5 'PATACOMPUTING

A few years ago, Martin Mueller, the animating force behind the text analysis system *WordHoard*, decided to perform what we might call an experiment but would better be thought of as the fulfillment of a brief moment of curiosity. Using the system's powerful word-counting and lemmatization features, Mueller was able to create lists of the most frequent words in Homer and Shakespeare:

Homer	Shakespeare
man (ἀνήρ)	lord
ship (ναῦς)	man
god (θεὸς)	sir
heart (θῡμός)	love
hand (χείρ)	king
son (υἱός)	heart
horse (ἵππος)	eye
father (πᾰτήρ)	time
word (ἔπος)	hand
companion (ἑταῖρος)	father

I call attention to the spur-of-the-moment character of his investigations, not to suggest that one could not conduct elaborate experiments involving word frequency (many have done so), but simply to point out the ways in which this operation has been made virtually effortless by digital technology. The creation of *WordHoard* required many hours of careful programming and design, but that effort is minimal in comparison to what was required of those who created the first dictionaries and concordances—or even, for that matter, the first books. If Alfred North Whitehead was correct, the result of such effortlessness represents not just the formation of a new convenience but also an epochal moment for civilization, which, he thought, "advances by adding to the number of important operations which we can perform without thinking about them" (42).

It is appropriate, of course, that we ask whether Mueller's lists are the result of an "important operation." They do not contain anything that one might call, at first glance, an astonishing result, and one immediately intuits facile lines of argument proceeding from them. Homer's *Iliad,* after all, is a book "about ships" only in the way that the old bromide figures *Moby Dick* to be a book "about fishing." It comes as a surprise to no one that God and man are subjects of concern to both Homer and Shakespeare. The lists seem "right," but the knowledge we gain by their revelation might be thought of as confirming what we already know. For Mueller, it is both more and less than what we expect: "Given the fact that writers spend endless hours putting their words into the right order, it is disconcerting that a list of their most commonly used nouns will tell you quite a bit about what they are up to. This grossly reductive model of a text works much better than it should. . . . Homer is about 'man, ship, and god' in that order. Stop reading right there" ("Digital Shakespeare" 12). That we can arrive at a three-word précis of the *Iliad* "without thinking" seems of little moment if the result of such critical operations leads to "grossly reductive models." In every way, the un-deformed text seems preferable to its atomized form.

Still, it is unlikely that a human being, even if asked to name only the top three words in each text, would produce these lists precisely as the machine gives them to us. And for this reason, our explanations must assume the character of narrative. Perhaps "eye" figures prominently in Shakespeare because, as Maurice Charney observed, "Love enters through the eye" (122), with the result that romantic protagonists in Shakespeare are no longer masters of themselves but instead subject to forces not of their own making—forces different from, but related to, the forces that perturb the lives of Achilles, Hector, and Odysseus. One might also observe that the "heart" of Homer is not at all the "heart" of Shakespeare. *Thumos* is soul, vitality, spiritedness—the *animus* of the body. It is also the will to distinguish oneself—the horse that runs alongside *eros* in the Plato's *Phaedrus* and that will appear centuries later in Evagrius's description of the "passions." At some point we must contend with the anomalies. Why is "hand" so prominent in both lists? "Love" and "time" seem right for a Renaissance dramatist, but the explanation of both words will require much more elaborate explanations. Mueller notes that "'love' and 'time' mark out important semantic domains of Shakespeare and indeed of 'modern' literature as it has been theorized since the Quarrel of the Ancients and Moderns" ("Digital Shakespeare" 13). But what are these semantic domains?

