week Ten in a fifteen-week semester. Students developed it while attending to other course readings and an array of research-based activities—an inquiry memo, ongoing course readings, self-selected readings with annotations, and a semester-long inquiry-based research project informed by *The Craft of Research* by Joseph Williams, Wayne Booth, and Gregory Colomb. Together, the four phases constituted 20% of the overall grade for the course.

Four Worknets Phases

To begin, each student selected a germinal article published since 1980. I emphasized that the article choice must be made with care because we would be making multiple passes along the source to illustrate the four respective worknet phases. Choosing sources also involved reading the full text of the article, of course; however, I did not want to place too much value on perfect alignments between the article and the emerging focus of their sustained research projects because I was seeking to sponsor a more exploratory relationship to research-based inquiry, even as students began with provisional areas of inquiry, or topics, related to their fields of study. That is, at the same time students were searching for and selecting an article appropriate for their four worknet phases, they were also drafting inquiry memos that articulated *possible* researchable questions related to their majors. For some, the two were tightly integrated, but for others, they bore a looser correspondence. Articles with at least a handful of citations were better, for the purposes of the worknets, than articles that cited three or fewer outside sources. Once everyone selected a source to map according to its networked associations, the project called for creating the first of four phases.

Semantic

The semantic phase concerns *vocabulary*—words and phrases that appear in the article itself and whose in-context reference and meaning can be more deeply examined as well as traced to peripheral ideas suited to further exploration. In a manner similar to what Richards calls for, honing in on specific references recognizes the function of words and phrases as speculative instruments that can augment inquiry, refine research questions, and bolster related search processes. In practical terms, taking the words and phrases themselves as resources, the writer could use these terms to query various search engines, to set up a Google Search Alert,{4} or to consult the *Oxford English Dictionary* attentive to the each word's root elements and etymology.

Techniques for surfacing a semantic worknet in an article include reading and annotating with attention to high-occurring words and phrases, reading and annotating for unusual turns of phrase or highly specialized language, or using freely available, web-based platforms to identify frequently appearing terms, such as Tagcrowd.com or Wordle.net. The first two approaches privilege close work with the source *while* reading it; thus, these may complement conversations we want to have with students about note-taking and indexing sources for a specific project. The web-based approach, on the other hand, operates by a different logic that finds a value in getting some distance on the original source. Tagcrowd.com and Wordle.net will translate the full text version of the source, provided it is a digital version whose text can be copied and pasted, into a weighted list.

