

The Humanities: A Technical Profession

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[Note: This is the full text of the talk, but illustrations and slides are not available online. Some passages adapt material from my The Laws of Cool: Knowledge Work and the Culture of Information (University of Chicago Press, 2004)]

"Humanities computing," "digital humanities," "technology in the humanities," and so on—such awkward phrases currently used to name the associations, programs, and other professional formations focused on the border between information technology and the humanities will one day fulfill their mission. That mission, phrased broadly, is to help integrate information technology in the work of the humanities so fully and in so entangled a manner—at once as tool, perspective, and theme—that it would seem just as redundant to add the words "computing," "digital," or "technology" to "humanities" as it was previously to say "print-based humanities." Information technology will simply be part of the business of the humanities along with all its other business.

However, it will make a great deal of difference whether the incorporation of information technology in the humanities—its business, I called it—occurs with or without critical awareness of the specifically professional meaning of such technology. The argument I make in this paper (which extends those in my forthcoming The Laws of Cool: Knowledge Work and the Culture of Information) is that without reflection on the position of the contemporary humanities relative to other professions in which IT has a defining role, the distinct strengths of the humanities cannot adequately be adapted for the culture of information.

This argument may be outlined in a sequence of exploratory hypotheses as follows:

1. Humanities scholars are now also knowledge workers. Today we are witnessing the convergence of the professions in a paradigm of postindustrial "knowledge work." Ours is the age of the "rise of the symbolic analyst" and of "intellectual capital," Robert Reich and Thomas A. Stewart declare, respectively, in two of the many books of popularizing economic and business discourse that appeared in the 1990s to dedicate the new millennium to the work of knowledge.¹ The distinguishing feature of such knowledge work is that it is governed by an increasingly common set of institutional, disciplinary, communicational, technical, and other practical (as in the notion of "best practices") protocols for managing productive thought. Whether as tightly wrapped as an ISO, RFC, or W3C "standard" or as fuzzy (yet nevertheless prescriptive) as "corporate culture," these protocols include all the host of rules, specifications, declarations, procedures, routines, and functions that now bind the "new middle class" or so-called "new class" to the postindustrial program of efficiency-cum-flexibility.

As the full title of Stewart's book (Intellectual Capital: The New Wealth of Organizations) indicates, the dominant protocols of knowledge work are those of business. Yet we should recognize that there are now no natural, outer bounds to business.² All of the following social sectors, for example, have been touched by the logic and discourse of postindustrial corporatism: the military, the health industry, government, and even non-governmental organizations. Thus consider the odd conjunction between the new, logistics-driven U.S. military with its just-in-time forces and communication networks and the anti-globalist NGOs with their own just-in-time protest forces mobilized through networked IT and "Managing Your NGO" business instruments provided by the Association for Progressive

Communications (financial spreadsheets, worksheets, checklists, analysis forms, case studies, etc.).³ {APC: [slide 1](#)} To this list of institutions influenced by postindustrial business, we can add the academy, including the humanities in higher education. It is not a stretch of the imagination, after all, to see that scholars increasingly perform analysis, personnel management, administrative, and other kinds of professional work that enroll them in the protocols of knowledge work.⁴ {Palinurus: [slide 2](#)}

2. The professions are bound to the protocols of knowledge work specifically by information technology. "Protocol" derives from Greek proto (first) + kollēma (glue): "the first leaf of a volume, a fly-leaf glued to the case and containing an account of the MS."⁵ From its first usage on, that is, "protocol" was an information device, a technology not just of data but metadata that anticipated what Shoshana Zuboff, in her In the Age of the Smart Machine, calls "informating," the accretion through computerization of ever thicker and more multiple layers of "information about information."⁶ I would call special attention to the "glue" in protocol, which emblemizes the essential "stickiness" of information technology, otherwise celebrated for its liquid, even ethereal virtuality. Precisely its liquidity, we recognize, makes IT the perfect super glue with which to coat any profession to make it adhere to the common knowledge-work model. Consider, for example, the fusion of "information" and "knowledge" in the first sentences of Stewart's book: {Stewart quote: [slide 3](#)}

Information and knowledge are the thermonuclear competitive weapons of our time.

Knowledge is more valuable and more powerful than natural resources, big factories, or fat bankrolls. In industry after industry, success comes to the companies that have the best information or wield it most effectively. . . .⁷

"Information" and the ability to "wield" it (i.e., IT) here stick to "knowledge" so closely that there is effectively no space of separation at all, no more so (in Stewart's figure) than deuterium and tritium after hydrogen fusion. TCP/IP, FTP, SMTP, HTTP, HTML, XML, 802.11b, and so on—these and other IT protocols are now our ultimate "glue" or, staying with Stewart's metaphor, fusion elements, except that their nuclei are "packets" networking everything together in the runaway fusion explosion called the Web.

