Are Para-Academic Career Paths about People or Places?
Reflections on Infrastructure as the European Alt-ac

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The field of digital humanities has found itself at the heart of a conflict between shifting practices and static structures as pertains to the creation of knowledge as a form of labor. The collaborative, interdisciplinary nature of the field, along with its disruptive entry into many disciplines and teams with a long tradition of largely textual methodologies, has made it fertile ground for both the development and disaffection of individuals pursuing unique career paths in institutions conceptualized according to distinct classes of academics, administrators, technicians, and librarians they do not neatly fit into. As with digital humanities itself, the move toward giving a voice to such para-academics, and the new forms of implicit and explicit labor contract they inhabit, was clearly recognized in the United States before it came to Europe (if indeed one can say it has come to Europe at all). And, in a further parallel with digital humanities as a field, paths toward the recognition and valorization of these new roles have been very different in Europe than in the United States, both in terms of what nomenclature has emerged, what forces have been harnessed to surface nascent practices, and what actors have wielded the greatest influence over the process. The comparison between European and North American systems is an instructive one, however, as the two approaches—one more person-centric and the other more resonant of labs and facilities—might each potentially learn much from the other’s differently constrained progress.

The American “Alternate Academy”

The fact that the United States has been far ahead of Europe in recognizing and validating the contribution of individuals in hybrid academic–service positions is in part due to the later start of the overall development of digital humanities in Europe, but also to the differing framework conditions that exist for research in Europe as opposed to the United States. By and large, U.S. institutions operate much more independently than European ones; they are influenced far less by national
research and education regulations, national research evaluation systems, or standard researcher contract models. Institutional autonomy greatly eases the mainstreaming of new work paradigms, as empowered individuals within institutions find ways of motivating and embedding new classes of contribution in ways that match local conditions. In particular, the so-called alt-ac movement has revealed much about the breadth of institutional responses, both good and bad, to their changing human capital needs, as well as the motivations, needs, and experiences of the people pursuing hybrid research career roles.

The discourse of the American alt-ac experience was codified by the 2011 online collection of essays #Alt-Academy (Nowiskie), which highlights the breadth of institutional types, motivations, preparations, and experiences, from the liberating to the horrific, that shape the working life of the alt-ac scholar. There are a number of threads within this discourse that can be used to highlight the differences and similarities between the U.S. experience for such professionals and what is now emerging in Europe. According to the documents of this tradition, not only do the individuals choosing or falling into alt-ac positions commonly produce high-impact work outside of traditional disciplines but they also actively seek to bring together areas of knowledge and to innovate within their organizations and networks. Often these individuals write grants to secure their own employment and gravitate toward the tasks of building productive bridges between the silos they sit between, with the nature of the work itself helping them to scope out problems and identify opportunities (Stanton et al.). The fact that such a wide range of individuals and experiences have been able to come together under a common identity is a key indicator of the bottom-up nature of the emergence of this community. Finally, the breadth of the research and perspectives collected under the alt-ac banner illustrates the active and collaborative engagement in these issues by a wide range of institutions like CLIR (Council on Library and Information Resources) and the IMLS (Institute of Museum and Library Services), as well as by university-based programs such as the University of Virginia’s Scholar’s Lab.¹

The European Infrastructure Worker as an Emerging Alt-ac?

If these three characteristics of the U.S.-based alt-ac discourse—the transformational character, the bottom-up development, and the breadth of institutions engaged—can be seen as essential characteristics of the U.S. movement, then Europe can only be said to have experienced partially similar trends. Transformational individuals in unique and sometimes precarious roles do exist, but patterns of institutional engagement are quite different, and perhaps most importantly, no recognizable bottom-up organization and empowerment have occurred among these widely distributed and diverse individuals, who may belong to very different work cultures and indeed speak and work through very different languages.
Curiously, the grassroots discourse of the North American alt-ac is beginning to intersect in Europe with much more staid policy positions, with the effect that top-down imperatives, rather than a critical mass of atomized and marginalized individual experiences, are instigating the emergence of a similar set of professional identities. This inversion is not necessarily obvious at first glance, however. Research on emerging research professions in Europe discusses hybrid academic roles under a wide range of terms, including many permutations of “data-X” roles (Lyon; Swan and Brown), such as the data scientist, data manager, or data librarian; the facilitator (Lankes et al.); the “techie”; or the project manager, the administrator, or the network manager. The prevalence of such terms on both sides of the Atlantic Ocean points toward the convergence mentioned earlier. As varied as the names may be, they all point toward a similar pattern of research engagement: borrowing strongly from the professorial model, but remixing its elements in new combinations or with new elements. Of course, these people and roles have existed for a long time, but at the current moment, when a consolidated view of their work could be so useful and productive, the similarities among their contributions to research are obscured behind the plethora of descriptors used to characterize them.