With a selection of words and phrases identified, the writer may revisit the locations on the page to look for variations in usage. To return again to Marilyn Cooper's The Ecology of Writing, for example, the development of a semantic worknet phase indicated the following two-word phrases, or bi-grams, in the article (with number of occurrences in parentheses): cognitive process (13), ecological model (8), textual forms (8), process model (8), and solitary author (7) (See Figure 1). The written account based on this semantic worknet might dig more deeply into "process model." What exactly is a "process model" in the context of the article? In what other ways has "process model" figured into scholarship about writing contemporaneous to Cooper's article or in the nearly three decades since?
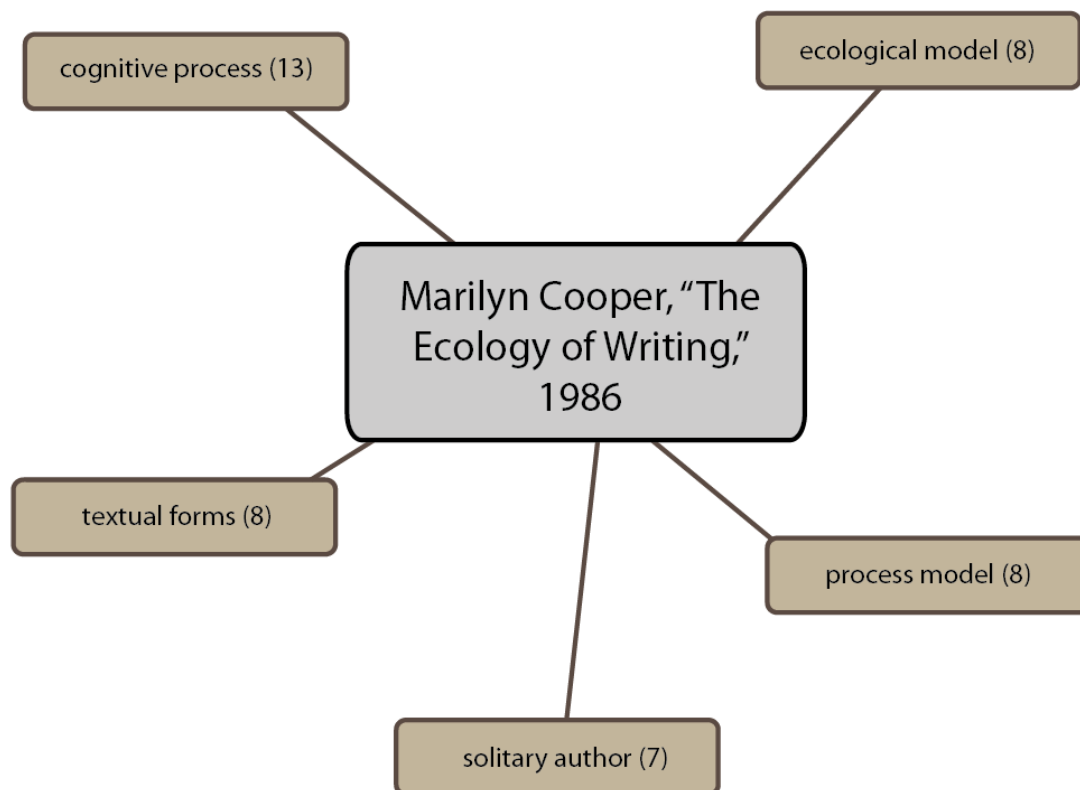

Figure 1: Semantic worknet phase.

Bibliographic

Whereas the semantic worknet phase is concerned principally with the text of the source and the recurrent words and phrases therein, the bibliographic phase accounts for the sources it cites. This turn to references perhaps passes without much critical consideration among those with experience in research writing. This is because references lists or works cited supply researching writers with a ready list of sources in the neighborhood of the initial source. The bibliographic worknet only asks that we notice references more deeply, that we read them on the lookout for citations likely to prove somehow useful to the project.

Techniques for establishing a bibliographic worknet amount to noticing sources and selecting a few of them to retrieve and read from those listed. The motives for selection need not be too narrowly defined, although they could be based on different ways of identifying source types (e.g., scholarly sources; chapters, articles, and monographs; primary, secondary, and tertiary sources) or dates (e.g., divide all references into three equally divided units based on the overall period covered, then choose one from each timeframe). The bibliographic phase can also challenge students to trace the selected references back into the article itself to look at how they are set up, framed, and how frequently they are mentioned.

