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THE INSTITUTIONAL TRANSFORMATION OF UNIVERSITIES IN THE ERA OF DIGITAL INFORMATION

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Introduction: a digital revolution?

Although the incorporation of digital information and communication technologies (hereafter: digital ICTs) into higher education has proceeded unevenly from a global perspective, it is fair to say that there is scarcely a dimension of academic life in advanced industrial countries that has not been profoundly affected by digital media over the past quarter century.[1]

The idea of a digital revolution in academic communication is a powerful one, but an idea that also deserves careful, critical examination. Even if we conclude that digital ICTs *have* revolutionized the practices of making and circulating academic knowledge, we must historicize their impact by looking closely at the institutions they have transformed in order to understand better where digital ICTs might take us in the future, and how we citizens of the three estates of the modern university – students, faculty, and administrators – can work to shape future institutional forms. I hope to make a contribution to that project of greater historical and institutional contextualization in this chapter.

The western university as historical, institutional assemblage

Contemporary western universities are complex institutional assemblages. Their complexity is, in no small part, a comment on their long and generally successful course of historical development. At the beginning, matters were much simpler. Universities essentially began as a contractual institution that mediated an exchange of expertise between two social estates: students and masters. The university takes its name from the medieval *universitas* (meaning "the whole"), a kind of general corporation used by students and masters to contract reciprocal teaching and learning obligations with one another.[2] Although principally aristocratic, the ranks of students and masters were also

open to talented scions from the wealthy and educated middle classes. Early university corporations were at first very fluid, forming and dissolving repeatedly, but eventually some became more institutionally durable, invested with special privileges by secular and religious authorities, forming the basis of the first European universities such as those in Bologna (1088) and Paris (*c.* 1160).

These early universities may have offered scholarship, teaching, even fees and student organizations, but they did not have campuses to preserve, scientific instrumentaria to manage, or nations to build. Although they were in the process of developing internal political hierarchies, bureaucratic academic administration in its modern sense remained foreign to their contractual basis and purpose. But as early universities became increasingly institutionalized as organizations of higher education across their first few centuries of existence, they gained ever more purposes. Still within the medieval period, universities were tied to projects of religious and secular development, to spiritual guidance and mundane governance, to the reproduction and perfection of national culture.

With regard to this last point, in a certain sense, universities were as much crucibles of modern national thinking and belonging as Benedict Anderson's novels and newspapers.[3] Among the key forerunners of the modern usage of the term "nation" were the linguistic and territorial corporations of foreign students at medieval European universities. By the eighteenth century, European universities were firmly established as loci of social reproduction for both aristocrats and the educated middle classes, and as gateways to the most prestigious professions, such as law, medicine, and state administration.[4] As the European middle classes began to challenge aristocracies for political dominance, universities emerged as key sites for the production and circulation of middle-class discourses on ethno-national culture. Humboldt's famous University of Berlin (1810) is a good example of this trend. Although Humboldt's institutional reforms have rightly been recalled as laying the groundwork for the modern research university and its ethics of independent scholarship, the University of Berlin was meant, above all, to provide a new symbol and institution of German national culture in response to Napoleon's closure of German universities in the Rhineland.

Along the way, Humboldt's reforms decisively transformed scholarly activity within universities. On the one hand, by moving the arts or philosophical faculty (the forerunner of contemporary arts and sciences faculties) to the political center of the university, the Humboldtian university radically altered the kinds of knowledge that universities produced, and stimulated the development of a panoply of new humanistic and scientific disciplines across the nineteenth century. On the other hand, the research seminar system pioneered by Schleiermacher and others helped provide a flexible, pedagogical basis for the growth of communities of research scholars, and for greater specialization in their languages and techniques of scholarship. In many ways, the contractual basis of the early *universitas* was maintained in spirit in the Humboldtian seminar system, with the research university imagined as an assemblage of dozens, if not hundreds, of small-scale groupings of students and masters working collectively on advanced, specialized topics.