Other algorithmic processes suggest themselves. *WordHoard* can unerr-

ingly (and instantaneously) locate every instance of "love" and "time" in both texts—even distinguishing the noun from the verb in the case of the former. Given such marvels, it is tempting to suppose that one might even settle the Quarrel, as it were, by using tools that were unavailable to any scholar before now. But in fact, further transformative operations are most likely to follow the same course that Mueller's lists set for us. The results (the new lists) would first hit us with the force of the obvious while at the same time causing us to construct narratives that, despite the "obviousness" of the results, must at a certain point adjust to the parts that don't quite fit or that require more elaborate explanations. An analogy with science suggests itself, but not the usual analogy. Throughout the process, and largely in spite of ourselves, we would teeter between confirming our own theories and forming new ones. At a certain point our narrative could no longer be said to resemble the one that supposedly explained the very thing that threatened to make us "stop reading right there."

Algorithmic criticism is born at that moment, but it need not be born. David Hoover—a skilled stylometrist, and therefore a great lover of lists—likes to play a game with his students in which he shows them a list of novels and asks them to rank them according to "vocabulary richness" (defined as the largest number of different words per fifty-thousand-word block):[1]

Faulkner	*Light in August*
Henry James	*The Ambassadors*
Bram Stoker	*Dracula*
D. H. Lawrence	*Sons and Lovers*
Oscar Wilde	*The Picture of Dorian Gray*
Virginia Woolf	*To the Lighthouse*
Willa Cather	*My Ántonia*
H. G. Wells	*The War of the Worlds*
Jack London	*The Sea Wolf*
Mark Twain	*Pudd'nhead Wilson*
Rudyard Kipling	*Kim*
Sinclair Lewis	*Main Street*

A few years ago, in an e-mail in which he offered this list for the edification of my own students, Hoover suggested that I "see how they react to the fact that they are listed in ASCENDING order of vocabulary richness." "What always really astonishes them," he wrote, "is that Sinclair Lewis has double the vocabulary of Faulkner" ("Face of Text"). My students are indeed astonished by this. Faulkner, as every undergraduate student knows, is hard; *Main Street* is straightforward. James is notoriously "wordy" (more so even than Wilde);

The Sea Wolf is simple and fun; *Kim* is a children's book. The professional scholars to whom I have shown this list, however, are eager to point out how un-astonished they are. Mostly they complain about "richness"—sometimes accusing me of having rigged the game (though I am careful to explain the precise definition of "richness" being stipulated). Not one of them has ever gotten the order remotely correct.

As with Mueller's lists, one is behooved to go further by examining the language from which these results are drawn. Here is the prologue to *Main Street,* which, Hoover assured me, "helps explain it":

> The town is, in our tale, called "Gopher Prairie, Minnesota." But its Main Street is the continuation of Main Streets everywhere. The story would be the same in Ohio or Montana, in Kansas or Kentucky or Illinois, and not very differently would it be told Up York State or in the Carolina hills.
>
> Main Street is the climax of civilization. That this Ford car might stand in front of the Bon Ton Store, Hannibal invaded Rome and Erasmus wrote in Oxford cloisters. What Ole Jenson the grocer says to Ezra Stowbody the banker is the new law for London, Prague, and the unprofitable isles of the sea; whatsoever Ezra does not know and sanction, that thing is heresy, worthless for knowing and wicked to consider.
>
> Our railway station is the final aspiration of architecture. Sam Clark's annual hardware turnover is the envy of the four counties which constitute God's Country. In the sensitive art of the Rosebud Movie Palace there is a Message, and humor strictly moral.
>
> Such is our comfortable tradition and sure faith. Would he not betray himself an alien cynic who should otherwise portray Main Street, or distress the citizens by speculating whether there may not be other faiths? (Lewis 4)

And here are the second and third paragraphs of Faulkner's *Light in August:*

> She had never even been to Doane's Mill until after her father and mother died, though six or eight times a year she went to town on Saturday, in the wagon, in a mail-order dress and her bare feet flat in the wagon bed and her shoes wrapped in a piece of paper beside her on the seat. She would put on the shoes just before the wagon reached town. After she got to be a big girl she would ask her father to stop the wagon at the edge of town and she would get down and walk. She would not tell her father why she wanted to walk in instead of riding. He thought that it was because of the smooth streets, the sidewalks. But it was because she believed that the people who saw her and whom she passed on foot would believe that she lived in the town too.
>
> When she was twelve years old her father and mother died in the same summer, in a log house of three rooms and a hall, without screens, in a room lighted by a bug-swirled kerosene lamp, the naked floor worn smooth as old