One terminological point of consolidation that is emerging from this diversity and that engages with the work of these many types of individuals, is infrastructure. Particularly in a North American context, “infrastructure” is still a contested term, as prominent voices such as Tanya Clement and Alan Liu invoke the term to highlight the lack of attention to (or support for) the resources on which DH work is based. In Europe, however, the term is rapidly stabilizing, in large part because the development of infrastructure is currently being driven heavily from the top-down imperative of the massive funding program (soon to enter its ninth multiyear cycle and known as “Horizon Europe”) shared by the EU member states. Since 2006, Europeans have been able to refer to the European Commission’s ESFRI (European Strategy Forum for Research Infrastructures) roadmap for a definition of what is and is not an infrastructure, electing to include “facilities, resources or services . . . associated human resources . . . major equipment or sets of instruments, as well as knowledge-containing resources such as collections, archives and databases. . . . [They may be] ‘single-sited’, ‘distributed’, or ‘virtual’ . . . related to data management, enabling information and communication . . . such as grid, computing, software and middleware” (European Commission).

This definition is inclusive, to the point of seeming more a laundry list than a strategic program, and intentionally so, but it is by no means the only or even the broadest definition of research infrastructure that has been proposed. See for instance, this one, proposed by Tilson, Lyytinen, and Sørensen: “Morphologically, digital infrastructures can be defined as shared, unbounded, heterogeneous, open, and evolving sociotechnical systems comprising an installed base of diverse information technology capabilities and their user, operations, and design communities” (748–49).
These quotations illustrate two important points about the ways in which researchers, managers, and policy makers view and manage the development of infrastructure within the European context, each of which has an impact on the people who populate and support the work going on within research infrastructures. First, there is a clear effort to be broad and to allow infrastructure development (and, dare we say it, funding) to encompass a significant amount of activity emerging from individual research practices, giving space to innovation not possible in institutions with more clearly defined missions, such as universities. Second, the policy language illustrates a struggle to get away from a concrete, bricks-and-mortar view of infrastructure, a move that allows various types of knowledge, its producers, and its external manifestations to be considered under the banner of infrastructure.

It is within this struggle over the implications of discourse that I locate the further terminological transposition from the U.S.-based (alternate) academy—that is, an institution made of people—to the European context of infrastructure as the place where quasi-academic professional pathways are becoming an established norm. Given the pains being taken to extend the concept of infrastructure beyond the realm of machines and buildings, this difference between the United States and Europe might not be seen as a threat to progress in mainstreaming and integrating new skills and careers in a meaningful way into the research ecosystem. But there are key differences inherent in Europe's different emphasis that give pause for concern. Alt-ac as it is known in North America was a bottom-up development, driven and described by practitioners. Infrastructure, however, is seldom if ever fully bottom-up, and the needs of individuals in the system will therefore face greater difficulties finding expression. Furthermore, the idea of an academy aligns with the hierarchies of academic institutions (even while it challenges them). Infrastructure, for all the need and desire that policymakers invest in redefining it, aligns semantically with generic service missions and with the nonacademic. Herein lies a key difference, but also an opportunity for mutual exchange of learning and experiences between the grassroots, person-centric U.S.-based rhetoric and activities and the policy-driven, institutionalized European ones.

Scope of the Problem

When starting from the standpoint of infrastructure, the professional space encompassed by individuals with para-academic career paths in Europe will almost by necessity be broader than that delineated by the term “academy.” The need for research professionals who are both data savvy and have disciplinary training exists across a wide spectrum of institutional and national contexts, as well as within models not bounded by the constraints of any given preexisting system, with the result that individuals with very similar roles are required to work under very different conditions. Although it is not without additional concerns, the fact that DH specialists in Europe can ally themselves (and are, de facto, being allied by the policy
environment) not only with the humanities, library, and computer science colleagues but also with a wider range of data experts is in many ways a potential strength.