This essentially artisanal basis for university research began to change in the latter half of the nineteenth century, however, in connection with the rise of laboratory science and experimentation, and with greater state investment in those sciences deemed to have military and industrial applications (chemistry, physics, engineering, among others). The center of attention and power in research universities gradually shifted from the humanist seminar to the scientific laboratory toward the end of the nineteenth century.[5] In the twentieth century, the adaptation of epistemologies, research methods, and collaborative practices from the laboratory sciences into the human sciences helped to cement a new distinction between the "social sciences" and "humanities."

The late nineteenth century was also the birthplace of modern academic administration. From their historical entanglement with states and churches, universities had long possessed both external and internal administrative hierarchies, and were certainly not strangers to tensions and suspicions between administrators and scholars. But with the institutionalization of an ever-expanding range of tasks – in this respect, universities were victims of their own success as crèches and forges of the social elite – universities became bureaucratically more dispersed and complex organizations, and the ranks of the academic "third estate" of administrators swelled.

The biggest watershed was the post-war period, roughly 1945 to 1960, in which social welfarist statecraft institutionalized mass higher education across the world.[6] This led to a rapid increase in student bodies, to the founding of a wide range of new forms of public universities and community colleges, and to a concomitant expansion of administrative ranks and functions – among the latter, the bureaucratization of admissions, the management of residential campuses including a range of social services (such as healthcare and career advising), and to the administration of new programs of professional training.

Contemporary academic administration involves balancing complex tasks of civil service (especially in Europe and public US universities) and attention to private markets (of investment and capital management, of fundraising and alumnae management). My interviews with US administrators suggest that the latter tasks now increasingly occupy their time and imagination. American university presidents are now principally fundraisers, and even deans, associate deans, and in some cases department chairs are expected to dedicate a significant amount of time and energy to raising private capital for endowments and other expenditures. Neoliberal academic governance, whether in its technocratic or market-centered form, extends the late nineteenth-century idea(l) that universities should function as crucibles for the generation of epistemic artifacts to the present purposes of stimulating private, commercial interests, or of enriching and empowering states in the global knowledge economy.

Neoliberal governance should thus not be seen as a novel institutional regime, but rather as the selective intensification of longer-term processes. Nonetheless, neoliberal governance has been immensely controversial in universities, principally among faculty.[7] The dominant critical narrative is that neoliberal university reform seeks to dissipate organizational and collegial autonomy in order to better saturate

universities with market-oriented principles (knowledge as commodity, faculty as wage labor, administration as management, student body as consumer public, university as marketplace).

The reason that critical narratives are particularly intuitive among faculty is, I would argue, a reflection of the fact that, among the three estates of the university (students, faculty, administrators), the faculty is the estate that has experienced the deepest erosion of autonomy under the current reforms. Students, one could argue, stand to enhance their social power with their new image as sovereign consumers, and the re-imagination of the university as a kind of for-profit corporation run by profit-minded corporate managers has helped to cement the political hegemony of administrators. At the same time, faculty have been subjected to a neoliberal "audit culture"[8] that, taken in sum, demonstrably tends to increase faculty workloads while degrading faculty autonomy. Neoliberal reforms undermine the traditional estate power of the faculty, criticizing its aristocratic pretensions, a tactic that is especially appealing in the populist political context of the United States. With a rise in criticism of the academic tenure system, combined with a growing proportion of adjunct faculty in the professoriate, many fear a future university of two estates, where faculty are proletarianized contract educators dominated by administrator–managers and by student–consumers. Of course, this situation is already a reality in some organizations. But it is a drastically uneven process. We must also bear in mind that elite research universities have never been wealthier and more centralized in global economies of higher education, that elite faculty have never been more mobile or cosmopolitan a caste, and that scholarly autonomy remains a chief incentive for retaining top faculty.

This genealogy of the institutions of the contemporary research university is all too brief, but it hopefully serves as an adequate prologue to the story of the institutionalization of digital ICTs in higher education, to which I now turn in greater detail.

Digital transformations and trends I: Academic research and publication

No institutional transformation comes without its sense of loss and anxiety about what the future will bring, and the widespread institutionalization of digital ICTs in universities since the 1980s has been no exception. But digital ICTs have offered academic research and scholarship such an abundance of new informational tools and conduits, and so many new modes of connectivity, that one could argue that the sense of loss has largely been eclipsed.