Cooper's The Ecology of Writing cites 32 sources. Certainly collecting and reading all of them would be a formidable undertaking, but settling on three to five of them would nevertheless prove worthwhile to enlarge the scope of the inquiry drawing on Cooper's work. The worknet phase illustrated in Figure 2 isolates four references: Kenneth Burke's *A Grammar of Motives*, Lloyd Bitzer's The Rhetorical Situation, Shirley Brice Heath's *Ways With Words*, and George Dillon's *Constructing Texts.* Working from this short list, the writer would attempt to retrieve these materials from the library, and having tracked down a copy of Burke's *A Grammar of Motives*, for example, would ask, What pieces of Burke's work does Cooper use? What other sections of the book might, at a glance, extend the idea of an ecology of writing? When students select and retrieve full monographs, I don't ask them to read the entire book but rather recommend they look selectively into a chapter or section used in their germinal article. Chapters and articles, however, warrant a full reading. Again, the key to a bibliographic worknet is that it turns to references as a method for enriching inquiry.
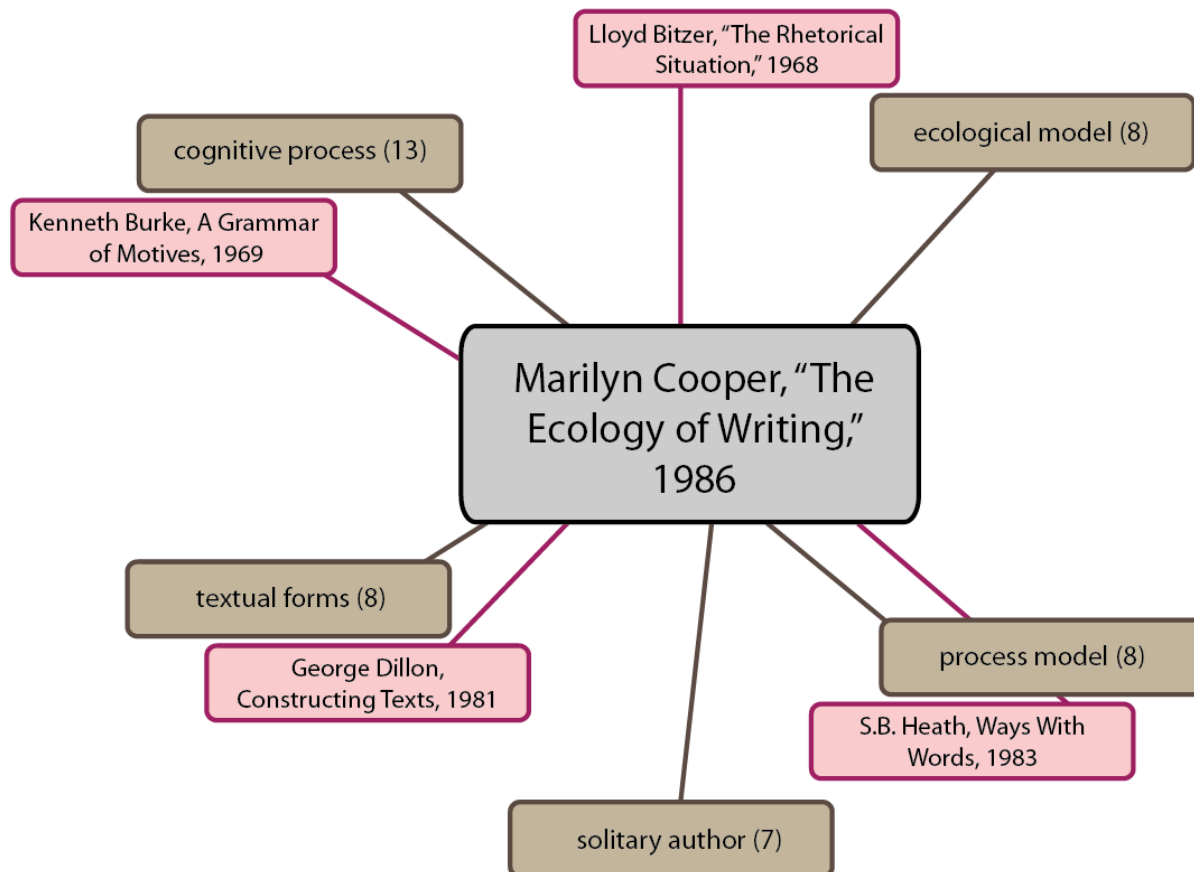
Lloyd Bitzer, "The Rhetorical Situation," 1968

cognitive process (13)

ecological model (8)

Kenneth Burke, A Grammar of Motives, 1969

Marilyn Cooper, "The Ecology of Writing," 1986

textual forms (8)

George Dillon, Constructing Texts, 1981

process model (8)

S.B. Heath, Ways With Words, 1983

solitary author (7)

Figure 2: Bibliographic worknet phase.

Affinity-based

The affinity phase (See [Figure 3](#)) focuses on an author's working relationships: collaborations, professional appointments and associations, graduate program of study, and identifiable intellectual influences. Whereas the semantic and bibliographic worknets take root in the text itself, affinity worknets turn to questions of authorship. Affinities may be loose or strong, short-lived or enduring, professional or personal, but whatever constitutes them, taking stock of them, which is to say rigorously noticing them, may prove a resource that can substantially shape a particular line of inquiry related to the focal source. Affinity-based worknets pursue as traceable associations those aspects of sociability and worldview that may be more difficult to identify in any one article.