In our specific context, this means that the protocols of knowledge work reified in IT are one of the main vectors by which corporate assumptions now enter the academy and the humanities. Co-partnership, co-research, contractor, donor, and other official relations established between major information technology firms and institutions of learning from K-12 through higher and for-profit education are just the macro side of the phenomenon. The micro side, which bulks as large as the tonnage of all the world's bacteria, consists in the way that the ordinary production work of the humanities (e.g., writing, reading [or, increasingly, browsing]) now depends on proprietary IT platforms and applications—a situation unlikely to change in the near future even with the increasing adoption of open-source programs on backend servers.⁸ Just try, for example (as I have done in a letter to the editor), to get PC Magazine to review products from an education-industry rather than corporate perspective even on a once-a-year, single-story basis. "It's not our focus," was the succinct conclusion of the editor, Michael J. Miller, in an otherwise kind and enlightened response.⁹ The fact that the majority of humanities scholars now use an application suite named "Office" to write "files" (as opposed to essays, chapters, or books) indicates the sway—subtle yet tidal—that business protocols exert.¹⁰ The "collaboration" features in Microsoft's Word, for instance, not to mention the new XML features in Microsoft's Office

System 2003 that tie individually authored documents into institutional databases, tug scholarship insensibly toward the model of corporate team work that became dogma after the fabled Toyota/GM NUMMI plant in 1984.

3. But IT is not just functional in knowledge work; it is also allegorical. We can take a page here from Martha Feldman and James March' shrewd study, "Information in Organizations as Signal and Symbol."¹¹ Feldman and March (as well as others) argue that rational choice theory alone cannot account for the enormous appetite of business for gathering and communicating excessive information that has "little decision relevance," is too late for the decision at hand, or is never considered at all. Such information dependency, Feldman and March suggest, can best be understood through an "information behavior" approach that views information technology as in great part a "symbolic" or "ritualistic" performance of rational decision making. IT, in other words, is not just functional in the economy of knowledge work; it is also representational—a fact never more clear than during the so-called "productivity paradox" of the late 1980's and early 1990's when massive business investment in IT led to no, or even declining, productivity. {slide 4} As I have argued in more detail in my Laws of Cool, business kept the faith in IT during these years because the true function of IT was to serve as a speculative mirror allowing the corporations (threatened by "Japan, Inc.") to envision whole new ways of distributed, decentralized, networked, non-hierarchical, team-worked, and otherwise "restructured" work.¹² Speculative vision or imagination, after all, has been a trope of business IT from the beginning. As Zuboff documents in her interviews, early corporate adopters of computers consistently described IT in a phenomenology of transcendental vision: IT was what let them "see it all."¹³ The current IBM ad campaign for its middleware and information services

continues the tradition. {IBM ads: slides 5, 6} In the ads, which occur in clustered versions (three or four at a time on consecutive recto pages in Business Week), workers stand like prophets with physical eyes shut but mental eyes wide open, just imagining the promised land of networked connectivity. "Can you see it?" reads the slogan.¹⁴ At once operational and imaginary, IT is what might be called a "functional allegory" or, equivalently, "allegory of functionalism."¹⁵ IT is our preeminent contemporary poiesis.

4. The humanities should embrace the poiesis of IT for alternative ends—first of all at the level of organizational imagination. If IT is a poiesis, we would do well to remember that humanities scholars specialize professionally in the history, forms, tropes, and, just as importantly, contradictions of poiesis, whether literary or—in the expanded, Percy Shelleyan sense—social. The humanities, therefore, should not just adopt IT but use it in synchrony with its own traditions to imagine an alternative society of knowledge. It should assert, in other words, that business has no monopoly on the use of IT for envisioning "what will be" or the "road ahead" (to cite the deterministic titles of two works of IT prophecy by Michael Dertouzos and Bill Gates, respectively).¹⁶ The place to start, I think, is close to home—in the alternative society that is the academy itself, where the humanities must first take care of business before it can persuasively make a case about business elsewhere.