This embedding in a wider context and the overall demand for such talent should, in theory, encourage good work conditions and fulfilling roles to be available for workers within infrastructure. The entre/intra-preneurial nature of the alt-ac scholar does have its cost, however, particularly in Europe, because the kind of autonomy gained through self-funding via grants or very distinct job roles can lead also to isolation within the institution, marked by short-term contracts as well as a diminished focus on individual scholarship. In one of the most interesting contributions to the body of work on the alt-ac model, Tom Scheinfeldt writes about the right to have one's work viewed as generative and scholarly—essentially an individual's right to hold authority and agency in an epistemic sense. For Scheinfeldt, giving up the expectation of tenure (the U.S. hallmark of a “real” academic job) did not equate to an admission that his work was unworthy of publication. Indeed, he, like so many of his peers, did work that he felt proved its value in a way that transcended the known norms: “It can't be tenure track or nothing. My work requires a ‘third way.’”

Scheinfeldt's statement highlights one of the most common frustrations of the currently emerging cohort of infrastructure workers: even though their work may be excellent, achieving at times even higher social and professional impact than that of their more traditional peers, the lack of any institutional structure that might recognize their work means that they can be made to feel it is not valued by their institutions or not considered to meet the definition of scholarship. The primary reason for this lack of recognition may be practical, even if it is unsatisfying: the gatekeepers for the traditional organizational power centers do not necessarily control or foster these individuals, in large part because the roles do not map to a known model internally or to any particular responsibilities recognized as such by management. Even libraries in Europe have often resisted this kind of expansion of their remit, not because they see it as irrelevant to their mission, but because to do so would also implicitly ratify certain large and unfunded mandates, such as (for a university library) the preservation of digital research created within the institution. This is by and large not intentional or ill meant, even as it remains a common occurrence in conservative institutions: but it poses a particular threat in Europe, where the nature of the universities as public sector organizations makes them beholden to issues of contract, work rules, and tenure that are anathema to otherwise similar institutions. Infrastructural thinking has yet to arrive at this level, and yet this is where many of the much-needed, highly skilled individuals will come from and is indeed one of the key places where they may be called on to contribute.

What emerges therefore is in part a domain-specific challenge, but one that incorporates a data challenge and a human resource management challenge as well. Infrastructure workers in the humanities become generalists in a world of specialists,
finding themselves in roles where they are expected to continually develop their skills and grow in response to changing institutional needs and changing technologies; however, they are not necessarily expected to mature into leadership roles, which in the current systems can be rare, undefined, or require very different qualifications from those people who might report to a particular leader or manager. This raises significant issues about the notion of “psychological contract fulfillment”; that is, an employee’s beliefs regarding the reciprocal obligations that exist between the employee and the institution that employs her (Rousseau). Typically, the psychological contract is enshrined in such matters as opportunities for promotion, pay, financial rewards other than salary, type of work, the demands/pressure of the job, the hours to be worked, and personal control over day-to-day tasks. For the infrastructure worker, this contract may be different from that of many of her peers, because the nature of the position, the institutional awareness of the challenges it does or does not present, and indeed the commitment needed to complete the assigned tasks are likely to be in flux. These undetermined aspects of such a role will make the creation and fulfillment of robust psychological contracts far more difficult, and even a potentially critical point of weakness, because the extent to which the psychological contract is fulfilled, as perceived by the employee, can have a very strong impact on the individual’s attitudes and behavior at work. The perceived breach of an employee’s psychological contract has been shown to lead to higher turnover; lower commitment to the project, organization, or team; and a reduced likelihood to engage in “citizenship” behaviors, many of which are the lifeblood of the alt-ac path. Furthermore, the extent to which the research institute fulfills or breaches this psychological contract (intentionally or unintentionally) also affects whether these individuals see themselves more as members of the organization/institute or just of the project team. This is an identity constraint that can, in turn, make them less visible to senior management and lead to fewer opportunities for development and advancement. These issues are not only important to those concerned with rewarding contributions and creating optimized systems of science but also for their impact on human resources, leading as they do to increased expense and difficulty in attracting and retaining specialized and qualified individuals.

