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Organizational Segmentation and the Prestige Economy: Deprofessionalization in High- and Low-Resource Departments

Research often considers vertical stratification between U.S. higher education institutions. Yet differences also exist within higher education institutions, which we term “organizational segmentation.” We understand organizational segmentation as a consequence of the external “prestige economy,” which favors research revenues from high-resource science and engineering fields relative to instructional revenues collected by low-resource humanities departments. We use qualitative data from 83 interviews with faculty in high- and low-resource departments to examine how organizational segmentation, academic work, and professionalization are shaped by external and internal resource pressures. We find that deprofessionalization has occurred in different ways for faculty in high- and low-resource academic units. Faculty in high-resource units, like Brint’s (1994) “expert” professionals, depend on external research resources and shape their careers accordingly, whereas faculty in low-resource units rely upon teaching revenues distributed by campus administrators.

Keywords: organizational segmentation, faculty work, academic capitalism, professionalization, prestige economy

U.S. higher education institutions are stratified on a number of dimensions, including control, sector, admission selectivity, finances, and rankings. Stratification differentiates one university from another,

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and is fairly well understood due to its consequences for institutional finance (Winston, 1999, 2004), students' career trajectories (Monks, 2000; Zhang, 2005), faculty compensation (Alexander, 2001), and other frequently studied topics. Research universities also are marked by increasing organizational segmentation (Slaughter & Cantwell, 2012), which denotes the differential treatment of academic units within universities in internal resource allocation. Some departments, often in science and engineering (S&E) fields, are so different than others, often humanities departments, that the two units become separate organizations only loosely sheltered under the same research university umbrella.

Broad changes in the political economy created the context for heightened segmentation in higher education. In place of direct state support, universities face uncertain and competitive conditions in their funding environments (Slaughter & Rhoades, 2004). While some segmentation is endemic to higher education (Hackman, 1985), intensified competition for resources has heightened internal differences (Slaughter & Cantwell, 2012). In these winner-take-all tournaments (Stephan, 2012), universities vie for resources from external providers such as tuition-paying students and research sponsors (Taylor, Cantwell, & Slaughter, 2013). Such changes entail important implications for the professional work of faculty members (Brint, 1994; Cantwell & Taylor, 2015). While professionals had classically been understood as social trustees endowed with monopoly privileges in exchange for focus on patient/client outcomes (Abbott, 1988), they increasingly have been cast as experts capable of generating revenues (Brint, 1994) and subject to administrative scrutiny to determine their contributions (Smith, 2004; Tuchman, 2009).

In this article, we understand these interrelated phenomena—organizational segmentation, professional work, and administrative authority—as enmeshed in the prestige economy of U.S. higher education. We use this insight to expand the concept of academic capitalism. In previous iterations of this theory, authors (e.g., Slaughter & Leslie, 1997; Taylor et al., 2013) have tended to view all external funding as similar; the salient contrast in these accounts was between direct state support and revenues gleaned through competition, not between one form of external revenue and another. We instead argue that some external resources (those derived from research) are preferred to others (those derived from instruction). In turn, these preferences create a prestige economy that exacerbates segmentation among academic units within research universities by conferring status on some revenues (and the academic units that generate them) at the expense of others. We refer to

academic units that generate substantial revenues through research (i.e., prestige-granting funds often controlled by the academic unit) as “high-resource” areas, while characterizing those that do not generate high levels of research support as “low-resource” units.

The contours of the prestige economy reflect a complex relationship between external resource availability and internal decision-making. Because approximately 97% of federal R&D funding is directed toward S&E fields (author calculations based on information provided by the National Science Board [NSB], 2014, pp. 5–9), humanities disciplines are to some degree limited in the competition for preferred resources. While humanists have access to highly prestigious MacArthur Genius awards, Guggenheim Fellowships, and other grants, such support is as scarce as it is recognizable (Donoghue, 2008). Research funding from nonprofit organizations and private foundations across all fields, including the sciences, accounts for just 6% of research dollars (NSB, 2014). By contrast, the resources humanists easily and routinely generate are often discounted. Humanists contribute to institutional resources through the generation of undergraduate credit hours, which are tied to tuition revenues. However, undergraduate tuition is often overseen by administrators rather than by the professionals who generated it (Tuchman, 2009). The result is that undergraduate credit hour production frequently goes unrewarded. Indeed, tuition revenues may be redirected to research and graduate education (Ehrenberg, Rizzo, & Jakubson 2007; Leslie, Slaughter, Taylor, & Zhang, 2012; Newfield, 2008, 2009). While a wide array of external resources is sought, then, not all contribute equally to prestige.