> silver by naked feet. She was the youngest living child. Her mother died first. Then he died. McKinley, the brother, arrived in a wagon. They buried the father in a grove behind a country church one afternoon, with a pine headstone. The next morning she departed forever, though it is possible that she did not know this at the time, in the wagon with McKinley, for Doane's Mill. The wagon was borrowed and the brother had promised to return it by nightfall. (3–4)

There is no sense in which these excerpts "explain" the lists; at best, they demonstrate more clearly what the lists tell us. That is undoubtedly all that Hoover meant to convey. What needs explaining is not the fact that the vocabularies differ, or even that our perceptions differ from some supposed textual reality. The explanations we need run instead along two opposite poles separating the astonishment of the students from the skepticism of the scholars.

My students have no trouble explaining why the lists surprise them, but their reactions—unencumbered by the professional consequences of error—give us the seeds of a kind of exploration seldom associated with text analysis. They have arrayed the objects of their intellectual life in categories that correspond, among other things, to the cultural penumbras in which texts are disseminated and taught. Books come to them as high or low, deep or shallow, hard or easy, read "for pleasure" or read "for class," with dozens of gradations in between, and they assume (rightly) that words are somehow, though not exclusively, implicated in this arrangement. The scholars, by contrast, are eager to construct a narrative by which the new results can fit with what they already know—an activity they undertake confidently and with ease. For the students, the game has not risen to the level of criticism. For the scholars, it has not descended far enough toward circumspection. The scholars are right to interrogate the admittedly crude notion of "richness" stipulated by the game, but to stop there is to avoid algorithmic criticism. What is needed is a definition of "richness" that can account not merely for the professional reaction but also for the reactions of the students. The result of such investigations might be a better game (or a better algorithm), but it is just as likely to involve critical investigations that, like the confusing confluence of words and culture, do not involve computational analysis. The ultimate result, in other words, is the conversation itself, which is neither content with the "imagine that" of disrupted expectations nor too eager to explain it all away.

Bolder methods are required if we are to break away from these two impulses, and in recent years a number of new tools have appeared that aim to negotiate such territory. One of the more elaborate ones is the *Text Analysis Portal for Research (TAPoR),* which cheerfully employs metaphors that are entirely foreign to contemporary humanistic inquiry. Methods for analyzing

"the theoretical basis of texts," "exploring themes," and "comparing concepts" are presented as "recipes" with numbered steps (Rockwell, "TAPoR Recipes"). We're invited to "try it" as if the thing to try were a new car or a new pill. Again and again, the language of *TAPoR* points not to methods or procedures, but to "tools"—things to be wielded against any text on the Web (the default examples optimistically include both a corpus of French medieval poetry and the *Universal Declaration of Human Rights*). Yet despite these metaphors, all of which mingle marketing with mechanization in a way that suggests anything other than the sober, meandering *parole* of humanistic discourse, *TAPoR* confidently asserts a rhetoric of self-interrogation. In one of *TAPoR*'s apologias, we read that text analysis involves "asking questions of a text and retrieving passages that help one *think through the questions*" (Rockwell "What Is Text Analysis?"; emphasis mine). Concordances, keyword-in-context displays, frequency generators, and even a "word cloud" that sets the tokens adrift in a two-dimensional space are presented as provocations designed to force users into "think[ing] about their interpretative practices." However foreign its interface might be, text analysis is insistently put forth by *TAPoR* as "an interactive practice of discovery with its own serendipitous paths comparable to, but not identical to, the serendipitous discovery that happens in rereading a text." (Rockwell, "What Is Text Analysis?")

