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The “Informal Economy” of the Information University

“There is the employer’s sabotage as well as the worker’s sabotage. Employers interfere with the quality of production, they interfere with the quantity of production, they interfere with the supply as well as with the kind of goods for the purpose of increasing their profit. But this form of sabotage, capitalist sabotage, is antisocial, for the reason that it is aimed at the benefit of the few at the expense of the many, whereas working-class sabotage is distinctly social, it is aimed at the benefit of the many, at the expense of the few.” —Elizabeth Gurley Flynn, “Sabotage: Its Necessity in the Class War” (1916)

“Class struggle is basic to the capitalist mode of production in the region of ‘mental’ labor, just as it is to be found in the realm of physical production. It is basic not because it is a sign of the special quality of mental labor, but because it is simply labor.” —George Caffentzis, “Why Machines Cannot Create Value”

In this essay, I want to explore what can be called the informatics of U.S. higher education—the managerial logic through which university administrators have transformed the academic workplace on the model of information, so that education (and the labor providing it) is increasingly “delivered” as data, flowing in a bitstream highly responsive to managerial direction. As David Noble, Randy Martin, Gary Rhoades and others have observed: the new realities of managed education strongly correspond to the better-understood realities of managed care. The structural correspondences between the health maintenance organization (HMO) and the managed university (whose ideal form is the for-profit EMO) can be elaborated in many registers: both education and health have been increasingly “marketized,” transformed into sites of unprecedented capital accumulation by way of the commodification of activities and relationships, the selling-off and spinning-off of public assets and activities into private hands, the introduction of market behaviors (such as competition for resources and profit-seeking) into professional cultures, the unapologetic delivery of degraded service or even denial of service to the vast majority of the working class, and the installation of corporate-managerial strata to direct professional labor toward this neoliberal agenda.¹

There are, however, interesting differences in the social reception of managed health care and the managed university. First, there is a striking contrast in the overall affect displayed toward these transformations: the HMO is universally reviled, while “student satisfaction” with management-dominated higher education has never been higher, at least according to corporate-university surveys. According to these sources, students in all institution categories are overwhelmingly satisfied with the learning dimensions of their college experience, in many cases reserving their complaints for the quality of food and availability of parking. ² Second, the transformations in higher education are widely perceived as technology-driven. Much of even the most-informed and committed discourse in the field is obsessively

focused on information technology as the engine of change. This leads to the likely-mistaken concern that the “real issue” with the management revolution in higher education is that all campus-bound activities will be vacated in the metastatic spread of distance education—as in Noble’s widely-known formulation of “digital diploma mills” producing the “automation of higher education.”

It is important that these two differences in the social reception of the managed university push toward partly conflicting conclusions. On the one hand, the concern with technology represents the faculty’s idea that students are willing to accept a disembodied educational experience in a future virtual university of informatic instruction. On the other hand, the student concerns are overwhelmingly attentive to the embodied character of their experience—where to park, what to eat and so on. Why do the faculty envision students willing to give up the embodied experience of the campus, when the students are in fact increasingly attentive to embodied experience? Campus administrators continue to build new stadiums, restaurants, fitness facilities, media rooms, libraries, laboratories, gardens, dormitories and hotels: are these huge new building projects, funded by thirty years of faculty downsizing, really about to be turned into ghost towns? In my view, the claim that (future) students will generally accept a disembodied education experience is at least a partial displacement of the underlying recognition, not that future students will accept an “education experience divorced from the body,” but the extent to which present students have already accepted an embodied experience divorced from “education.” While the dystopic image of distance education captures the central strategy of the information university (substituting information delivery for education), that dystopia erroneously maps that strategy onto the future, as if informationalization were something “about to happen” that could be headed off at the pass, if we just cut all the fiber-optic cables.

What does it mean for students and teachers that informationalization has already happened? It means that we have met the Info. U., and it is us—not some future disembodiment, but a fully-lived present reality already experienced in the muscular rhythm of everyday life.

Understanding the information university as an accomplished fact means understanding that we’ve already done a pretty good job of translating education into information delivery over the past 30 years, and further understanding that this substitution has been accomplished by transformation of the academic workplace rather than by stringing optic cable.

Informationalization without Information Technology?

"I am very troubled by it," said Tom Hanks. "But it's coming down, man. It's going to happen. And I'm not sure what actors can do about it."

The spectre of the digital actor—a kind of cyberslave who does the producer’s bidding without a whimper or salary—has been a figure of terror for the last few years in Hollywood, as early technical experiments proved that it was at least possible to create a computer image that could plausibly replace a human being. — “Movie Stars Fear Inroads by Upstart Digital Actors,” Rick Lyman, *The New York Times*, July 8, 2001

The text that in some ways strikes nearest and in other ways less close to this understanding is the well-known series of articles drafted by David Noble in the late 1990s (subsequently revised and released as a monograph by Monthly Review Press, November 2001). Taking Noble’s work in the “Digital Diploma” series as a starting point is helpful not only because it has been widely disseminated across the world wide web, but also because the analysis originates in the actual workplace struggle of faculty in California and Canada, and because it maps the area of starkest contrast in the technology conversation: at the bargaining table, with the tenure-stream faculty mostly “against technology” and the administration mostly “for

technology.” This conflict is at least partially chimerical: the faculty and the administration aren’t primarily struggling over technology, but rather what they think “it” will do—something they agree on, and regarding which they’re quite possibly both wrong. The faculty and administration are fighting over what is essentially a shared vision, a vision of a future “created by” information technology, of a fully downloadable and teacherless education (at least for some people). The material base of this shared vision is a real struggle over the elimination of the jobs of teachers and scholars: the administration seeks to employ ever fewer teachers and scholars, and the tenured faculty seeks to preserve their own jobs and even occasionally exerts themselves to preserve a handful of positions for a future professoriate. (The recent CSU contract, through which the California Faculty Association compelled the administration to raise tenure-track hiring by 20% annually over the life of the contract in exchange for concessions in their cost of living adjustment is an eye-opening, and heartening, exception to the rule.) Technology fuels an enormous fantasy on both sides of this fence. On the administration side, it drives an academic-capitalist fantasy of unlimited accumulation, dollars for credits nearly unmediated by faculty labor—as Noble says, an “automated” wealth creation. The professoriate has its own equally fantastic idea, that they are preserving teacher work by taking a stand “against technology.”

The shared vision of a fully-downloadable education creates the scene of a pseudo-struggle, with the depressing consequence that it drains off the energies seeking to preserve the dignity of academic work. Noble himself acknowledges that the struggle over technology is a surface conflict (“a vehicle and disarming disguise”); beneath the technological transformation, “and camouflaged by it” is the major transformation represented by the commodification of higher education. Noble narrates the commodification process as a two-stage affair: phase one begins about 1980 with the commodification of research (“the systematic conversion of intellectual activity into intellectual capital and, hence, intellectual property”), converting the university into a purveyor in the commercial marketplace of the products of mental labor. Phase two as he tells it (and this is the chief point at which I vary with his analysis) is what he describes as the more recent corresponding corporate colonization of teaching, the “commoditization of the education function of the university.”³ Several useful insights flow out of the commodification heuristic as applied by Noble, including the understanding that universities are increasingly in open partnership with software, hardware and courseware vendors in the conversion of student learning activity into a profit center, and that—in an area also importantly discussed by Stanley Aronowitz and Dan Schiller—this partnership extends beyond the education vendors into the corporate world more generally, with the university eager to provide corporate training and retraining services (“lifelong learning”), an activity for which the rubric of “higher education” serves largely as a kind of academic-capitalist’s flag of convenience. In a scathing indictment of the growing “mission differentiation” of postsecondary institutions (providing tiered learning horizons corresponding closely to the class fractions of their constituencies), Stanley Aronowitz argues that most college students receive “higher training” and not higher learning and that overall “there is little that would qualify as higher learning in the United States” (2000: 157-172).