We argue that organizational segmentation contributes to the diminishing professional status of faculty in high- and low-resource units. Freidson (2013) refers to professionalism as the “third logic,” thereby contrasting it with administrative and market-based logics. In our account, faculty members in low-resource units confront administrative logics that seek to manage professional work (Smith, 2004; Tuchman, 2009). By contrast, faculty members in high-resource academic units who secure research grants may be elevated to profit-seeking expert professional status (Brint, 1994). Such support may change their terms of engagement with senior management, yet also makes them dependent upon the generation of additional funding—the “logic of the market” (Freidson, 2013)—to sustain status in the field. In other words, faculty members in different segments of the university face deprofessionalization from different sources.

Because unit-level conditions—that is, the segment of an organization in which a professional works—and faculty agency relate closely

to one another (Campbell & O'Meara, 2014), our first research question highlights faculty strategies undertaken in response to organizational segmentation. We ask:

1. How do faculty strategically respond to external resource opportunities and internal pressure to compete in the prestige economy?

While faculty members often develop creative responses to organizational problems (Gonzales, 2013, 2014; Taylor, 2015), administrative logics may limit the authority of professionals (Freidson, 2013; Tuchman, 2009). Expanded managerial capacity allows campus administrators to exercise greater authority over the allocation of resources and opportunities within universities (Rhoades, 1998; Rhoades & Sporn, 2002; Slaughter & Rhoades, 2004, 2011). As a result, faculty members work under conditions of "heightened surveillance" (Gonzales, Martinez, & Ordu, 2013, pp. 11–12; see also O'Meara, 2011) and scarce time (Walker, 2009). These conditions reflect administrative pressure to generate both prestige and revenue (Gonzales, 2013; Melguizo & Strober, 2007), as seen in rising institutional contributions to R&D (NSB, 2014), higher salaries in S&E fields (Melguizo & Strober, 2007; Slaughter, 1998; Volk, Slaughter, & Thomas, 2001), and complex faculty reward systems that may apply the standards of the sciences to a variety of fields (O'Meara, 2011; Melguizo & Strober, 2007). In contrast to previous work (e.g., Hackman, 1985), we view administrators as unlikely to favor units that engage in core mission activities such as undergraduate teaching, and as likely to favor units that generate research revenue. These insights prompt our second research question:

2. What is the relationship between faculty in segmented fields and central administrators in terms of control over university resources?

Finally, we note that organizational segmentation, expanded administrative authority, the prestige economy, and professional work are not new phenomena. The move to competition-based resource allocation began in the 1970s and 1980s (Slaughter & Leslie, 1997), which suggests organizational segmentation and its related elements likely have compounded over time (Slaughter & Cantwell, 2012). These insights prompt our final research question:

3. What is the cumulative advantage and disadvantage that accrue to academic units as segmentation increases?

Literature and Theory

Foundational studies often frame academic departments as the “building blocks” of universities. These units organize academic work (Clark, 1961, 1968; Mintzberg, 1979) and link universities to disciplines and professions (Becher & Trowler, 1989; Braxton & Hargens, 1996). Generally, academic loyalty is attached to the discipline, as embodied in the department, rather than to the university. Indeed, research suggests academic departments play an important role in shaping academic work and careers, particularly relating to research productivity (Porter & Umbach, 2001) and gender (Xu, 2008). While financial incentives are part of virtually every account of professional work, scholars, in this narration, are most likely to respond to such incentives when they intersect professional reward structures. Such reward systems highlight the role of professional norms and stratification—meaning the extent to which a university’s resources allow a department to embody the ideals of the discipline—rather than segmentation (e.g., Hermanowicz, 1998, 2005, 2009).