Affinity-based worknets and the forms of evidence they are built upon are not as obvious. To begin surfacing an affinity-based worknet, a researching writer might search for other work by the primary author of the source. Are there co-authors listed? A second technique for monographs would be to look at the acknowledgements section or the dedication. Affinity-based worknets also consider the programs in which someone has studied, the faculty they worked with there, and the cohort they belonged to. Are there any patterns identifiable in other work done by these scholars and teachers? Relatedly, what was the focus of the author's dissertation or thesis research? Who was on the author's dissertation committee? What areas of focus are evident in their work? The tracing of affinities works with gradually larger spheres to consider a broader variety of forces likely to have influenced the author. This is time-consuming work, and it yields irregular, often unverifiable results. Nevertheless, the deliberate consideration of influences and affinities may be germane to an emerging research question for a writer who has identified the source as foundational. For example, noticing collaborations expands a genealogy of people and ideas. Consider a source on multimodal composition. Affinities in other work related to design and computational methods would suggest those as opportunities for further exploration; alternatively, affinities with scholars in composition theory and assessment would suggest slightly different connections. Mapping these affinities proves conductive insofar as it illuminates relationships that, because they span people and ideas, suggest interdisciplinary pathways for further exploration and examination.

Again, setting out from Cooper's 1986 essay, one would ask, what affinities can I find? Remember that the worknet does not need to exhaust all possibilities but rather only locate, select, and include a few choice affinities related to Cooper's career. For example, Cooper collaborated with Cynthia Selfe on an article in 1990. In 1980, Cooper's dissertation research at the University of Minnesota, *Implicatures in Dramatic Conversation*, focused on H. Paul Grice. She worked with Dennis Lynch and Diana George on an award-winning article in 1997. Without delving too far into Cooper's biography, we have picked up a couple of points that may prove fortuitous. Because the worknets initiate this tracing as invention, the process does not lend itself to determining preemptively the utility of any lead. Instead, the point is to generate a confluence of associations that fan out from the source and that, by tracing these associations, writers begin to realize as available a greater range of possibilities for connecting Cooper's work to their emerging research interests.
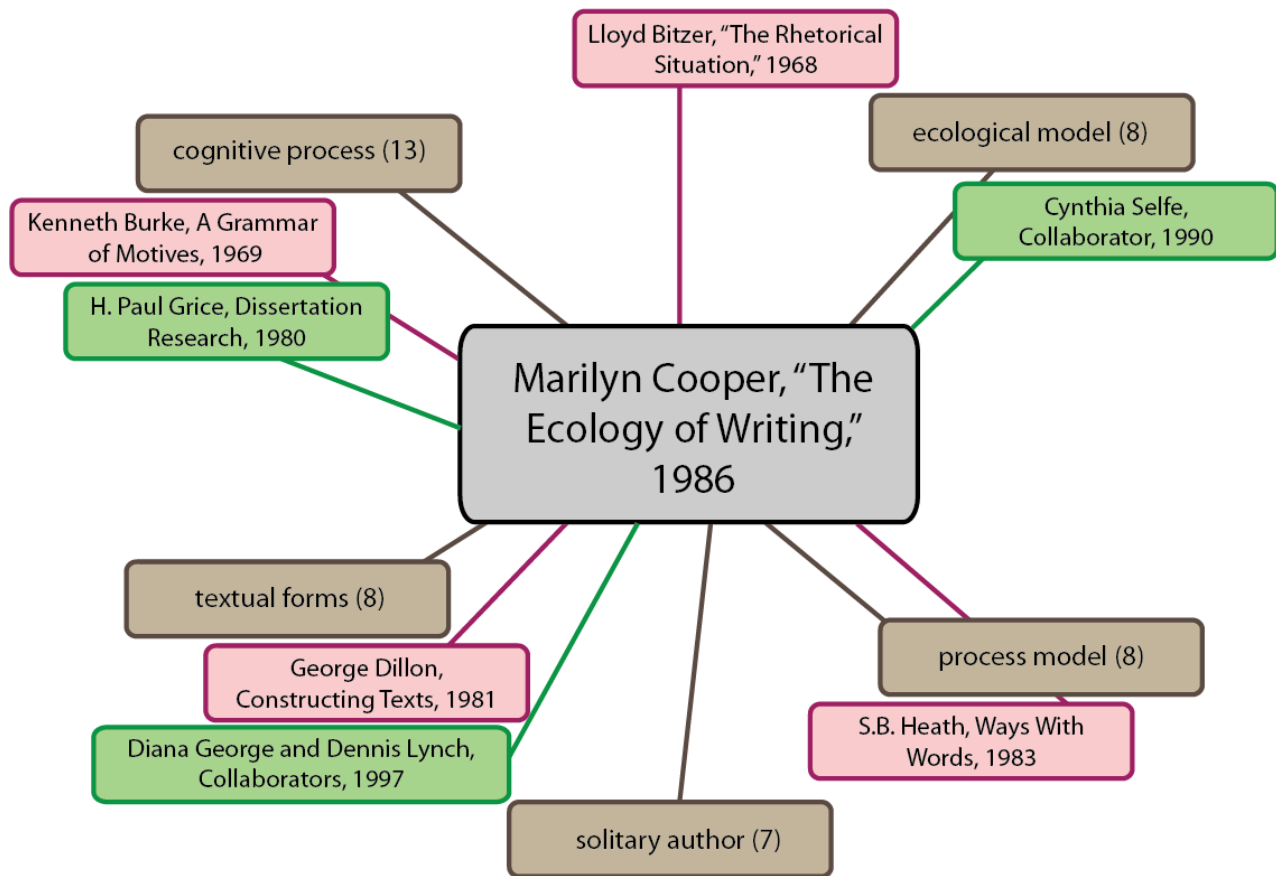
Figure 3: Affinity-based worknet phase.