The primary way in which Noble makes use of the “commodification of teaching” heuristic is to relate faculty labor to “the historic plight of other skilled workers” for whom technological change provides a vector through which management can impose reductions in workplace autonomy and control—so that for academic administration the ultimate goal of technological deployment is to “discipline, deskill and displace” the skilled faculty workforce, just as in any other labor circumstance. (This is a point that Gary Rhoades has also made quite well.) For the most part, again, this approach is enormously helpful (to a real extent because it generates an accurate description of administrative intentions regarding technology). Furthermore, because—as Harry Braverman and the Italian autonomists have been at pains to demonstrate—mental labor is in fact labor (despite the folk-academic sense of exceptionalism), Noble’s series of observations paralleling skilled academic work with other forms of skilled work largely ring true.

4 Management dissemination of technology has been used to surveil, punish, regiment, censor, and control faculty; to direct how they allocate time and effort; to cement administrative control over the curriculum, and to impose supplemental duties including technological self-education and continuous

availability to students and administration via email. In some cases technology has even displaced living labor entirely with automated learning programs tended by software maintenance and courseware sales personnel.

Nonetheless, any discussion of “technologization” is going to leave us room to say more about what is “informationalized” about the information university. Noble is right that the administration’s motive in attempting to get faculty to convert their courses to courseware is ultimately to dispense with faculty altogether. He compares the plight of the tenure-stream faculty to the plight of the machinist Rudy Hertz in Vonnegut’s *Player Piano*: “They buy him a beer. They capture his skills on tape. Then they fire him.” But does dispensing with the “skilled academic labor” of the tenured faculty result in the workerless academic environment Noble pictures? Not at all: there are more academic workers than ever before. Noble writes as if the information university were a fully “lights-out” knowledge factory, an entire virtual u. on a bank of hard-drives facelessly dispensing information to students across the globe. This science-fiction view of an automated higher-ed completely captures administrative ambition (i.e., for academic capital to emancipate itself from academic labor, realizing value magically in a workerless scheme of dollars for credits completely unmediated by teaching). It equally captures the anxiety of the tenure-stream faculty regarding the systematic imperative relentlessly driving toward the elimination of their positions. Nonetheless it risks missing the underlying reality: dispensing with the skilled professoriate is accompanied by the installation of a vast cadre of differently-skilled workers—graduate students, part-time faculty, technology specialists, writing consultants, and so forth. (Similarly: replacing Tom Hanks with a “digital actor” doesn’t result in a workerless artistic production, but instead involves a battalion of talents that are differently but perhaps not “less” skilled: programmers, choreographers, caricaturists, physical anthropologists, animators, scene painters, photographers, voice artists, continuity experts, caterers, writers, and so forth.)

In trying to understand what is “informationalized” about the information university, we need to shift our focus to the consciousness and circumstances of the new group of education workers called into being by this transformation of the work process. This transformation cannot be exclusively a question of delivering labor, teacher labor or any other kind, in a commodity form—it is after all a general feature of all capitalisms that workers are required to “sell their labor” in order to live. Rather, informationalization is about delivering labor in the mode of information. A word about informationalization and the material world is probably in order. Generally speaking, informationalization does not mean that we cease to have or handle things, or that we have and handle virtual objects “instead of” the material world (as in Negroponte’s formulation that we move bits “instead of” atoms). Instead it means that we continue to have and handle material objects (more and more of them, at least in the thing-rich daily life of the northern hemisphere) but that we have and handle these objects in what Mark Poster calls “the mode of information,” which means that we manipulate objects as if they were data. It’s not that we don’t have car parts, novels, and armored divisions—only now we expect those things to be available to us in a manner approximating the way in which information is available to us. A fully informationalized carburetor is available in the way that electronically-mediated data is available—on demand, just in time. When you’re not thinking of your carburetor, it’s off your desktop. When you need to think about it, the informationalized carburetor lets you know. When it does manifest itself it gives the illusion of a startling transparency—you have in the carburetor’s manifestation the sense that you have everything you need to know about carburetors: how they work, fair prices for them here and in the next state, and so on. Informationalization means that artifacts are available on an informatic logic: on demand, just in time and fully catalogued; they should feel transparent and be networked, and so forth. Informationalization creates data streams alongside, crossing, and enfolding atomic motion, but doesn’t in most cases replace atomic motion. To the contrary, informationalization is a constant pressure accelerating and multiplying atomic motion toward the ideal speed of the bitstream and toward the ideal efficiency of capturing (as profit) the action of every fingertip, eyeball, and synaptic pulse.⁵

So what does it mean to labor “in the mode of information?” Above all, it means to deliver one’s labor “just in time” and “on demand,” to work “flexibly.” As Castells observes, the informational transformation relies even more on just-in-time labor than on just-in-time supplies (289). One doesn’t have to be employed “part time” to be forced to work in this fashion—one can have a “full-time” job and experience contingency (as many as a third of even the most economically privileged quartile of the work force, 4-year college graduates, report involuntary unemployment of several months or more in the years after graduation, while moving between what is usually a string of “full-time” jobs, often without benefits or seniority protections.) Nor does laboring in the mode of information necessarily imply “being an information worker,” but instead, the application to information workers of the management controls developed for the industrial workplace. In many respects this can be viewed as the extension of the process of scientific management to all forms of labor, as Braverman observed in his study of the rationalization of office work (293-358), even the work of management itself (see Bill Vaughn’s “I Was an Adjunct Administrator”). Constrained to manifest itself as data, labor appears when needed on the management desktop—fully trained, “ready to go out of the box,” and so forth—and after appearing upon administrative command, labor in this form should ideally instantly disappear.

When the task is completed, labor organized on the informatic principle goes off-line, off the clock, and—most important—off the balance sheets. This labor is required to present itself to management scrutiny as “independent” and “self-motivated,” even “joyful”—that is, able to provide herself with health care, pension plan, day care, employment to fill in the down time, and eagerly willing to keep herself “up to speed” on developments transpiring in the corporate frame even though not receiving wages from the corporation; above all, contingent labor should present the affect of enjoyment: she must seem transparently glad to work, as in the knowledge worker’s mantra: “I love what I’m doing!”⁶ As with other forms of consumerist enjoyment, the flex-timer generally pays for the chance to work—buying subscriptions to keep up, writing tuition checks, donating time to “internships” and unpaid training, flying herself to “professional development” opportunities—in all respects shouldering the expense of maintaining herself in constant readiness for her “right to work” to be activated by the management keystroke. Contrary to the fantasy of the sedentary knowledge worker who “telecommutes” and never leaves home, the actual flex-timer is in constant motion, driving from workplace to workplace, from training seminar to daycare, grocery store and gym, maintaining an ever more strenuous existence in order to present the working body required by capital: healthy, childless, trained, and alert, displaying an affect of pride in representing zero drain on the corporation’s resources.