Beginning with personal computers in the 1980s, email in the early 1990s, and the popularization of the internet via web browsers in the mid-1990s, within the space of a generation, digital ICTs have transformed the scale and speed of academic research practices in unprecedented ways. Email has permitted the real-time coordination of research collaboration and communication across the world. The ongoing digitalization of library archives permits online access to journals and books and search tools that enhance our scholarly ability to locate and engage other scholarship and primary materials relevant to our research projects. Whole book projects are conceived and

completed now without setting foot in the physical space of library, or, indeed, leaving the comfort of one's office. Today's common wisdom is that the paper economy of publication is destined to become a secondary economy to the circulation of digital text files read on computers, laptops, or portable document readers. In some fields, this has already happened. An administrator at the University of Chicago recently commented to me that their sciences library has become a virtual ghost town.

It is these same institutional and practical trends that engender a minoritarian discourse of concern and occasional doomsaying about the future of academic knowledge. Alongside the virtues of the institutionalization of email as a primary mode of academic communication, one must now wade through masses of often-irrelevant emails (organizational spam), such that managing correspondence is an increasingly time-consuming task. Moreover, social expectations for access and response time have changed. Students, colleagues, and administrators may be irritated if emails linger in inboxes for several days, even several hours, without response. Queries that would have warranted neither a phone call nor a typed letter in bygone days are often sent out quickly, with little thought, by those of us who spend hours a day logged into our email accounts. The news journalists whose digital media activities I am currently studying sometimes speak of feeling an obsessive, drug-like dependency upon electronic communications, and one can clearly see analogies of this addictiveness to fast communication in academic life as well. We are not quite at the point of a "slow communication movement"[9] in the academy, but concerns about informational overload and the rising superficiality and tolerance for error in scholarly exchange are frequently expressed and attributed to the new pressures of digital ICTs.

Perhaps the deepest contemporary challenges from digital ICTs face the academic publication industry, which, according to some insiders such as Harvard University Press's Lindsay Waters,[10] is nearing unsustainability because its journal- and book-driven financial model has been undermined by a perfect storm of digitally related developments, including the rise of digital wholesalers such as *amazon.com*, by *Google books* and the easy recirculation of digital text files, by cuts to library acquisitions budgets driven by the increasing commercial monopolization of journal publication, and by a student reading culture that finds print media increasingly foreign. As in other areas of publishing, such as newspapers, the rise of online tools and conduits has made it increasingly difficult to stabilize and control published documents as commodity forms.

Digital transformations and trends II: Academic teaching and sociability

Just as in research and publication, digital ICTs offer a wide range of new useful tools for academic teaching and advising. To cite just a few of the more notable: *PowerPoint* and the internet offer teachers new multimedia capabilities for presentation. Social networking software, wikis and blogs have been utilized in some classrooms and by some university departments for dialogue, collaborative research, and community-building.[11] Email enhances the capacity for real-time communications with students

and advisees. Online blackboard systems have transformed library course reserves, making documents easily available to students from the comfort of their dorm rooms.

Yet, recall the emptied library as a symbol of the contemporary university. Although surely unintentionally, digital ICTs destabilize the local communitarianism of traditional campus life through their accelerated temporality of productivity, through the individualizing property of their interfaces, and through their immense capacity to translocalize real-time academic communication.

Of course, the trends of translocalization and academic specialization and compartmentalization of knowledge have been centuries in development. My point is simply that digital ICTs reinforce, and in some cases amplify, these tendencies. Despite much celebration of new modes of digital connectivity, the institutional and practical realities of the digitalization of university campuses means that these new modes of connectivity have not always enhanced local university community and collegial life. Indeed, reports of distracted, unengaged students, faculty, and administrators abound. It is not to say that any of them are working less hard or attentively than before – if anything, the opposite is true. But their attentions are frequently elsewhere, drawn by digital ICTs into different scales of connectivity (and different kinds of mobility), that make university sociability at once more hectic and emptier than in previous generations. For example, the laptop has created the possibility of moving one's academic office to a café or to home, generating emptied departments across the world. Blackberries and cellphones have become routine distractions and disruptions in the institutionalized venues of the university sociability that remain (colloquia, sherry hours, departmental meetings, classrooms, office hours). Amidst all the noise of digital communications, it is hard to find signal. One university administrator explained to me that his university had experimented with various forms of digital media to inform students about events on campus, but found them already so inundated by email and other kinds of digital news alerts that they had developed the habit of simply ignoring administrative emails as a class of messages. He noted, with appreciative irony, that his administration eventually concluded that the most efficacious form of messaging proved to be putting up posters.