Choric

Choric worknets draw on the idea of *chora*, an alternative to topical or *topoi*-based invention. Thomas Rickert elaborates on the concept and examines its theoretical genealogy in Toward the Chora:

> [Jacques] Derrida and [Gregory] Ulmer in particular utilize inventional methods that could be called choric, as opposed, for instance, to topic invention, because of the way they attribute inventional agency to non-human actors such as language, networks, environments, and databases. They demonstrate that the *chora* is of rhetorical interest because it transforms our sense of what is available as means for persuasion, or, more precisely, of what is available as means for rhetorical generation, in line with an expanded notion of spatiality that complexifies traditional divisions among discourses, minds, bodies, and circumambient environs. (253)

The pedagogy and project I am introducing could be broadly described as choric, but earlier phases of it, such as the semantic phase, could be more conventionally understood as topical relative to the way Rickert describes choric invention. Thus, although the other worknets could be considered choric, this phase of the project is more playfully far-afield in its willingness to explore time-place coincidences—the ambient surrounds—for rhetorical generation, or invention.

Like the affinity worknet phase (Figure 3), a choric phase is not concretely grounded in the text of the article. Rather than attend to scholarly and intellectual ties as the affinity worknet does, it explores coincident objects and events from popular culture in the interest of enlarging context—something like what Rickert calls "circumambient environs." Establishing a choric phase involves exploring the time and place the article was occasioned from and listing corresponding moments, even though they may at first seem an odd assortment (See Figure 4).