Laboring in an informatic mode does not mean laboring with less effort—as if informationalized work was inevitably some form of knowledge teamwork scootering around the snack bar, a bunch of chums dreaming up the quarterly scheduled product innovation. Laboring in an informatic mode means laboring in a way that labor-management feels effortless: the relevant perspective is the perspective of the management desktop, from which labor power can be made to appear and disappear with a keystroke. Informationalized labor is always informationalized for management, i.e., so that management can always have labor available to it “in the mode of information,” called up effortlessly, dismissed at will, immediately off the administrative mind once out of sight. Indeed: for labor-management to feel so transparent and so effortless, a great deal of additional effort has to be expended (just not by management). For capital to have labor appear and disappear at the speed of the bitstream might, for instance, require concrete labor to drive sixty miles between part-time gigs, gulping fast food on the highway, leaving its children unattended: the informatic mode doesn’t eliminate this effort, it just makes that effort disappear from the management calculus. Informationalism cannot present labor in the form of data without offloading the costs of feeding, housing, training, entertaining, reproducing, and clothing labor-power onto locations in the system other than the location using that labor power.

To return to the Hollywood producer’s fantasy of the “cyberslave” that will “do his bidding without a whimper or a salary”: really understanding the informational transformation means acknowledging that

Hollywood producers already have an enormous army of “cyberslaves” who don’t complain or ask for a salary: they’re called actors. (In *All About Eve*, Bette Davis comments on the cost of a union caterer—presumably a would-be actor—by grumbling that she “could get an actor for less,” i.e., that she could pay an accomplished actor less to “perform the role” of catering her party than she would have to pay a would-be actor to “be the caterer.”) Under the regime of information capitalism: a film producer can often get a human being to act informationally—to leap at his command, even anticipate the snap of his fingers, and then obligingly disappear—at a labor cost to himself of exactly zero, except where restrained by the talent unions. But these living and breathing, unwaged “slaves” of the representational economy aren’t fed and housed and educated at no cost—just at no cost to the film producer.

So in reality it “takes a village” to present informationalized labor to capital. This form of the work process, “flexible,” “casual,” permanently temporary, outsourced, and so on, offloads the care and maintenance of the working body onto society—typically, onto the flex worker’s parents or a more traditionally-employed partner, as well as onto social institutions. This means especially, in the U.S., the health care provided at the emergency room and the job training provided by “higher education.”⁷ In the northern hemisphere, the operation of global capital somewhat cushions the care of higher-latitude flex workers by providing cheap consumer goods produced by contingent labor in the southern factories, so that, without the assistance of a parent or traditionally-employed partner, northern-hemisphere flex workers commonly cannot afford to buy real property (a home) or services (health care, legal services, day care, etc) at northern-hemisphere prices. Nonetheless they may be otherwise rich in possessions fabricated by southern labor (compact discs, computer hardware, clothing, assembly-required furniture). The most substantial expenditures made by the northern-hemisphere flex worker are commonly the debt-funded car and tuition payments that for many of them figure as the prerequisite for entering the flex-time economy in the first place.

The research of Saskia, Sassen and others has been helpful for understanding the relationship between sites of high technological sophistication, especially cities of the advanced economy, and the enormous growth of low-wage, low-profit economic activity in those sites (a fact that confounds most information-society propagandists). Some of this work is formally casual or contingent (legal part-time or term work), some of it is legal full-time but with extremely low degrees of worker security and on the job protection (Sassen observes that under globalization, firms migrate not to where labor is cheapest but to where labor can be most easily controlled, including to the urban centers of advanced economies with large migrant populations), and much of this low-profit, low-wage work is informal. As Sassen observes, the “informal” sector is not easy to define and, while akin to elements of the “underground economy”(i.e., dealers in illegal goods and services such as drugs and prostitution, and financial services associated with tax evasion), the “informal economy” encompasses activities that would otherwise be legal (garment manufacture, child care, gardening, home renovation) but are performed in illicit circumstances, either by being performed outside of or in an unclear regulatory environment, or by persons working illegally (such as under-age or undocumented workers). This group includes an extremely disparate collation of workers: high-school baby-sitters, sweatshop labor, neighborhood day care providers, construction day laborers, farm hands, and gypsy cab drivers. The informal sector has grown swiftly and unexpectedly in the U.S. since 1980, and Sassen has argued forcefully that this expansion is structurally related to the characteristics of the “formal” economy itself. In her work on immigrant workers in urban centers, for example, she observes that the rapid expansion of the informal sector of advanced economies is neither accidental nor the consequence of the “failings” or “inabilities” of Third World economies, from which cheap labor migrates to the first world. Instead, the informal sector is in her view “the structured outcome of current trends in advanced economies” (1997: 4-5; also see 1988: 7-9; 151-170). Which is to say: immigration and other “external” factors don’t “cause” sectors of advanced economies to become informal; advanced economies require the emergence of informality within themselves, resulting from “the structural characteristics of advanced capitalism” itself and the “flexibility-maximizing strategies by individuals and firms” in that system (1997:19). Samir Radwan redacts Sassen’s observation as follows: “If the informal economy did not exist, the formal economy would have to invent it”(Sassen 1997: 2).

The processes of rendering-informal are for Sassen the “low-cost equivalent” of the expensive, arduous and politically-charged activities of formal deregulation (that transpire in high-profit sectors of the economy), a corresponding shadow or de facto deregulation “which rests on the backs of “low-profit firms and low-wage workers” (1997:19). These insights might be brought to bear on the present discussion by saying, “It takes a high-tech city (or at least a college) to deliver informationalized labor to capital.”

Certainly any understanding of the relationship between the murky “informal” and the deceptively-transparent “informational” in the advanced economies requires a great deal of further research and theorization. Even limited research questions such as “What role might the information university play in helping the formal economy to ‘invent’ the relations sustaining the informal economy?” beg book-length empirical studies of their own.

But I do think we might make at least some theoretical progress by asking ourselves what can be gained by seeing colleges and universities as a version of these “low-profit firms” operating, not in a fully-informal fashion, but to a certain degree in a less-than-formal fashion, that is, in an environment of under-regulation, or in which the regulatory status of its workers is less than clear.

In terms of university accumulation, the emphasis has been to look at the activities of the top 100 research universities in the U.S., and in the light of deregulation of patent law, for instance, see the activities of these institutions as the bellwether of the university’s emergence as at least potentially a “high-profit, high wage” information industry. (And this line of approach has appeared reasonable, in connection with such visible developments as the university’s emergence as a competitor with entertainment capital to provide sports and other programming to media outlets.) With Bill Readings, many have been inclined to view the university as a transnational bureaucratic corporation, in a deregulated environment increasingly a global purveyor of educational services and research commodities.