This “classic” model of academic departments casts individual faculty members as professionals who enjoyed considerable autonomy over their work and depended upon public support for monopoly jurisdiction over complex problems (Abbott, 1988; Brint, 1994; Freidson, 2013). In recent decades, however, dramatic environmental changes have shifted the conditions of faculty work and challenged this model of professionalism (Brint, 2002a; O’Meara, 2007; Schuster & Finkelstein, 2006). This is particularly true for public institutions (Newfield, 2008), which traditionally received a large share of their budgets from state appropriations (Desrochers & Wellman, 2011) but increasingly compete for funds from a variety of sources (Slaughter & Leslie, 1997; Slaughter & Rhoades, 2004; Weisbrod, Ballou, & Asch, 2008). Appropriations generally are intended to support activities that policymakers and taxpayers value, such as undergraduate teaching and public service (Leslie et al., 2012). As the share of university budgets drawn from direct state support has declined (Desrochers & Wellman, 2011; Doyle & Delaney, 2009; Rizzo, 2006), however, academic units that provide extensive undergraduate instruction, such as programs in the humanities (Slaughter, Taylor, & Rosinger, 2015), may be adversely affected. Such reductions reflect the prestige economy’s valorization of research and graduate education relative to teaching undergraduates (Gonzales et al., 2013) and so indicate heightened segmentation.

In response to changing environmental conditions, many professionals—including faculty members—seek to translate their expertise

into services that generate revenues (Brint, 1994). One manifestation of expert professionalism in higher education is the pursuit of research grants and contracts. Because these funds are awarded to “excellent” projects that prevail in competitive processes (Stephan, 2012), research revenues constitute a crucial dimension of the prestige economy by conferring both money and status. The overwhelming majority of federal support for academic R&D flows into S&E fields (NSB, 2014), a pattern that has intensified over time with the doubling of the NIH budget in the early 2000s and resulting emphasis on research in the applied life sciences (Brint, 2002b; Owen-Smith & Powell, 2003; Powell & Owen-Smith, 2002; Stephan, 2012). Industry and foundation support also are likely to flow to projects that promise practical and commercializable discoveries (Slaughter & Rhoades, 2004). These environmental conditions entail implications for campus administrators as academic units seek to demonstrate that they are “friendly” to external R&D support from a variety of sources (Mendoza, 2012; Mendoza, Kuntz, & Berger, 2012). Indeed, campus officials often allocate discretionary resources to “start-up” packages in efforts to bolster the ability of new S&E faculty to compete for external R&D support (Ehrenberg et al., 2007; Stephan, 2012).

By contrast, the energetic pursuit of external research revenues has prompted outcry that the humanities are in crisis precisely because of a limited ability to generate these funds (e.g., Dangerfield & Engell, 2005; Donoghue, 2008). Faculty in these fields may find that, in the absence of expertise that can be monetized, they face heightened scrutiny from campus managers (Freidson, 2013; Smith, 2004; Tuchman, 2009). Because public university administrators often seek to replace declining direct support with tuition revenues (Rizzo & Ehrenberg, 2004; Weisbrod et al., 2008), these “low-resource” units may be steered toward more flexible workforces and heavier teaching loads. Indeed, whereas S&E units tend to generate research revenues that also contribute prestige, the humanities generate tuition receipts by teaching large numbers of undergraduate students (Newfield, 2009). With the exception of foreign languages, few humanities programs have been closed in recent decades (Brint, 2002a; Brint, Proctor, Mulligan, Rotondi, & Hanneman, 2012), perhaps because of their important contributions to instructional revenues. These units often provide the majority of core curriculum courses (Menand, 2010) and tend to produce a higher number of bachelor’s degrees than most S&E fields (U.S. Department of Education, 2012, table 10). Moreover, these instructional outputs typically are produced at a relatively low cost.

The use of non-tenure track (NTT) faculty, which reduces instructional costs, is common across the academy (Ehrenberg, 2012; Schuster & Finkelstein, 2006) but is particularly widespread in humanities programs such as English and foreign languages (Modern Languages Association, 2008; Newfield, 2009). While the work of low-resource humanities units may yield tuition receipts and a flexible teaching workforce, it is unlikely to generate institutional status because the prestige economy favors research revenues. Moreover, as indicated by Newfield (2009), tuition revenues differ from research support because central administrators often enjoy discretion over these funds. In this context, institutional support for S&E research may be drawn in part from tuition payments collected by low-resource units (Leslie et al, 2012).