Cooper's article was published in 1986, the same year *Ferris Bueller's Day Off* played in theaters, Chinese economist Deng Xiaoping was celebrated as *Time*'s Man of the Year, Al Capone's vault was opened, Bill Buckner missed the ground ball, and Da Yoopers released their first album, "Yoopanese." The choric worknet instigates

surprising, uncanny insights through juxtaposition. These disparate elements may or may not turn out, ultimately, to be inspiring or influential. They come with no guarantees. Identifying this particular phase (3-5 pop cultural coincidences), however, *can* stir new researchable questions, as follows: How do ideas of process and ecology generalize to the economic theories embraced by Deng Xiapong? Or how does an ecological approach to writing change the ways we might think about school movies from 1986, such as *Ferris Bueller's Day Off* or *Back to School*? Even further, at yet another degree removed, how do ecological models underscore or shed light on developments in the middle of Ronald Reagan's presidency, relating to the war in Nicaragua, the environmental movement in the mid-1980s, or the Iran-Contra affair?
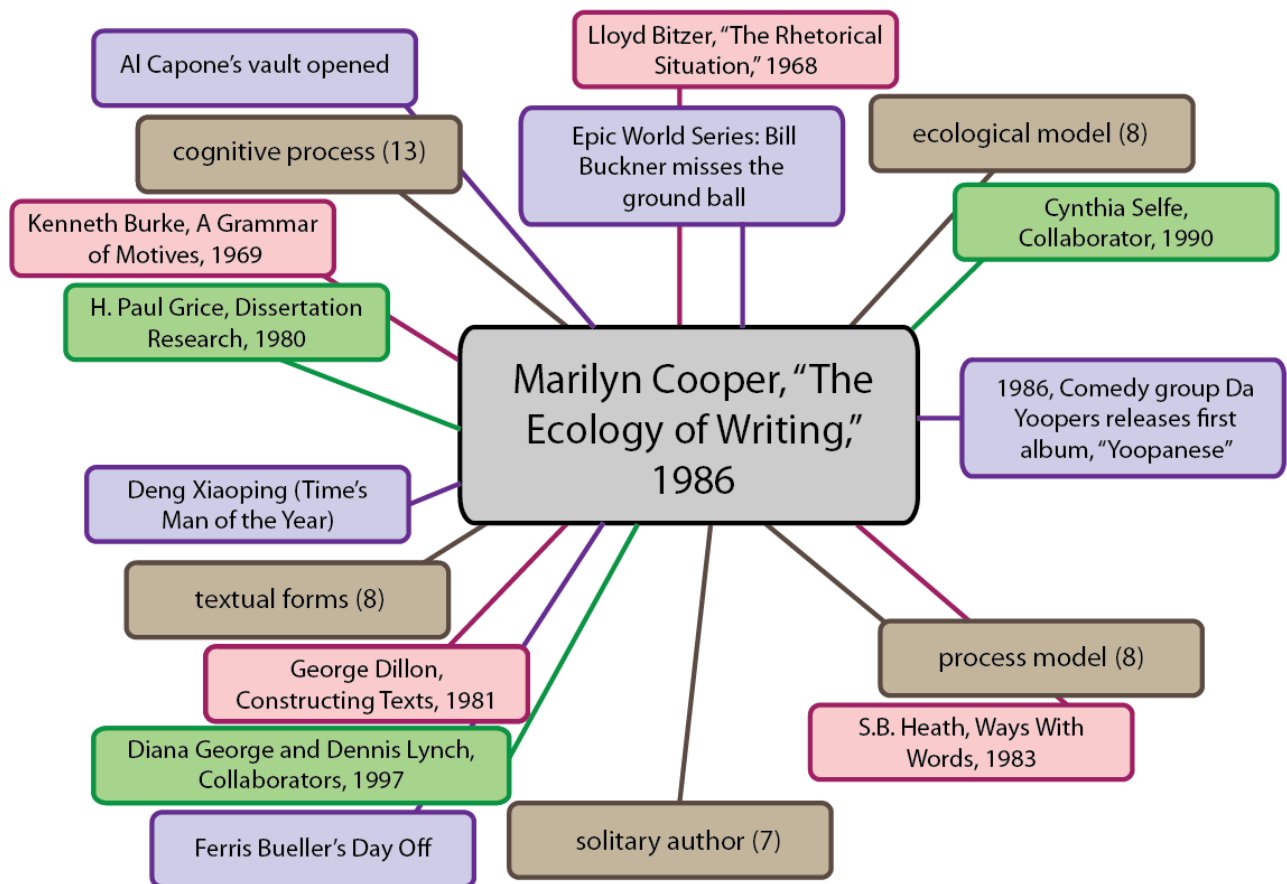

Figure 4: Choric worknet phase.