But this construction of the informational transformation within academic capitalism is hardly typical of the other 4,000-plus U.S. institutions of higher education. Strict attention to the expenditure of labor time in these other locations gives a radically different picture of the information university than the fantasy of a workbench for faculty information entrepreneurs or a gateway to the “information society” for students.

What would happen if we asked, pursuing Sassen, to what degree is the university’s role in the advanced economies of the informational society structurally related to the relative informality of its employment relation? In raising this question, I am not at this time making an analogy between university workers and day laborers or migrant workers (though such analogies have been made, with greater and lesser degrees of applicability), or pointing to the financial relations between universities and garment sweatshops (such as those opposed by USAS and other student protest organizations). Nor am I addressing the university’s exploitation of its staff, as documented in the recent Harvard and Johns Hopkins living wage campaigns, for example (see Harvey 126-129), though these connections can and must be made as a matter of analysis and workplace organization. For purposes of this particular effort, I am pointing primarily to the actual legal and social confusion regarding the workplace status of the most visible and even traditional members of the academic work force, the professoriate itself, together with graduate and undergraduate students.

Perhaps the most obvious legal confusion surrounds the status of the graduate employee, many of whom over the last two decades have engaged in legal battles to win recognition that they are in fact workers (as in California and Illinois, and at Yale, NYU, and elsewhere), some lasting eight or ten years. Increasingly the designation “graduate student” has over the past thirty or thirty-five years served as a vector for the university’s cultivation of a “semi-formal” employment relation, in which graduate employees have all of the responsibilities of labor, including a teaching load heavier than many of their professors, commonly an employment contract, supervision, job training, a taxable wage, and so on, but enjoy fewer protections

than the regular work force. For instance, graduate employees are generally ineligible for unemployment benefits, and unlike regular workers can be compelled to pay “tuition” for their on-the-job training, shoulder job-related expenses, including the production of course-related materials, supplement a sub-living wage with unforgivable debt (student debt, unlike commercial debt or even consumer credit cannot be forgiven in bankruptcy) and engage in various forms of unpaid labor (in keeping with various ideologies of “apprenticeship,” “mentoring,” and “professionalism,” even though for most the term of mentoring and apprenticeship will not lead to professional employment). Nor can a graduate employee who doesn’t like her working conditions quit her employer and go to an alternative employer in the usual fashion: students who are unable to live on their stipends cannot easily move to a higher-paying program, and those who are not economically situated to take on debt to finish their degrees on the gamble of winning a professorial job are likely to quit rather than change programs.

This is not to say that justifications cannot be offered for the unusual circumstances of graduate employee labor. It is only to observe that the circumstances are indeed “special” enough for universities to fight to keep the specialness of the “student” designation, including in some cases spending lavishly on union-busting law firms. Correspondingly: many graduate employees find the “specialness” of this designation so disempowering that some are willing to struggle during the whole term of their graduate careers to escape from the “specialness” and win the rights of labor, including collective bargaining. Whether one supports graduate employee unionism or not, it is simply an observable fact that significant numbers of graduate employees are eager to enter circumstances resembling the more regulated environment of other workers.

For most of the past quarter century, the faculty also have worked in a contested and murky regulation environment. This is obviously the case with term workers and part-time faculty, some of whom for example have sued the state of Washington for retirement benefits. But the move to substitute flexible labor for faculty labor also transformed the role of the remaining tenure-stream faculty, who acquired additional supervisory duties in relation to the new graduate students and other flex workers. The 1980 Supreme Court decision in *NLRB v. Yeshiva* (444 U.S. 672) barred faculty at private universities from unionizing because the court viewed the activities of tenure-stream faculty as essentially managerial. Here again, the various efforts of faculty to overturn the *Yeshiva* decision don’t erase the “specialness” of their place in the academic labor process, which indeed commonly includes managerial responsibility, but it does indicate the preference of the employer to conserve the special relationship, and the degree to which at least some faculties, finding this specialness disempowering, seek to clarify it in law and policy.

Of course if it is at all useful to theorize the university as a semi-formal employer, discussing the conversion of graduate education to labor in the mode of information and the increasing managerialism of the faculty is only to have scratched the surface. To go on, we must investigate the ways in which the Info U. has transformed undergraduate experience in the quest for new wage workers, and critically examine the forms of semi-formal work to which the undergraduate has been increasingly dedicated over the same period of time.

To return to the three forms of labor commonly employed by “low-wage, low-profit” firms (casual, full-time but pragmatically contingent, informal): it is clear that since the late 1960s that higher education has expanded its reliance on casual, full-time contingent and the semi-formal labor of students, while also winning new “informalities” in its relationship with the professoriate (this de-formalization can be understood not just in the above-noted sense of the murkiness of the faculty role in the labor process caused by increased dedication of professorial labor time to the work of management, but even in the everyday withdrawal of support for research-related expenses: in my discipline, many faculty even at schools where research is required for tenure, pay most of their research and conference travel expenses out of their salaries, salaries that are in most cases already far lower than those with other “professional” degrees). There are, of course, other sectors of higher education (sci-tech, finance) that can be analyzed in

relation to “high profit, high wage” dimensions of information capitalism (though even at the handful of top research universities where such analysis is appropriate, the financial return on research dollars is notoriously low, considered as a capitalist “investment,” rather than a social good).

But the evidence of the other, larger trends with which I am concerned appears to suggest the necessity of considering the university’s role in information capitalism to be in many respects a role understandable in connection with the sort of “low wage, low-profit” firms with which Sassen has been concerned, where pressure toward “informality” is highest, and where workforces are chosen not merely for their cheapness, but also for ease of managerial control. As Sassen observes, “it is also their powerlessness which makes them profitable” (1988: 40), a powerlessness that emerges not only from the deskilling observed by Noble, and the industrialization of office work observed by Braverman, but also, especially in the low-cost, low-wage firm, from a “system of control” that is “immediate and personal,” in which employers can respond to worker dissatisfaction and complaints simply “by firing them” (1988: 42). The observation that low-wage, low-profit firms are driven (by competition) toward informalization of the workplace (hiring undocumented workers or evading other regulations), and derive competitive advantages from increased control over the worker, would seem to have at least some parallel importance for understanding transformations in the academic labor process.

This would lead us to ask in what ways the informatic logic of the university’s labor process—its dedication to the casual, full-time, contingent and semi-formal processes of labor “in the mode of information”—contributes to an increasing powerlessness of faculty, students and the citizens who emerge from the higher education experience?