Digital transformations and trends III: Academic administration

Academic administrators, many of them former faculty themselves, express appreciation for the research and organizational efficiencies that computerization and digital data archives have made possible. Data can be more easily accessible and flexibly utilized under digital conditions, and tasks that previously needed large support staffs (course registration, for example) have been streamlined by online user interfaces. At the same time, administrators note that the essential need for information records and archiving has not changed and, if anything, data demands have risen in the digital era, which has necessitated large investments in digital information management and security.

One administrator, a dean I recently interviewed, connected the new abundance and accessibility of digital data archives directly to what he called a systemic tendency toward the overproduction, especially the overanalysis, of information:

> The great thing about computers is that you now have all of this data at your disposal and it's easy to search and to organize it. The problem is that people generate all of these reports now and to a certain extent it's overkill. Generating reports keeps people busy and it's one way that people demonstrate they are working hard and committed to the institution. But then you sit with a desk full of reports and you wonder: How much information do I really need to reach a decision?

What's particularly interesting about this statement is that it runs counter to our usual sense as faculty that the rising expectations for evaluation and self-evaluation, characteristic of contemporary "audit culture," are being driven in some conscious way by administrators. That administrators themselves can feel hemmed in by, and alienated from, digital "overproduction" is something we consider much less often. This should remind us of Marx's argument, in his critique of capital, that alienation is a function of rising social mediation itself, not driven necessarily by any particular group of agents. For all of the emancipatory moments and empowering aspects we associate with digital communication and information, it remains true that it catalyzes alienation just as commonly.

This is not say that we should let administrative audit culture off the hook. Whether intentional or not, the erosion of faculty autonomy is a clear effect of administrative audit culture and its spiraling techniques of evaluation from course and peer evaluation to the emergent science of citational bibliometrics.[12] It is fully within the power of administrators to limit the institutionalization of excessive audit mechanisms and, in the interest of restoring the balance of estate powers in the neoliberal university, faculty and students must press them to do so.

Conclusion: remaking academic life and knowledge in the era of digital liberalism

Seen through the lens of institutions, digital ICTs have clearly transformed the communicational and social relations of university life. And most of us would likely agree that the impact of digital ICTs has been, by and large, positive. But we also need to take seriously the political–ideological environment in which the digitalization of university campuses has taken place. Digital ICTs have long been incorporated into that core transformational process of modern liberal society that Raymond Williams once termed "mobile privatization."[13] Yet the most recent generation of digital ICTs emerged in the 1980s, in the specific historical context of economic globalization and resurgent political liberalism. The technical–institutional process of digitalization and the political–institutional process of (neo)liberalism have subsequently often reinforced one another, promoting what are sometimes termed "technolibertarian" social and political dispositions, but which I prefer to call the ideas and ethics of "digital liberalism."[14] Liberalism comes in many forms and many voices, as we know, but their common philosophical traits are the valorization of individual rights, accountabilities, and autonomy; and their reciprocal diminishment of the necessity, even the reality, of

social contingencies, obligations, and relatedness. From my ethnographic sketches, we can see how the technical capacities of digital mediation also can enable greater individual autonomy and a certain evacuation of local forms of sociability.