Few tools better illustrate these serendipitous paths than Stéfan Sinclair's *HyperPo,* one of the tools for which *TAPoR* acts as a portal. From the first moment a text is loaded into *HyperPo,* it is transformed into data points and visualizations. The very first screen is a kind of neoteric frontispiece in which the text—in this case, Christina Rossetti's *Goblin Market*—is presented as a series of critical statistics:

Report on the Text

- Text Source: goblin.txt
- Text Title: Goblin Market
- Language of text: English
- Total words (tokens): 3107
- Unique words (types): 1130
- Highest word frequency: 124
- Average word frequency: 2.75
- Standard Deviation of word frequencies: 7.58
- Average word length: 4.30
- Standard Deviation of word lengths: 1.82
- Number of sentences: 77
- Average words per sentence: 40.4
- Number of paragraphs: 568
- Average words per paragraph: 5.5

Such numbers are seldom meaningful without context, but they invite us into contexts that are possible only with digital tools. One would like to ask whether Rossetti's average word length is long or short relative to other poems written by her, other poems of the period, or to other poems in the English language, even though it is not at all clear where such investigations would lead or what the results might mean. Even so, seeing some trend or sudden spike in the graph along any of these vectors would prompt further questions that extend beyond the linguistic or even the stylistic. *Goblin Market,* after all, is not merely an example of nineteenth-century word usage. It is, within the widening context of critical thought, a children's poem, an erotic poem, a Victorian poem, a feminist poem, a pre-Raphaelite poem, and a poem about market forces at mid-century. We cannot avoid reading such considerations "into the data." If algorithmic criticism is to occur, we must insist upon it.

If crossing the broad terms of textual discussion with frequencies and deviations has not yet invited critics to such speculation, it is perhaps because such lists as these evoke critical procedures that are long out of fashion. This is perhaps why *HyperPo,* true to its name, presents them only briefly as a kind of parlor trick. It is the last moment in which confident assertions of fact prevail. At the bottom of the list we are invited to "Continue" on to an interface in which there is no way to encounter the text on its own. In the upper left is a box in which the words of the texts—now better thought of as "tokens"—have been colorized by frequency. In the upper right is a box for word frequency lists, which are always connected back to the deformed text through hyperlinks. The lower box displays graphs and charts, and they, too, are linked to the other windows. Clicking on any word in any part of the interface tends to set off chain reactions in others. So while we might try to read *Goblin Market,* that reading will soon be interrupted by a "weighted centroid"—a visualization in which each word is pulled off from a center point, as if by a gravitational force, by the words that surround it. Dozens of interruptions are offered. The strangest (whimsically labeled as an "advanced option") is undoubtedly the one that lets the user generate all anagrams contained within the text:

- ache (2), each (6)
- any (3), nay (3)
- are (2), ear (2)
- ate (3), eat (5)
- bore (1), robe (1)
- dare (1), dear (2)
- felt (2), left (1)
- for (22), fro (1)
- golden (11), longed (2)

- how (5), who (3)
- its (5), sit (1)
- lemons (1), melons (3)
- listen (1), silent (1)
- made (1), mead (1)
- mane (1), name (1)
- nails (1), snail (3)
- night (11), thing (1)
- owls (1), slow (1)
- rose (1), sore (3)
- saw (1), was (11)
- stone (5), tones (2)

As with Saussure's anagrams, we are likely to view such results with a mixture of suspicion and fascination. Taken alone, they seem either to represent evidence of a peculiar but undeniable property of English orthography (and therefore are essentially meaningless as a set of collocates), or as the gateway to a dubious mysticism. In the context of *HyperPo,* however, such results serve to deepen a relationship with the text that governs the entire experience of using the tool. For all its concern with numerical information, *HyperPo* consciously works against the realization of "results." Instead, we engage in a kind of "microscopic reading," which, like the close reading it both analogizes and contradicts, draws us into certain kinds of noticings. Clicking through various collocates and word properties, for example, one notices that "Laura" collocates with "should" and "Lizzie" collocates with "not"; that the word "evil" appears in the poem, but not the word "good"; that "suck" is strongly collocated not only with "me," but also with "them"; that there is a steady upward increase (punctuated with various gaps) in instances of the word "eyes."