There are two main levels on which the humanities can use IT to reimagine the protocols of the work of education. One is organizational. Business uses the functional allegory of IT to "restructure." The humanities can, too—even if (and especially if) the business it needs to restructure is in crucial ways not the same as corporate business. Here I come to what I perceive to be one of the frontiers of IT in the humanities. That is the far territory on which the many,

scattered humanities computing programs, centers, projects, and so on that have used IT as a catalyst to reorganize the normal disciplinary work of the humanities evolve from ad hoc organizational experiments into strategic paradigms of interest to the profession as a whole. In general, we must acknowledge, the profession of the humanities has been appallingly unimaginative in regard to the organization of its own labor, simply taking it for granted that its restructuring impulse toward "interdisciplinarity" and "collaboration" can be managed within the same old divisional, college, departmental, committee, and classroom arrangements supplemented by ad hoc interdisciplinary arrangements. The common denominator of many of these well-intentioned but institutionally-insecure interdisciplinary and collaborative hacks is that they create organizational shells within which the now ingrained, individual research and teaching of the humanities can continue unchanged—with hardly any of us, for example, actually co-teaching or co-producing research with anyone else in ways that exceed well-established humanities protocols (e.g., "colloquia," "conferences," or "panels"). This is despite the fact that we live in an era of declining sponsorship for individual humanities research as it has been channeled through the obsolete organizational form of the "fellowship." Very few humanities scholars thus try for large-scale project- or institution-based (rather than individual) funding from the government and the corporations to build structurally interdisciplinary and collaborative programs. And even fewer seek to initiate the systemic campus-, division-, or department-wide reorganization of the humanities that would be needed to fold interdisciplinary and collaborative work structurally into normal work (to the point, for example, of establishing course relief for grant-raising and project-management duties or tenurable rewards for junior faculty working on collaborative projects).

Could IT in the humanities make a difference? Those in the humanities who have started funded, collaborative projects (including many at this table) know that IT is a potential conduit for re-funding and reorganization.¹⁷ There are ways of using IT to claim a place at the table where campus or external funding agencies assign monies that have worked, and many other ways that the humanities have not yet learned how to work (especially in the direction of cross-disciplinary ventures with the arts and with engineering and the sciences). One of the main tasks of those establishing programs in humanities technology, I suggest, is to use IT to refund and reorganize humanities work with the ultimate goal not of instituting, as it were, Humanities, Inc., but of giving the humanities the freedom and resources to imagine humanities scholarship anew in relation both to academic and business molds. The relation between narrow research communities and broad student audiences, for example, need not be the same as that between business producers and consumers. But unless the existing organizational paradigms for humanities work are supplemented by new models (e.g., laboratory- or studio-like environments in which faculty mix with graduate and undergraduate students in production work, or new research units intermixing faculty from the humanities, arts, sciences, engineering, and social sciences), it will become increasingly difficult to embed the particular knowledge of the humanities within the general economy of knowledge work. It will be difficult, for instance, to make a case before a legislature, public or private funding agency, and ultimately the general public for the study of historical knowledges deemed obsolete by business, to analyze data through such massively inefficient methods as close reading, or otherwise to invest resources in the half-baked, buggy, never-ready-for-IPO products symptomatic of education (e.g., student projects, dissertations, faculty Web sites such as Voice of the Shuttle).

5. The other level on which the humanities should embrace the poetic power of IT for alternative ends is technical. {menus: **slide7**} Search, query, sample, select, scan, filter, sharpen, blur, cut, paste, insert, sum, average, tag, encode, mark up, upload, download, attach, export, import, configure, install, save, back up, reboot, reinstall, write, read. These are some of the verbs on the top-level menu of technical skills that business workers, and others participating in the common protocols of knowledge work, now need to command. By contrast, here is the usual top-level menu of the operations systematically or explicitly addressed in higher-education literature classrooms: read, write, close read, contextualize/historicize, interpret, and critique (with the sub-skills required for these operations taught only unsystematically or implicitly; delegated to K-12, community colleges, composition programs, and IT staff; or addressed not at all). Of course, there are crucial overlaps between the two menus, especially "read" and "write." But there is also a fundamental disparity in the levels, explicitness, numbers, and granularity of technical skills.

Given the contemporary importance of technical protocols, I suggest, the time has come for the humanities to face up to its future as a technical profession like others. Only so can it give its students the necessary skills and impart the uniquely humanistic imagination of such skills capable of envisioning a more humane world of global competition—where the future, for example, might be neither the savagery of "us" versus "them" (what postindustrialism, in a now canonical phrase borrowed from economist Joseph Schumpeter calls "creative destruction") nor the concealed self-interest of free-trade compacts between "us" and "them" (which obscure the fact that we and they are not currently playing on the same level field), but instead a historically nuanced understanding of commonality with difference. If techne is where poiesis now

lives—something that both business and the "cool" users of the newest, "bleeding-edge" technologies attest—then that is where the humanities must go.