To Conclude, Further Enmeshed

Depending on previous experiences with textual research, commonplace thinking about source use may change sharply as a consequence of the worknets-based pedagogy and project introduced in this paper. The pedagogy requires a deliberate, mindful adjustment in pre-positions typically associated with source use, as well as slow and patient movements concerned with the coinciding spheres the germinal article could be said to be enmeshed within: semantic, bibliographic, affinity-based, and choric. The four phases produces a constelled abundance— copious options, among which writers can pick and choose. For instance, the project involving an ecological model, comedic movies about schooling, and Cooper, Lynch, and George's "Moments of Argument" article, would by this method yield a promising research focus—on agonism in contemporary rhetorical education, perhaps—that became available only through the mapping of associations premised on a balance between itinerate (across) and exploratory (along) processes. Tracing each worknet phase, drawing it, and writing an account that explains the ties that have materialized and how those ties are generative for an emerging research project—these practices encourage researching writers to pause, dwell, and reflect upon sources and in such a manner that can challenge shallow reference while still serving goals of research writing and rhetorical education. This approach offers a flexible structure for source-based rhetorical invention that generalizes to most attempts at source-based composition; that is, its method offers a transferable heuristic for writing in many other situations, particularly those in which academic sources are foundational.

Following the pilot of this project, the anecdotal feedback I received was and has remained generally positive. Some noted that the idea of slowing down and hovering on a single source was uncommon but that it proved invaluable for understanding and engaging with the resourcefulness of sources. Other feedback suggested creating worknets for multiple articles during the semester. Still other informal comments inquired about the significance of the graphical element, which was more labor intensive for those who had no previous experience using concept mapping or drawing applications. From very early on in the development of this project, I considered the visual representation to be important as a way to map into a simplified, two-dimensional frame the spatio-conceptual relations emanating through the germinal source. I continue to find a value in this aspect of the worknets, but I also acknowledge that the worknets project could be successful using other approaches, such as hand-illustrated sketches or written accounts only.

There remain many possibilities for worknets-based projects, including applying it to several articles, as I have already mentioned. By sharing in-progress documents across groups or an entire class, students could also develop worknets collaboratively and later consult them as an inventional commons. This would work well in a research-based writing class using a common domain of inquiry. The worknets project also scales vertically and horizontally, reaching deep into the university curriculum: it could be taken up in a first-year writing course, an upper-division writing intensive course in a variety of disciplines, and in a graduate seminar. Yet another possibility would be to explore other aspects of the germinal article, such as the ages of the sources it draws upon, or the density of the sources in-context (i.e., noticing when sources are involved thickly or thinly). Each of these speculative openings maintains an interest that persists throughout this paper—an interest in enriching and prolonging encounters with sources.

Notes

1. Early turns to ecologies to theorize or understand composition can be found in Richard Coe's 1975 *CCC* article, Eco-logic for the Composition Classroom, as well as in Louise Wetherbee Phelps's *Composition as a Human Science* (1988), which has as its first section, Constructing an Ecology of Composition. Contemporary examples of ecological thinking about writing are in ever-growing supply, available in *Ecology, Writing Theory, and New Media* (2011), edited by Sidney Dobrin, as well as in Nathaniel Rivers and Ryan Weber's 2011 *CCC* article, Ecological, Pedagogical, Public Rhetoric. (Return to text.)

2. This question could also evaluate the verbs commonly used in contexts urging students to write with sources. (Return to text.)

3. The visual representations of worknets displayed in the article were created in Google Drive Drawing, a free-to-use online application suited to creating labeled elements, drawing lines among them, and storing the in-progress illustration for future additions. One-color off-prints of these sketches may not reflect that each worknet is differently color-coded. Google Drive Drawing makes the project of colors, spacing among nodes, and typeface changes relatively intuitive to apply, though proficiency with these settings will likely require practice and explicit instruction. Google Drive Drawing also provides an export command that allows writers to save the image as a .jpg file, which can then be inserted into a document.