Academic Employers and the Informatic Sabotage of Education

Escaping the regulatory apparatus of the formal economy enhances the economic opportunities of such firms. —Saskia Sassen

While it is highly questionable how many professors have been fired in consequence of having “their skills captured on tape,” we are nonetheless witnessing the disappearance of the professoriate. The teacherless classroom is no future possibility, but instead the most pressing feature of contemporary academic reality: it is difficult to find any sector of higher education institutions in North America where the full-time professoriate teaches more than thirty percent of course sections—even in the Ivy League (Coalition of Graduate Employee Unions 2000). The elimination over three decades (chiefly by attrition and retirement incentives) didn’t reduce the amount of teacher work being performed; it just handed teacher work to term workers who serve as administered labor and not collegially. In some departments of public institutions, as little as 10 percent of the teaching is done by professorial faculty. With occasional exceptions, most of this cadre of students and former students serving as term workers figure as the ideal type of labor-power “in the informatic mode”—they can be called up by the dean or program administrator even after the semester has begun, and can be dismissed at will; they have few rights to due process; they are frequently grateful to “have the chance to do what they love;” most rely on parents or a traditionally-employed partner for shelter, access to health care, day care and so on; of the rest, many are willing to finance their own sometimes-continuous training with as much as one hundred thousand dollars of debt. Surely this transformation of the academic work process, the substitution by attrition of contingent labor for faculty labor, is the core feature of educational informatics—a perfected system for recruiting, delivering, and ideologically reproducing an all-but-self-funding cadre of low-cost but highly-trained “just in time” labor power. Little wonder that every other transnational corporation wants to emulate the campus. By nearly any measure, the university represents the leading edge of labor in the informational mode.

What needs to be added to the commodification critique represented so well by Noble’s analysis is a

systematic accounting for the core transformation represented by casualization. On the one hand, this analysis is pushing toward exactly the right pressure point—informationalization as a matter of the workplace—and yet by focussing on the question of transmitting course content over a distance, the commodification critique incompletely addresses the experience of living labor, especially the majority of academic labor represented by flex workers. Another way of saying this is to observe that Noble has hold of what is incontestably the likeliest agent for resisting and controlling that transformation, and for articulating the labor of the North American academy to global proletarian movements—the faculty union—but then goes on to share into the thirty-year disappointing failure of academic unions to confront casualization. As I’ve written previously in *Workplace*: this is a story that deserves to be told in the key of Shakespearean tragedy, where one’s virtues are equally one’s flaws (Lear’s fondness, Hamlet’s phlegm): since 1970, the academy has become one of the most-unionized sectors of the North American workforce, and yet it’s been a unionization inattentive to management’s stunningly successful installation of a casualized second tier of labor. While 44% of all faculty and nearly 2/3 of public-institution faculty are unionized (by comparison to about 14% of the workforce at large and 30% of public-sector employees), consciousness regarding what to do about the contingent workers of the second tier has been slow to develop in faculty unions.

What is inescapably and enduringly important about Noble’s work in this series is its grounding in workplace struggle: it is only unionists like Noble who have mobilized any significant opposition to any dimension of the informational transformation, and who are capable of sustaining the necessary vision articulated by an organized faculty, as at the University of Washington, who insist that education can’t be reduced to “the downloading of information,” and is an “intersubjective and social process” (Noble 53). Nonetheless, the rhetorical and mistaken portait of informationalization as the “firing of professors” and a lights-out knowledge factory rather than the substitution of nonfaculty labor for faculty labor needs to be thoroughly confronted and reconsidered by faculty unionists, as well as by other persons situated by the academic-industrial complex.

Why does it matter? For one thing, the idea that academic informationalization can be equated with “the future” and “distance education” leads Noble to suggest in part III of the series that the battle’s been won, even before it was properly started. For instance: in the aftermath of some 1998 consolidation and retrenchment among online vendors, he writes that the “juggernaut” of instructional technology “appears to have stalled” and that “faculty and students have finally become alert to the administrative agendas and commercial con-games behind this seeming technological revolution.” Would that it were so! Noble comes to this conclusion (November 1998) with his “Part III” just 8 months after issuing a call in part II (March 1998) to defend faculty intellectual property rights in “the coming battle.” Few people seriously engaged in critical information studies would necessarily jump to the conclusion that defense of faculty IP rights can serve as a core strategy for combatting informationalism,⁸ but the real issue is the sudden swiftness with which Noble’s informatic struggle seems to have opened and closed. If academic informationalization isn’t just another Hundred Days’ War, then what is it? These chronological problems result from the decision to employ a “commodification-of-instruction” heuristic to the exclusion of a heuristic featuring the casualization-of-instruction. By naming technologization as the key measure of informatic instructional delivery, Noble dates instructional transformation as a recent second wave, one which follows the 1980s commodification of research, one which is only happening “now” and which can be averted, even one which by 1998 may already have been averted.

But if casualization and not technologization is understood as the key measure of informatic instruction, we see a far more plausible chronology beginning much earlier—in the 1960s, first observed circa 1968, and continuously unfolding in a process of steady implementation, current commitment, and with no end in sight. Noble’s history of university informatics essentially recapitulates the two-century transition in manufacturing modes of production (from artisanal production to industrialization to post-fordism) but compresses that narrative into just two decades, as if university knowledge work were primarily artisanal before 1980 and primarily industrialized thereafter. This is already problematic: university knowledge

work may remain artisanal in certain sectors, but it was also in many other sectors enormously industrialized—especially in the sciences—much earlier. Rather than viewing this transformation as relatively smooth and uniform, it might be better to follow Virno, for example, who sees informationalization not as determining a single “compulsory mode of production” but as supporting a radically uneven terrain of work practice, preserving “myriad distinct” productive modes, serving as an umbrella “under which is represented the entire history of labor” in synchronic form, “as if at a world’s fair” (18-19). (Indeed, this was also Marx’s observation in *Capital*, that many modes of production exist side by side.) Stitching Virno’s understanding together with the “taxonomy of teacher work” offered by Stanley Aronowitz in the *The Jobless Future*, we recognize a plausible portrait of our own academy, in which some researchers work in entrepreneurial and corporate modes of production and others produce artisanally, but these pockets of “entrepreneurial,” “industrial,” and “artisanal” practice are inescapably conditioned by the umbrella presence of the contingent labor of graduate students and former graduate students working on a subfaculty basis.

One good way to make sense of the “commodification of teaching” narrative, then, is to approach it as a narrative about the informationalization of academic labor by the sector of academic labor that has been least informationalized. That is: while the tenured faculty (what remains of it) are increasingly becoming what Gary Rhoades terms “managed professionals,” which is to say increasingly subordinated to the corporate values, ease of command, and bottom line of the management desktop, the degree to which this informational transformation of the tenure stream has been accomplished is very limited.⁹ The degree to which the tenured now present their labor to management in “the mode of information” presents only a narrow ledge of understanding regarding the fully-informationalized working reality of contingent academic labor. As tenurable faculty labor moves toward increasing subordination to management, lower pay, and so forth—toward “proletarianization”—it is possible that they will come to better understand that the degradation of their own work is systematically related to the super-degradation of the contingent workers teaching in the same classrooms. But insofar as there is now, and will likely remain, a very large gap between the work experience of the flexible and the tenured: we might be pressed to conclude that what remains of “artisanal” faculty practice since 1970 has—at least in part—been preserved by the compliance of the tenured with management’s development of a second tier of labor.