Above all, I think, the humanities can only teach a broader sense of culture in the age of corporate culture by demonstrating that the contemporary instinct for technical competence need not be oblivious to the sense of history that is the primary means by which the humanities at once reinforce and critique culture.¹⁸ Technique, in other words, cannot be surrendered up to the forces of productivity as a matter of purely practical skills and competencies extrinsic to serious humanistic study. Rather, the line originally drawn in the nineteenth century between the "idea of the university" and polytechnic knowledge must now be blurred to accommodate the possibility that there can be something deeply, historically humane about technique. Humanities IT is crucial in this mission of blurring. "How to Use a Computer," perhaps, should be a course in every humanities department taught by its most philosophically broad, theoretically advanced, and/or "cultural critical" faculty member (even if, or especially if, that faculty member is technologically hopeless). Or, again, every department should have a technical methods course (e.g., titled "philosophy of Powerpoint [or Photoshop, Word, TCP/IP, XML, open-source, etc.]) requiring students to learn the new technical protocols and to submit those protocols to interpretive or cultural critique.

After all, educators have been intent since at least the time of the Russian Formalists on showing that the humanities can be methodologically technical (raising the ire of those who accept the need for technical "jargon" in every single other field of contemporary knowledge except the humanities). What this effort must be for, ultimately, is to equip educators to reverse the field by insisting on the humanity of technique. The best way to do so is to bring to

technique an awareness of historical techniques. Here are the kinds of questions to be posed in the humanities considered as a technical profession:

- How might knowledge workers be educated both in contemporary information technique (the collection, verification, and collation of data; comparative and numerical analysis; synthesis and summarization; attribution of sources; use of media to produce, manipulate, and circulate results) and in archaic and historical knowledge technique (e.g., memorization, storytelling, music, dance, weaving and other handicraft, iconography, rhetoric, close reading), with the ultimate goal of fostering a richer, more diverse, less self-centered sense of modern technical identity?
- What and how did people "know," for instance, when cultures were dominated technically by orality, manuscripts, or print?
- How, in other words, is the progress of knowledge constituted from broad, diverse, and always internally rifted negotiations with historical knowledges, such that every "bleeding edge" innovation creates in its shadow not just a dark hemisphere of obsolete peoples ("residual," "subcultural," "throwaway") consigned to the social margin, but also a repurposing and recirculation of the knowledges of the people of the margin (the true bleeding edge)?

The undergirding thesis of the humanities technology projects that I have myself helped develop—such as the NEH-funded curricular and research initiative at UC Santa Barbara called Transcriptions: Literary History and the Culture of Information—is that while the humanities must begin to teach the technical skills needed to flourish in today's society, such "competence" is most valuable, both to individuals and society, when wed to a full sense of the technical

relationship between contemporary knowledge work and the history of human life.

I will close with a thought experiment. Consider George Legrady's Pockets Full of Memories, a work of new media art installed at the Centre Pompidou in 2001 as well as in a Web instantiation.¹⁹ Visitors to the physical installation scanned in personal mementos in their pockets or on their bodies and answered a short questionnaire about those objects (hard or soft, old or new, etc.). {Legrady: slide 8} Then a "self-organizing map" algorithm, a class of neural-net programs, dynamically organized the scanned images based on the ensemble of their shared, sometimes invisible conceptual resemblances. {Legrady: slide 9} Finally, a video mural displayed the unexpected, emergent, and changing affinities among the total set of 3,300 images (sampled 280 at a time). {Legrady: slides 10, 11}

This art-work is an emblem of what humanities IT could do in the age of knowledge work. Like Legrady's self-organizing images, humanities IT can refresh our organizational imagination by suggesting emergent structures of interdisciplinary collaboration. And it can also usher us into a new theater of technical skills to mix with our old. After all, one of the fundamental questions posed by Pockets Full of Memories is how it is humanly possible to perceive, let alone understand, a database of 3,300 objects—an artwork, in other words, that seriously addresses the structure and scale of information today. Kant on the mathematical sublime, we might think, is apropos. But so, too, are such technical skills as information sampling and statistical analysis for which humanities students are at present poorly trained.

In conclusion: the humanities, a technical profession: "Can you see it?"

Notes

1. Robert B. Reich, The Work of Nations: Preparing Ourselves for 21st-Century Capitalism (New York: Random House, 1992) [originally published in 1991]. The quote is the title of part III of Reich's book. Thomas A. Stewart, Intellectual Capital: The New Wealth of Organizations (New York: Doubleday, 1997).
2. One of the key witnesses, and/or causes, of such propagation in the 1980's and 1990's was the explosion of popularizing economic, public policy, and business discourse through such works as Reich's or Stewart's and the new business journalism. This is the period when the public began to follow corporate news affecting either job layoffs or the stock market.
3. NGOs, the APC says, also must "balance sustainable business practice with their missions." APC, "Managing Your NGO."
4. The very theories of decentered meaning adopted by the poststructuralist humanities, Arif Dirlik has argued, are uncannily close to those of postindustrial capitalism; see his After the Revolution: Waking to Global Capitalism (Hanover, N. H.: University Press of New England for Wesleyan Univ. Press, 1994).