We might think of these as the "facts" of the text, but whatever knowledge is gained from their perusal stands at a marked distance from the quest for factuality that usually motivates linguistic and philological inquiry. Lizzie's sexually charged experiences and the refrain of the goblin men ("Come buy, come buy") might lead one to focus on these features, but even as one tries to follow these threads, the frames blink in and out with patterns and associations that lead in other (often contradictory) directions. *Explication de texte* is surely one possible outcome from these procedures, but the *texte* of *HyperPo* does not allow one to rest upon any straightforward set of heuristic prompts or frameworks. There are too many gaps—too many incentives for narrative—to allow one to ignore the extratextual valences that had once been rejected by the New Criticism. *Goblin Market* becomes what Jacques

Derrida, in "*Ulysses* Gramophone," called an "overpotentialized text": "We are caught in the net. All the gestures sketched in to allow an initiatory movement are already announced in an overpotentialized text that will remind you, at a given moment, that you are captive in a language, writing, knowledge, and even narration network" (48). In the end, it is this text that constitutes the "result" produced by *HyperPo:* the text reframed by the "serendipitous discovery" of rereading.

Text analysis of the sort put forth by *WordHoard, TAPoR,* and *HyperPo* suggests other antonyms to close reading, including what Franco Moretti has called "distant reading." For Moretti, such reading is not merely a new possibility suggested by the sudden abundance of digitized texts, but, rather, a necessity for any coherent study of world literature:

> [T]he trouble with close reading (in all of its incarnations, from the new criticism to deconstruction) is that it necessarily depends on an extremely small canon. This may have become an unconscious and invisible premiss [*sic*] by now, but it is an iron one nonetheless: you invest so much in individual texts *only* if you think that very few of them really matter. Otherwise, it doesn't make sense. And if you want to look beyond the canon (and of course, world literature will do so: it would be absurd if it didn't!) close reading will not do it. It's not designed to do it, it's designed to do the opposite. At bottom, it's a theological exercise—very solemn treatment of very few texts taken very seriously—whereas what we really need is a little pact with the devil: we know how to read texts, now let's learn how *not* to read them. Distant reading: where distance, let me repeat it, *is a condition of knowledge:* it allows you to focus on units that are much smaller or much larger than the text: devices, themes, tropes—or genres and systems. And if, between the very small and the very large, the text itself disappears, well, it is one of those cases when one can justifiably say, Less is more. If we want to understand the system in its entirety, we must accept losing something. We always pay a price for theoretical knowledge: reality is infinitely rich; concepts are abstract, are poor. But it's precisely this 'poverty' that makes it possible to handle them, and therefore to know. This is why less is actually more. ("Conjectures" 57)

That we might "lose the text" undoubtedly frightens many. But as Moretti makes clear, this fear is simply the inverse of the one in which we place our faith. To say that the gypsy interlude in book 12 of *Tom Jones* metaphorically encapsulates a vast network of political tensions in eighteenth-century England strikes us as a responsible use of literature; a spreadsheet full of numerical information on the appearance of "gypsies" in English novels provokes fear of a criticism ungrounded in the particularities of language and textuality. Neither one avoids the hermeneutical circle that has worried

every critical theorist since Schleiermacher, but the latter touches not only on fears of an inhumanistic technology but also on our (historically recent) sense of reading as a pious, wholesome activity that can serve to better us.