**Rethinking the Laboratory**

Perhaps the ubiquity of change in our research ecosystems is in part responsible for the conservatism that reigns in some cultures of research, a conservatism that resists the widespread application of new conceptualizations of what research is and does. This is not unique to the digital humanities. An interesting view of the tenacity of hierarchies and the purposes they serve can be drawn from ethnographies of science, in particular Karin Knorr Cetina’s *Epistemic Cultures* (also noted by Clement). In the microbiology lab in particular, the hierarchy of junior and senior members serves a very specific purpose: to separate two very distinct research roles that
contribute to overall lab or project success. In the less experienced category are the researchers whose work favors relationships with objects: these relationships manifest themselves as the mastery of one or more techniques, contributing to the overall laboratory “repertoire of expertise.” In contrast to this is the scientific orientation toward the “social” elements of a field that are necessary to supporting the life of the laboratory as a whole: “a laboratory-world that needs to be financed, motivated, situated, reproduced, and intellectually nourished from outside through regular infusions of information” (Knorr Cetina, 221). The microbiology lab in Knorr Cetina’s study does not sublimate the individual identity into that of the team or project to the same degree as the high-energy physics research group she also studied. The role division seen in each context does imply, however, that knowledge creation is perceived somehow as an integrated social function (sharing knowledge derived from the various object-based experts with the wider community), while the work of those focused on specific component tasks or processes is not necessarily viable in isolation and therefore is considered to be of lesser or less distinct value.

It would be pointless to deny that this hierarchy represents a certain reality: more senior members of a team are very often more able to contribute at a higher, more integrated level because of their experience, knowledge, and trusted networks. The junior members of the team benefit from the senior members’ expertise and the training and mentoring they receive—indeed, senior researchers often report frustration with the requirement to prioritize the skill development of the students and researchers they supervise over their own research interests. The hierarchies of the lab system work, so long as the benefits accrued at each level are recognized and honored and the pathway to advancement is not in any way blocked. Unfortunately, however, psychological contracts begin to unravel when social or hybrid initiatives that integrate knowledge (long thought to stem from the role of the lab’s principal investigator almost exclusively) arise out of object or functional levels of the organization as knowledge systems become more complex and these “objects” themselves become larger and more synthetic. It is here that the function of DH infrastructure as a laboratory is often impaired: the fact that the skill sets (the object- or function-related bodies of expertise) have arisen out of a heterogeneous set of perspectives leads to the development of career paths that look more like mazes. In these mazes, some paths lead inexorably to dead ends, and others to productive recursions, where forgotten knowledge suddenly finds new relevance. Still others look like they should lead to senior positions, but do not, with leadership instead being sought from a point outside of the known ecosystem, institution, or team. In particular, such cases can lead to misunderstandings and frustrations among those who feel always relegated to contributing technique only, when they may have the ability, capacity, and experience to make higher, more integrative social contributions. The evidence for this is as diverse and widespread as it is anecdotal: a senior library staff member at a prominent university takes an academic job at a much lower-prestige institution; an externally appointed director with very little DH experience becomes head of a
DH research center or initiative; an infrastructure project team instigated by domain experts realizes late in the day that they need a technical or data science expert, but fails to incorporate that expert on a sustainable basis. None of this is unique to either the United States or Europe, but the capacity of such systems to respond to the resulting stress manifests differently in each place: a European context of heavily state-funded research and education systems with narrow budgets and limiting public sector contracts versus the very different financial pressures so much more common in the United States felt within private institutions answerable to a different kind of bottom line.

This difference also presents an opportunity to harness the growing presence of the alt-ac career path, whatever we may call it, toward new and perhaps greater ends. The changes in professional identity that have long been developing within research ecosystems can now be said to have both a manifestation as an academy and as an infrastructure. U.S.-based and European perspectives can each benefit from how they might incorporate practices from each other, with the alternate academy coming to see itself as a persistent yet distinct layer in the foundation of academic work, and infrastructure workers realizing how, by coming together, they could begin to conceptualize themselves as an academic cohort in their own right, defining in their own terms the value of their knowledge. Together, this pressure from above and below may bring focus to the issue underlying the changes in research work, which is the fact that the capacity for knowledge creation is no longer limited by the institution where one works or the professional title one might have. Working toward a new paradigm by which to understand contributions to knowledge will not only unlock new conceptualizations of labor and careers but will also support new visions of innovation and discovery based not on the needs of industry or research portfolios of a lucky few, but on the passions and capabilities of a greatly expanded class of researchers.

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1. It should be recognized that, although my argument reflects a generally positive attitude toward the discourse of the “alt-ac,” the term has also come under some criticism for the implication that might be read into it of a secondary status for the people it describes. It is beyond the scope of this chapter to explore these fissures in the North American discourse.

**BIBLIOGRAPHY**

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