Certainly that sense of faculty complicity drives much of the graduate-employee labor discourse, which is to say, the discourse of the most vocal segment of those subjected to the informatic logic of higher education. Graduate students rightly feel that their mentors, frequently the direct supervisors of their work, owe them something more structurally significant than moth-eaten advice about “how to do well” in the job search. One of the reasons that graduate employees are so vocal is because the transformation of graduate education accomplished by the three-decade conversion of the university to a center of capital accumulation needs to be viewed as a profound form of “employer sabotage”—most graduate employees find that their doctorate does not represent the beginning but instead the end of a long teaching career: as I’ve observed in another venue, the “award” of the doctoral degree increasingly represents a disqualification from teaching for someone who has already been teaching for a decade or more. In the course of re-imagining the graduate student as a source of informationalized labor, the academy has increasingly evacuated the professional-certification component of the doctoral degree (the degree plays a key role in the way professionals maintain a monopoly on professional labor; however, now that work formerly done by persons holding the degree is done by persons studying for the degree, the degree itself no longer represents entrance into the profession). The consequence of this evacuation is that the old Fordist sense of the doctoral recipient as the “product” of graduate education has little meaning—instead, the degree holder must now be understood in systemic terms as the waste product of graduate education—not merely “disposable,” but that which must be disposed of for the constantly-churning system of continuously-replaced student labor to function properly (“Waste Product” 87-89).

In pushing beyond the perspective of the least-informationalized (professorial) sector to the most-

informationalized (graduate-employee and adjunct) sector of faculty work, we have multiplied the informatic constituency three- or four-fold. So one way of going on with an analysis of the “information university” is to press at the understanding that it is not workerless, but filled with workers, most of whom will never be so lucky as to have the problems of the tenured. Another way of going on from here might be to use the steady increase of a super-exploited labor pool to press quite hard at the shared fantasy by the tenured faculty and the administration regarding technology as a magical source of accumulation in the information university: as Tessa Morris-Suzuki and others have shown, the general failure of the capitalist fantasy that automated production can create value largely continues to hold under information capitalism (Suzuki 1997a & b; Schiller; Caffentzis). When only a few information capitalists have deployed a particular “labor-saving” technology, the rate of profit rises; but as technological deployment evens out, the rate of profit sharply falls. Because the profit comes from the uneven deployment of technology, and not technology per se, the falling profits associated with increasing technological equilibrium lead even information capitalists back to the fundamental source of value, the exploitation of living labor.

In university terms, the super-exploited informatic labor of its ever-growing contingent workforce (and not “information technology”) is a major source of the value that the university accumulates as capital. In the higher education teaching force, nearly all of this contingent labor has passed through the system of graduate education, which suggests that graduate students and former graduate students must become visible as doubly exploited, first, in the super-exploitation of laboring contingently, but in a second, silent exploitation: insofar as their “education” no longer leads to employment but is itself that employment and is therefore continuously evacuated by increasing quantities of “teacher training” and other duties, so that something that counts as “graduate education” is stolen from them and something else is substituted, something that contributes to the university’s direct accumulation.

1 So it seems worthwhile at this juncture to insist that the higher-ed commodification critique be more rigorously articulated to the standpoint, circumstances and experience of living labor. In looking at “commodified education” from a materialist point of view: one key point must be that the production of education in the commodity form necessarily implies the creation of both a commodity and surplus value. The predominant line of thought tends toward addressing the characteristics of the education commodity while ignoring the intrinsically related and equally important radical increase in the university’s collection of surplus value, an increase drawn in most institutional circumstances primarily from the labor of women and young people (students, both graduate and undergraduate).¹⁰ Emphasizing the degradation of the “educational and research product” in commodity form can have the effect of obscuring an underlying reality that in some ways can be more directly described as a measurable increase in exploitation.

The point here is not the commodity form and the standpoint of living labor are rival or mutually exclusive starting points for an analysis of education capitalism.¹¹ The issue is that analyses of the commodity form that address only “the degradation of the education and research product”(i.e., tend toward the adoption of a consumer standpoint) fall short of addressing education capitalism as a system reliant upon the exploitive extraction of labor for the creation of surplus value. If Paul Smith is right that “the commodity is still the hieroglyph,” and remains “a privileged place” for analysis, I think it is equally worth emphasizing, with Smith himself, and ultimately with David Noble as well: “if this commodity could speak, part of what it would proffer is a memory of the process of the extraction of labor and the production of surplus value” (Smith 57). Which is to say that our motivation for opposing the commodification of education can never be only the degree to which commodified education is “better or worse” than noncommodified education, but the inextricably associated question, of the degree to which commodification represents the increased exploitation of living labor.

The New Student Movements, Mental Labor and the Class Struggle

And trust me, it’s a lot more fun reading a book about youth in the workplace than

actually experiencing it. —Kate Giammarise, sophomore, University of Pittsburgh

One way of getting into the undergraduate experience is to ask how teaching in the mode of information affects their learning: i.e., if it sucks to be a disposable teacher, what does it mean to be taught by this “sayonara faculty,” the soon-to-be-disposed-of cheap teachers laboring in the informatic mode? After all: this is a system that takes its most experienced teachers, graduate students who have taught eight years or more, and fires them, replacing them with brand new “teachers” who have no experience at all. The experienced teachers then go to work “in industry,” while every year thousands of inexperienced first-year graduate students walk into freshman classrooms with nervous grins on their faces. We could begin by asking whether it is a form of “employer sabotage” when by far the majority of college teaching is done by persons who will never hold a Ph.D. or do not have an active research agenda, and many of whose scholarly ambitions may have terminated in a sense of frustration, failure or disappointment. Or we might try to get at the structure of feeling sustaining these college teachers and ask what convictions and behaviors are being transmitted to undergraduates in their first two years by persons whose experience in graduate school has taught them to love lifelong learning more than wages, who do not expect their employer to provide benefits, who are grateful to work at the university, who do not generally have or expect any meaningful control over the workplace, who may feel that they “deserve” their fate at \$16,000/year and so forth. It is not at all uncommon for a person who believes herself to have “failed on the academic job market” to base her pedagogy on “what you need to do to get a job.”

But perhaps the undergraduate student’s experience is not only tied to the experience of graduate students and former graduate students along this essentializing binary of “teacher and student”—can’t we also get at the ways that the undergraduate experience is very much like the graduate experience, on a vector of likeness, “student and student”? After all, the “young people” that teach contingently (21-38; by the early 1990s, the NCES reports that the average age of the recipient of an academic first full-time job was 39) are in most cases near to the age of the young people people being taught by them (average age of the U.S. college student=2 years: nearly half of all undergraduates are over 25). The undergraduate’s always-lengthening “time in school” is increasingly a term of service as a worker, commonly a flex worker: the majority of college students work while in school; more than half work a full-time equivalent (35 hours or more), often however without the benefits associated with full-time employment. Many work directly for the university; in many other cases the university “assists private employers” in finding student labor, creating corporate-university partnerships founded on uniting “scholarships” with the university’s assistance in finding students to work, as at my institution, 20 hours per week in five four-hour shifts beginning at midnight. In contexts like these, the university’s role regarding the employment prospects of youth is no longer merely that of a space of socially-supported leisure consequent upon the “warehousing” of “surplus labor” for future full-time employment.