Most horrifying of all, of course, is the "not reading" that serves as the center of Pierre Bayard's *How to Talk about Books You Haven't Read.* For Martin Mueller, though, this most indecent of all literary anti-procedures becomes an important part of "the query potential of the digital surrogate":

> A book sits in a network of transactions that involve a reader, his interlocutors, and a "collective library" of things one knows or is supposed to know. Felicitous reading—I adapt the term from John Austin's definition of felicitous speech acts—is the art of locating with sufficient precision the place a given book occupies in that network at a given moment. Your skill as a reader, then, is measured by the speed and accuracy with which you can do that. Ideally you should do it in "no time at all." Once you have oriented a book in the right place of its network, you can stop reading. In fact, you should stop reading. . . ."Close reading" has . . . always been an exceptional activity. ("Digital Shakespeare " 9–10)

Many have observed that the affordances offered by digital text archives represent a radical break with conventional reading practices. For Mueller, however, those affordances may represent an enhancement of older forms of "not reading," since large digital corpora "do exactly what older forms of 'not-reading' were supposed to do: orient a text or set of texts in a larger document space" ("Digital Shakespeare" 10). Performing text analysis on a larger document space achieves both objectives simultaneously, since whatever orientation we achieve is largely the result of disorientation.

It is manifestly impossible to read everything, and it has always been so. The utility of the digital corpus—despite its vaunted claims of "increased access"—only serves to make the impossibility of comprehensive reading more apparent (though a stroll through the stacks of even a modest library serves to illustrate the same point). What is different about digital archives is the way in which text analytical procedures (including that most primitive of procedures: the keyword search) has the potential to draw unexpected paths through a documentary space that is distinguished by its overall incomprehensibility. Even Vannevar Bush, amid a conception of hypertext still more sophisticated than that offered by the World Wide Web, imagines the negotiation of the document space as it has been for centuries. Paths are drawn through books that have already been read by others using a relatively weak framework of citation and hearsay. Text analysis, because it allows navigation of the unread and the unknown, focuses the energies of not reading upon structures that lie outside and beneath the spare, if still

massive, structures of knowledge represented by the index, the bibliography, and the annotation. Mueller's "top ten words," Hoover's "vocabulary richness," and Sinclair's "weighted centroids" are able to disrupt not because they lay claim to deep textual truths, but because they are capable of presenting the bare, trivial truths of textuality in a way that allows connection with other narratives—in particular, those narratives that seek to install the text into a network of critical activity.

One of the most challenging—and necessary—modulations occurs when the "bare facts" of textuality are self-consciously connected to the insistently subjective aspects of rereading. One experiment, conducted a few years ago as part of the MONK (Metadata Offer New Knowledge) Project used a number of text-mining algorithms to try to discern patterns of "sentimentality" in a group of American novels. The *MONK* interface presented users with five texts: *Uncle Tom's Cabin, Incidents in the Life of a Slave Girl, Charlotte: A Tale of Truth, Charlotte's Daughter,* and *The Minister's Wooing.* A number of literary critics were then asked to rate passages on a scale in terms of the degree to which they exemplified "sentimentality." The system then analyzed the low-level features of those texts to construct a model that could predict unknown instances. It would not be inaccurate to refer to such a system as a "sentimentality detector," and in general such algorithms (to quote Mueller again) work better than they should. It is the same technology that can locate, with eerie prescience, the books or movies that one "might also like" on websites like Amazon.com and Netflix. But whenever I have had the opportunity to present such systems to my colleagues, I have been confronted with the same question: who decides what sentimentality is?

That question goes a long way toward explaining the social and cultural obstacles to algorithmic criticism. On the one hand, it would seem to imply that "sentimentality" is something that needs to be succinctly defined before attempting to identify it in a particular passage—we define "sentimentality" and then we go find it in texts. Yet at the same time, the question would seem to indicate anxiety over the possibility of succinct definition. Do the people using *MONK*—the "domain experts," as a computer scientist or usability expert might call them—come to the system with a definition already in place, or is that definition itself the result of reading the texts and "rating" the passages? Won't the definition of "sentimentality" be colored by the dispositions of individual scholars? And who gets to be one of the scholars magisterially defining "sentimentality" for the detector? Isn't the entire idea of a "sentimentality detector" flawed from the start, since "meaning" is itself a shifting, culturally located concept incapable of precise definition or stable articulation? Such questions represent a "stop right there" of a different

sort. For in this moment of disbelief and worry, the philosophical insights and anxieties of poststructuralism threaten to do what they rarely do in the normative context of a critical article or scholarly debate. In those contexts, concerns about definition, bias, power, and exception do not halt debate, but guide it more fruitfully. Here, they threaten to dismiss a critical procedure that is distinguished only by the presence of a computer. For surely there is nothing in the procedure that makes any claim to truth value beyond what is already stipulated by any critical act.