But, in my view, just like the erosion of faculty autonomy and just like neoliberal reform of higher education more generally, this evacuation of sociability is neither a political or a technological inevitability; it is instead a matter of specific modes of institutionalization, whether democratically determined or not. Technical capacities of digital mediation can reinforce greater physical isolatedness as well as virtual connectivity, senses of alienation as well as emancipation, depending on their particular modes of institutionalization. In looking to the future, we should remind ourselves that the institutional origin of the university was a simple contract between students and teachers to exchange knowledge. Whatever other functions the university has acquired over the centuries, and whatever future functions await it, guaranteeing a positive environment for the production and exchange of expert knowledge must remain *the* central priority of the digitally enabled university of the future.

"Guaranteeing a positive environment" means above all, to my mind, two things: (1) restoring and maintaining a healthy balance of powers and interests between the three estates of the university; and (2) developing digital institutions that value thinking, knowing, communicating, and acting above commercial or governmental objectives.

Challenging the commercialization of academic research as an end-in-itself and challenging technocratic fantasies of retrofitting universities as factories in an equivalently fantasy-laden "global knowledge economy" are, of course, huge political tasks. A more modest and immediate goal would be to encourage our fellow university citizens to explore how we might institutionalize the capacities of digital connectivity in such a way that they can enhance non-marketized modes of exchange. For example, to take again the example of scholarly publication, we should insist that open access, not-for-profit journal and book publishing be the new institutional standard for academic research and communication. Digital open-access publishing software has come a long way in recent years, and the added value of professional editing and design is in most cases negligible compared with the negative effect that the commercialization of academic publishing has had on university library budgets. Since scholars are scarcely compensated for their writing and editorial labor anyway, enriching commercial publishers seems absurd.

Moreover, it is clear that universities need to think more creatively about how digital ICTs can be put to work in ways that extend (rather than evacuate) physical and material practices of sociability. This is not a question of feeling nostalgic for the ethos of a certain mode of traditional campus life that appears to be unraveling in the era of digital liberalism. It is rather the recognition that generating mutual respect and collaboration among the three estates will require a full spectrum of modes of sociability, from the virtual to the material. If we wish to preserve universities as meaningful, local, organizational cultures committed to certain ideals and practices of knowledge, alongside their obvious existence as sprawling markets (better yet: cities) of research, writing, teaching, learning, and administration, then we need to work

actively and thoughtfully against the individualizing, isolating trend of digital liberalism's institutions and interfaces.

Notes

1 This chapter is based upon eight years of historical and participant-observational research on the origins and current transformation of western research universities. More specifically, I interviewed thirty research university administrators over the past five years (ranging from department chairs to presidents) in connection with the themes of this chapter.
2 Hilda de Ridder-Symoens, ed., *A History of the University in Europe*, *Vol. I* (Cambridge, UK: Cambridge University Press), 37.
3 Benedict Anderson, *Imagined Communities* (London: Verso, 1983).
4 Charles E. McClelland, *State, Society and University in Germany, 1700–1914* (Cambridge, UK: Cambridge University Press, 1980), 46–53.
5 Fritz K. Ringer, *The Decline of the German Mandarins* (Cambridge, MA: Harvard University Press, 1969).
6 Hugh Davis Graham and Nancy Diamond, *The Rise of American Research Universities* (Baltimore, MD: Johns Hopkins University Press, 1997).
7 See e.g. Bill Readings, *The University in Ruins* (Cambridge, MA: Harvard University Press, 1996); Sheila Slaughter and Gary Rhoades, *Academic Capitalism and the New Economy* (Baltimore, MD: Johns Hopkins University Press, 2004).
8 Marilyn Strathern, ed., *Audit Cultures* (London: Routledge, 2000).
9 John Freeman, *The Tyranny of Email* (New York: Scribner, 2009).
10 Lindsay Waters, *Enemies of Promise* (Chicago, IL: Prickly Paradigm Press, 2004).
11 See e.g. Kim and Mike Fortun's *The Asthma Files* project, http://xen007.tlc2.uh.edu:8081/asthmafiles
12 Susan Wright, *Measurements and Distortions* (Aarhus: Danish School of Education, 2008).
13 Raymond Williams, *Television* (London: Fontana, 1974), 19.
14 Dominic Boyer, *The Life Informatic* (Ithaca, NY: Cornell University Press, forthcoming).