Instead, the university’s role is now to accumulate value extracted from student labor in several ways: as direct employer, as purveyor of the temp services of enrolled students to nearby corporations, and—in no particular hurry—also, eventually, to provide some degreeholding graduates trained and socialized to deliver their labor in the mode of information. Once we recognize that the categories of “student” and “worker” increasingly overlap, we start to have a way to add to our already-developed understanding of education as an ideological apparatus vis-à-vis students (i.e. what Bowles & Gintis term “the people production process”[53]). In the context of massive student employment, we cannot restrict analysis to the ideological questions of curriculum and the content of knowledge production (though these questions are vital) or even the direct repression of teacher labor in the industrialization of knowledge production. Once we feature the labor of the student centrally, it is possible to make different sorts of inquiries and have different hypotheses.

For instance: why shouldn’t we expect to find the organic intellectuals of academic informationalism in the student body (and not among the professoriate), for the simple reason that it is really the students, graduate and undergraduate, who labor informationally? While so many of the professoriate are willing to

see themselves as “information vendors,” and use their unions to “defend ‘their’ intellectual property rights,” it is not clear that this position makes them intellectuals organic to information work. (To the contrary, it seems that the professoriate has tended more toward providing intellectuals organic to information capitalism—the defense of intellectual “property rights” by tenured faculty is more like the artisan-capitalist Duncan Phyfe than Paolo Freire.)

We might in this connection devote more consideration to questions raised by the emergence of the student anti-sweatshop movement: it is, among other things, obviously a sabotage of the corporate university’s regime of accumulation. And rather than see this phenomenon as evidence of professorial intellectual leadership (“at last, the young people are listening to us again”) or the resurgence of an earlier movement culture, what would happen if we saw this intellectual activity as emerging from the increasingly contingent material experience of the North American “youth” formation? And if this intellectual activity is indeed at least partially symptomatic, perhaps we can ask this question: is not the focus on the sweatshop an indicator of a student movement that also wants to be a labor movement?

Rather than forge an alliance “between students and labor,” what would a movement based in the self-consciousness of students as labor look like? If the anti-sweatshop movement were to recognize its symptom as such, what would it do next? It is already a subjectivity articulated to proletarian struggle elsewhere on the planet, albeit mediated by a notion that the struggle is “for” others and “really” over there: how much more of its potential might the anti-sweatshop movement realize if it incorporated an activism against the flexible dominion of the university managers more locally?

A movement based in the recognition that under information capitalism the term “student” names a category of worker, returns to compelling questions such as: what is education for? Or: what is the difference between knowing and acquiring information?

We might even ask, what would an information socialism look like, especially when we understand that the dissemination of information technology and “access to higher education” will not automatically produce it? Over the past 30 years, the expansion of the higher education franchise has incorporated a steadily larger segment of the U.S. population, but evidently with the overall effect of increasing economic inequalities: NCES data strongly suggests that the increased “access” to education between 1970 and the present has widened the earnings gap between the more and less educated, not by increasing the earnings of the educated (which have declined), but by slashing the incomes of the less educated even more (2000: Table 23-1).¹² One way, therefore, of reading the incorporation of larger class fractions into “higher education” is to suggest that it has produced new economic penalties for staying out of the education regime or that the place of the university in the informational transformation is substantial enough to help economically organize the lives even of that minority who have no direct connection to it.¹³

A student-labor movement might provide a standpoint from which to explode the fantasies that emanate from attempting to resolve the contradictions of capitalism with providing “access to capital.” Regardless of whether information is construed as economic or cultural capital, it seems clear that providing student laborers with “access to information capital” is no substitute for actual education: as Henry Adams wrote, “Nothing in education is so astonishing as the amount of ignorance it accumulates in the form of inert facts.” Obviously, anything that counts as “actual education” will involve devoting labor-time to study, to “leisure activities” such as sport and listening to concertos, and not submitting to the in-formatting of vocational instruction. But information capitalism’s hostility to the devotion of student labor-time to study and to “leisure” is not merely a consumer ripoff (information download as ersatz education) but the class struggle itself, an organized “employer sabotage” of worker consciousness, a programmatic obsolescence by the credit hour, substituting the lifelong drudgery of perpetual training for leisure, enjoyment, and free mental activity. The struggle over higher education is not a struggle over the

“distribution of cultural capital,” but a struggle to contain, divide, and divert the subject of social transformation.

If we are in a moment where information is the ideal commodity, characterized by a form of the work process in which “the student” is the most characteristic worker, should we not expect the demand of the student to emerge organically as the foundational demand of labor at this time? If we accepted the not-capitalism specific to “the student” as our own not-capitalism, a more general and generalizable not-capitalism, wouldn’t it look something like a refusal to work in the informatic mode? This would naturally be a variant on the demands of the Italian autonomy, rather than working without income, to have an income without work. And in making such a demand, are we not making the demand of the student, simply to be allowed to be a student? To have years to study, to do mental labor outside of the regime of accumulation? And in opposing a lifetime of study, sport, enjoyment and leisure to the regime of “lifelong training,” we might find the authentic demand of the flexible: under a socialist informatics, laboring in the mode of information will invite persons to that joy in their muscular and synaptic efforts that capital commands them to ape.

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Notes

1 Not all readers will be aware that the term "EMO" is already in use on Wall Street, describing for-profit education vendors such as Sylvan and Phoenix. This usage does not discriminate between higher, secondary, and vocational education, so long as the organizational structure enables investors to collect profits from student fees, licensing, teacher work, and so forth. In this essay I prefer the term Randy Martin's term "managed university," which characterizes the subordination of higher education more generally to an administrative class aggressively pursuing the "corporate ideal" (Barrow). The non-profit university cannot directly transfer wealth to investors in the form of profit, but the "education organization" managed on the corporate ideal can and does accumulate wealth in the form of buildings, grounds, books, endowment and the like. This is to say that Wall Street's designation EMO describes an education organization managed for profit; the "managed university" describes higher education institutions managed for accumulation more generally. Many readers may be willing to grant that distinguishing between profit-taking and accumulation is in this context a distinction that makes very little difference, as the president of the University of Florida indicated when he confessed, "We have taken the great leap forward and said: 'Let's pretend we're a corporation.'" (Steck & Zweig 297).

2 See for example the "1999 National Student Satisfaction Report," conducted by Noel-Levitz, a higher education consulting firm and subsidiary of the USA Group, the major education lender (which in 2000 merged with Sallie Mae). The report claims to reflect survey data from over half a million students at nearly 900 institutions. The survey is evidently based on the firm's trademarked "Student Satisfaction Inventory," which is primarily used by client educators to "assess client [student] satisfaction," and is not offered here as an authentic record of the student voice. Nonetheless it is clearly an instrument that serves as the authentic record of student voice or "demand" for at least some university administrators, who have been investing heavily in the "parking, food and comfortable living quarters" that Noel-Levitz claims are the top issues for students, while continuing to divert funding from instructional labor, an area in which Noel-Levitz reports continuing high levels of "client satisfaction."