The "corporatization of the university" has been much discussed of late. Critics of the corporatization of the university have included: Bill Readings, *ibid.*; J. Hillis Miller, Black Holes (Stanford: Stanford University Press, 1999); Paul Lauter, Canons and Context (New York: Oxford University Press, 1991), especially pp. 175-97; Christopher Newfield, Ivy and Industry: Business and the Making of the American University, 1880-1980 (Durham, N.C.: Duke

University Press, forthcoming); Wesley Shumar, College for Sale: A Critique of the Commodification of Higher Education (London: Falmer, 1997); Jeffrey Williams, "Brave New University," College English 61 (1999): 742-51; and Kevin Robins and Frank Webster, Times of the Technoculture: From the Information Society to the Virtual Life (London: Routledge, 1999), pp. 168-218. For a more extensive bibliography of both scholarly and journalistic works dealing with the topic, see the "Academe and Business" section of the "Suggested Readings" on my Palinurus Web site; Palinurus: The Academy and the Corporation (Teaching the Humanities in a Restructured World), March 1998, University of California, Santa Barbara, retrieved 19 October 2000 <<http://palinurus.english.ucsb.edu>>.

5. OED; see also American Heritage Dictionary.

6.

7. Stewart, p. ix.

8. It will be some time, if ever, before open-source IT has any felt impact on the bulk of the humanities except at the backend of servers. And even then, as the current cooptation of Linux by major corporate interests indicates, open source may simply slot into a larger configuration that is as much corporate and competitive as democratic and collaborative. In the new-fangled word of industry or regional industrial consortiums, that is, open source might just fuel "coopetition."

9. E-mail to the author from Michael Miller, June 11, 1998.

10. It will be some time, if ever, before open-source IT has any palpable effect on the bulk of the humanities.

11. Martha S. Feldman and James G. March, "Information in Organizations as Signal and Symbol," Administrative Science Quarterly 26 (1981): 171-86.

12. For sources and discussion of the information technology "productivity paradox," see chapter 4 of my Laws of Cool.

13. See chapter 3 in my Laws of Cool for discussion of Zuboff and the "vision" trope in information technology.

14. See, for example, the multi-page instance of the IBM "Can You See It?" campaign in Business Week, 17 November 2003: 107, 109, 111. The ad shown in slide 4 is p. 109.

15. The term "allegory" may be preferred to Feldman and March's "symbolism" because we are not dealing with the iconic fusion of IT to knowledge work as "mode of development" (Manuel Castells's phrase) to mode of production. In the influential de Manian analysis, "allegory" implies instead a congenital slipperiness or contingency like that of mask on face. IT may stick to contemporary production, that is, but not with the necessitarian telos heard in the titles of such books of information-technology prophecy as Michael Dertouzos's What Will Be: How the New

World of Information Will Change Our Lives (1998) or Bill Gates's The Road Ahead (1995).

Rather, the representational agency of IT makes it oxymoronically sticky-and-slippery. IT as allegory harbors the imagination not just of optimal knowledge for present conditions but other kinds of interfaces or masks, other kinds of knowledge, other kinds of work, even other kinds of life, pure otherness.

16. Michael Dertouzos, What Will Be: How the New World of Information Will Change Our Lives (New York: HarperEdge / HarperCollins, 1998); Bill Gates with Nathan Myhrvold and Peter Rinearson, The Road Ahead, rev. ed. (New York: Penguin, 1996).

17. I cite the close-to-home example of the NEH-funded, collaborative research and pedagogy project I and several colleagues at the University of California, Santa Barbara, started in 1996 called Transcriptions: Literary History and the Culture of Information, which has lately spun off an undergraduate specialization for English majors titled "Literature and the Culture of Information" and has worked in league with several other IT-related programs on the UCSB campus including Art Studio, the Media Arts and Technology Program, and Film Studies.

18. The following section of this paper adapts and compresses argument from my forthcoming Laws of Cool.

19. George Legrady, *Pockets Full of Memories*, installation, Centre Pompidou, Paris, 2001; online representation retrieved 1 January 2002, <http://legrady.mat.ucsb.edu/pfom_lang.html>.