The "result" of a system like *MONK* is the same as that for virtually any text-analytical procedure: a textual artifact that, even if recapitulated in the form of an elaborate interactive visualization, remains essentially a list. The algorithm determined that "die," "sorrow," "beloved," and "agony" were indicative of sentimentality. It also isolated "tomorrow," "paternal," and "payment." The first list assures us that there's some validity to the model; like "man, ship, god," it tells us what we already know. The second list, though, is the crucial one. We might say that it reveals what we didn't know; however, that is only a momentary condition. As with any text-analytical result, we can weave a narrative through the gaps. For this reason, we would do better to say that it carves a new path through the document space, which in turn allows us to reread and rethink sentimentality. New definitions are one possible outcome of that rethinking, but the iterative nature of text-analytical tools and the disruptive nature of hyperpoetic texts mirror the iterations and disruptions of critical debate itself. There is no end to our understanding of sentimentality. There are only new noticings, which in this case are practically discernible only through algorithmic means.

It may be that the tools of algorithmic criticism are like Wittgenstein's ladder. When we have used them to "climb up beyond," we recognize them as nonsensical and cast the ladder aside (*Tractatus* 74). The hyperpoetic text, after all, is less concerned with results than with experiences, and for a discipline not especially focused on methodology, it seems tedious—perhaps even pedantic—to detail the terms of that experience as if one were dutifully reporting the parameters of an experimental protocol. Geoffrey Rockwell and Stéfan Sinclair, in an essay titled "There's a Toy in My Essay! Problems with the Rhetoric of Text Analysis," suggest that text analysis "may have to abandon the essay and monograph for an interactive hybrid that can sustain two threads, showing both conclusions and the processes used to reach them." It is not difficult to imagine such a machine; no technical revolution is necessary before we can embed tools like *HyperPo* into a narrative. But neither would it require a rhetorical revolution. The interactive nature of the embedded artifact would allow the reader to arrive at conclusions that

are contrary to those being put forth by the narrative that surrounds it. The instant availability of the hyperpoetic text would sew the seeds of the essay's own destruction. The text would become a hybridized offshoot of the larger document space within which it is already implicated. And in that moment, algorithmic criticism would reveal itself most clearly as literary criticism.

If algorithmic criticism does not exist, or exists only in nascent form, it is not because our critical practices are computationally intractable, but because our computational practices have not yet been made critically tractable. To the degree that *WordHoard, TAPoR, HyperPo,* and *MONK* show the way forward, they do so largely by embracing the contingencies that once threatened the discipline of rhetoric, but that, like rhetoric, may come to form the basis for new kinds of critical acts. In an age when the computer itself has gone from being a cold arbiter of numerical facts to being a platform for social networking and self-expression, we may well wonder whether those new kinds of critical acts are in fact already implicit in the many interfaces that seek only to facilitate thought, self expression, and community. As with such recent inventions, the transforming effect will come through "the change of scale, or pace, or pattern that it introduces into human affairs" (McLuhan 8). Once those changes are acknowledged, the bare facts of the tools themselves will seem, like the technical details of automobiles or telephones, not to be the main thing at all. In this sense, algorithmic criticism looks forward not to the widespread acknowledgment of its utility but to the day when "algorithmic criticism" seems as odd a term as "library-based criticism." For by then we will have understood computer-based criticism to be what it has always been: human-based criticism with computers.