3 Throughout the body of the essay I am quoting from the widely-available online versions of Noble's essays (I use the authoritative versions housed on the UCSD server; see citations below), on the theory that these versions will continue to be more widely circulated than the short hardbound volume from Monthly Review press. Nonetheless, some readers will find citations to the monograph helpful. The claims regarding the "second phase" of education commodification are found on pp 26-27, and elaborated in the introduction (x), and page 37: "For most of the last two decades this transformation has centered upon the research function of the universities. But it has now [!] shifted to the instructional function." In his extremely persuasive discussion of the relationship between correspondence schools at the turn of the last century and distance education, Noble associates the correspondence movement with the emergence of a "casualized workforce of 'readers' who worked part-time and were paid on a piece-work basis per lesson or exam (roughly twenty cents per lesson in the 1920s). Many firms preferred 'sub-professional' personnel, particularly untrained older women, for routine grading. These people often worked under sweatshop conditions, having to deliver a high volume of lessons in order to make a living, and were unable therefore to manage more than a perfunctory pedagogical performance." (9) My quarrel is obviously not with Noble's historical observation here, or with his claim that more distance education will mean more deskilling of this kind, but with his exclusive association of commodification and deskilling with technology. The university has already an established preference for a gendered and 'sub-professional' work force apart from distance education or any potential future expansion of it. The

massive casualized work force already established in the managed university seems to me to call for additional analysis in the vein of Harry Braverman’s work (in which office technology is seen as called forth to serve already-existing transformations in the management of office labor). That is: must we not see the technologization represented by online learning as at least partially the result of a rationalized (“scientifically managed”), casualized and deskilled work force, rather than its “cause”?

4 It’s worth underscoring that my divergence from Noble is overall nonetheless primarily one of emphasis: he focuses on distance education, technologization, and the tenure stream, and I focus on casualization and the work of students and other contingent labor. Far more important than any differences, however, is the wide shared ground represented by the fact that we both fundamentally approach academic work with a labor theory of value, by contrast to the predominant vision aptly described by Dan Schiller as an “information exceptionalism” that attempts to substitute a “knowledge theory of value”(Schiller 1997:105-106). As indicated in detail above, I wish to associate myself firmly with his analysis of education commodification more generally and with his indispensable ramification of that analysis for the traditional faculty.

5 This is in part why Terranova argues for getting beyond the debates about who constitutes a “knowledge class” and “concentrating instead on ‘labor’”(41). In this context “labor” refers to Lazzarato’s notion of “immaterial labor,” those activities of the eyes, hands, speech organs and synapses of a “mass intellectuality”—channel-changing, verbal invention, mouse-clicking, fandom, opinion-formation and opinion-sharing, etc—that are “not normally recognized” as labor, but which can be described as “knowledge work” yet one divorced from “the concept of creativity as an expression of ‘individuality’ or as the patrimony of the ‘superior’ classes, and which are instead collectively performed by a creative social subjectivity (Lazzarato 133-134; 145-146). Terranova’s understanding that the production of Internet culture absorbs “massive amounts” of such labor, only some of which is “hypercompensated by the capricious logic of venture capitalism”(48), can be partially mapped onto our understanding of higher education and the labor-power it composes. For one thing, it is quite clear that much of the “free labor” that goes into creating higher education culture, such as the work of “playing” basketball, cheerleading, blowing a horn in the marching band, attending the game—even checking the box scores—can be harvested by university capital as surplus value: the university valorizes the uncompensated labor of the editor of the student newspaper and its “interns” and “service learners,” together with the “work-study” efforts of its student dining-hall workers, just as easily as it valorizes the radically undercompensated labor of the faculty and graduate students editing a scholarly journal, or its janitors and librarians. For another: it seems equally evident that any movement likely to transform academic capitalism at the level of structure will have to unfold in the consciousness and muscles of an insurrectionary mass intellectuality of all of the fractions performing this un- and under-compensated labor, and can hardly flow from one segment alone, or one segment “leading” another.

6 See Andrew Ross’s description of the way that universities, digital industry and other employers of “mental labor” have succeeded in interpellating intellectual workers more generally with the “bohemian” ideology previously reserved for artistic occupations: large new sectors of intellectual labor have proved willing to accept not merely the exploitation of wage slavery but the super-exploitation of the artist, in part because the characteristics of casual employment (long and irregular hours, debt subsidy, moonlighting, the substitution of reputation for a wage, casual workplace ethos, etc) can be so easily associated with the popular understanding of normative rewards for “creative” endeavor.

7 As Barrow among many others observes, higher education’s continuously enlarging contributions to personnel “training and the provision of a scientific-technical infrastructure” have historically been the two areas in which the “costs of private production” under advanced capitalism have been most successfully displaced onto society (8).

8 This is not to suggest that there aren't circumstances where the notion of intellectual property rights, as in the struggle to resist the exploitation of indigenous knowledges, can't be mobilized with great tactical effectiveness (Coombs).

9 Indeed, despite efforts to reverse the Yeshiva decision, a recent case before the NLRB involving a small Catholic college in Connecticut demonstrates the degree to which the faculty function can be read before the law not so much as that of "managed professionals" as that of "professional managers"(who can be denied the right to bargain collectively).

10 For an alternate view in the materialist tradition (of education as a "fictitious commodity"), see Noble p 3.

11 Enrique Dussel continues to argue, from a standpoint including textual scholarship regarding what he views as the movement of Marx's intention in the project of *Capital*, that living labor represents a more valid "starting point" for the critique of capitalism than analysis of the commodity form. Certainly commodification critique has in many instances been subject to incorporation, and nowhere more so than in the popular culture of the academy's liberal elite. Nonetheless, rather than attempting to describe one or the other as the "logical starting point," the position offered here is that critique should make more of an effort to sketch the relation between what Mosely, by analogy to Banaji, suggests is something more like a "double starting point"(Mosely 7).

12 The data on this question varies by gender: in all four groupings of annual earnings (edu. 9-11, high school, some college, B.A., or more), male incomes have dropped and female earnings have risen. The female earnings growth varies little by level of education, and is modest in relation to the gendered earnings gap, average female income at all education levels remaining well below average male earnings (evidently at least in partial relation to the exploitive feminization of occupation categories, such as nursing and teaching). In constant 1999 dollars: for women educated through grades 9-11, the 1970 earnings were 8640 and the 1998 earnings were (10638): high school, 14681 (15356); some college 17570 (20074); B.A. or higher 26772 (30774). By contrast, the decline in male earnings is substantial in all categories except B.A. or more, where it is only about ten percent: 9-11, 29377 (17976); high school, 35553 (25864); some college, 38794 (30124); B.A. or higher, 44,031 (40163). Of course there are many other factors: especially the changing composition of the workforce, class-stratified patterns of dual-income households, and the dramatic change in the relative size of the groups represented by various "education levels." Additionally, the years devoted to "some college" and "B.A. or higher" have increased, and the very nature of "higher education" has been transformed to involve very different activities between 1970 and 1998. Above all, this data needs to be read in connection with the political work of feminism. Nonetheless, all caveats considered: one of the more dramatic movements of the data is to suggest a growing economic penalty for remaining outside of the work regime represented by "higher education."

13 Some of the observations in this and a preceding paragraph regarding the work experience of North American "youth" were previously framed in a book chapter, "Cultural Capitalism and the James Formation," in Susan Griffin, ed. *Henry James Goes to the Movies* (Lexington: U Kentucky P, 2001).

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