   Use of Google's free online platforms for creating drawings or word-processed documents must acknowledge two important points. First, teaching with these platforms is rather like standing on shifting sands because they may change at any time, including while you are in the midst of a project or project making use of them. Second, using Google Docs or any other Google service requiring a user account will necessitate signing up, and while this is a relatively innocuous-seeming step, it includes accepting Google's Terms of Service. I recommend faculty who ask students to use Google platforms for required coursework explicitly acknowledge the Terms of Service and reserve time for anyone with reservations to discuss the alternatives available. (Return to text.)

4. Google Search Alerts are standing searches configured to send email or RSS notifications each time Google encounters a new occurrence of the term. In effect, it establishes an algorithm suited to searching the freshest of what's available--relative to a particular query--on the web. For more, visit http://www.google.com/alerts. (Return to text.)

Works Cited

Brent, Douglas. The Research Paper and Why We Should Still Care. *WPA* 37.1 (Fall 2013): 33-53. Print.

Brooke, Collin Gifford. *Lingua Fracta: Toward a Rhetoric of New Media.* New York: Hampton, 2009. Print.

Citation Project. What is the Citation Project? Web. February 8, 2012.

Coe, Richard M. Eco-Logic for the Composition Classroom. *College Composition and Communication* 26.3 (Oct. 1975): 232-237. Print.

Cooper, Marilyn. The Ecology of Writing. *College English* 48.4 (1986): 364-375. Print.

Dobrin, Sidney, ed. *Ecology, Writing Theory, and New Media: Writing Ecology.* Routledge Studies in Rhetoric and Communication Ser. New York: Routledge, 2011. Print.

Eastern Michigan University Academics. 2011-2012 Undergraduate Catalog. Web. January 22, 2012.

Head, Alison J. Beyond Google: How Do Students Conduct Academic Research? *First Monday* 12.8 (2007): n. pag. Web. February 8, 2012.

Howard, Rebecca Moore, Tricia Serviss, and Tanya Rodrigue. Writing from Sources, Writing from Sentences. *Writing & Pedagogy* 2.2 (2010): 177-192. Print.

Ingold, Tim. *Lines: A Brief History.* New York: Routledge, 2007. Print.

Lanham, Richard. *The Electronic Word.* Chicago: U Chicago P, 1993. Print.

Latour, Bruno. *Reassembling the Social.* Clarendon Lectures in Management Studies Ser. New York: Oxford UP, 2005. Print.

---. *We Have Never Been Modern.* Trans. Catherine Porter. Cambridge, Mass.: Harvard UP, 1993. Print.

Phelps, Louise Wetherbee. *Composition as a Human Science.* New York: Oxford UP, 1991. Print.

Richards, I.A. Speculative Instruments. *Professing the New Rhetorics: A Sourcebook.* Theresa Enos and Stuart Brown, eds. Prentice Hall: Englewood Cliffs, NJ. 8-39. Print.

Rice, Jeff. The 1963 Hip-Hop Machine: Hip-Hop Pedagogy As Composition. *College Composition and Communication* 54.3 (2003): 453-471. Print.

Rickert, Thomas. Toward the *Chora*: Kristeva, Derrida, and Ulmer on Emplaced Invention. *Philosophy and Rhetoric* 40.3 (2007): 251-273. Print.

Rivers, Nathaniel, and Ryan Weber. Ecological, Pedagogical, Public Rhetoric. *College Composition and Communication* 63.2 (Dec. 2011): 187-218. Print.

Sirc, Geoffrey. box-logic. *Writing New Media: Theory and Applications for Expanding the Teaching of Composition.* Ed. Anne F. Wysocki, et al. Logan: Utah State UP, 2004. 113-148. Print.

Spinnuzi, Clay. *Network: Theorizing Knowledge Work in Telecommunications.* New York: Cambridge UP, 2008. Print.

Walter, Eugene V. *Placeways: A Theory of the Human Environment.* Chapel Hill: U North Carolina P, 1988. Print.