Each of these two responses to academic capitalist processes—the monetized “expert,” on the one hand, and the subject of managerial authority, on the other—erodes the classic model of the university and professional work. Yet the distinctions between these models prove germane to understanding the differences between faculty work in high- and low-resource units. Those who are able to secure external research support—which generates status and resources and is typically controlled locally rather than by central administration—may find their status relatively intact on campus. However, they must continue to generate research revenues to maintain or to improve their positions. Those who cannot secure research support, by contrast, see their positions erode relative to academic managers.

Organizational segmentation suggests that the opportunity to fit into one of these revised models of professional work is not distributed randomly; the academic unit in which a faculty member works matters. The prestige economy, which valorizes S&E research for its ability to generate external dollars and status from resource-rich sectors of the knowledge economy, favors high-resource fields. While academic managers use grant funds to shape academic work, research support simultaneously shapes disciplines and faculty labor markets. Scientists might prefer not to become monetized “experts” yet, if they desire opportunities to advance their careers, they must adapt to these conditions. Likewise, faculty in humanities departments who have limited access to external research funding may face increased administrative pressure to generate revenues through teaching activities. Insofar as this suggests that external resource allocation and administrative authority shape faculty work, we contend that this represents a profound destabilization of the classic model of professions.

Methods and Data

Sample

To examine organizational segmentation and faculty work, we used a multisite research design, which was well suited to refining concepts and theory (Yin, 2003). We conducted fieldwork at two public research universities because these organizations competed vigorously for research support, tuition revenues, and other external resources, and included a wide range of academic units suitable for our study. Their pursuit of R&D revenues indicated the appropriateness of research universities as a site for investigating organizational segmentation in U.S. higher education. Both were flagship campuses ranked among the top 60 public universities by *U.S. News & World Report* (2015). Neither research site had formally adopted a responsibility-centered management model for internal resource allocation when we conducted our fieldwork. Rather, departmental budgets were approved by central administrators, which meant unrestricted revenues such as tuition could be reallocated strategically to some extent by campus administrators. Both to reflect their origins in the classic model of academic departments and to maintain confidentiality of our sites and participants, we designated these sites “Socrates University” (“SU”) and “Oppenheimer University” (“OU”).

However, because our underlying topic of interest was segmentation—meaning differences in resources and status between academic units on the same campus—we did not consider these universities to be “cases.” Rather, our sampling strategy extended to the selection of high- and low-resource departments within each site. Because we see the prestige economy as the lever for segmentation, we classified departments as “high-resource” based on their ability to generate external research revenues through federal grants and contracts, industry funds, or consulting agreements. These academic units clustered in the applied life sciences rather than the physical sciences, and were clearly prestigious, as indicated by their ability to secure resources. “Low-resource” departments were those that were relatively prestigious, as noted by position in National Research Council rankings, but generated few external research revenues. The low-resource units we studied were in the humanities. Because women often were underrepresented in high-resource areas, we selected departments with higher percentages of female faculty members to provide gender diversity among interview participants.¹ Our strategy yielded a sample of five high-resource and four low-resource units at SU and eight high-resource and two low-resource units at OU.²

Data Collection

Our primary data source was 83 semistructured interviews conducted with faculty members between August 2011 and September 2012. We interviewed 37 faculty members in high-resource units and 46 in low-resource areas. We purposefully sought faculty at all ranks, from instructors and lecturers to endowed chairs and department heads, to provide a broad understanding of faculty experiences and work life. Interview participants are described by case site, high- and low-resource units, and faculty rank in the Appendix

With few exceptions, sampled non-tenure-track (NTT) faculty members held regular, full-time positions with SU or OU. Although the primary responsibility of lecturers whom we interviewed was teaching, university documents indicated these positions also involved research and service. For example, a job description for a lecturer position in the English department at OU outlined duties that included service to the department and mentoring students, while noting a competitive candidate also would demonstrate scholarship. At SU, department websites described scholarly interests of lecturers, again suggesting an expectation that lecturers engage in some measure of research. Focusing on regular NTT faculty in these positions rather than on casual or “adjunct” faculty allowed us to make appropriate comparisons between the work lives of participants. Although the expectations of work from a professor and a lecturer were different, both were expected to engage in some measure of teaching, research, and service. This sampling decision ensured comparability across interview data, but we also acknowledge that the exclusion of “adjunct” faculty members limited the scope of our study.

Semistructured interviews focused on various aspects of academic work, including internal and external revenue streams, advantages and disadvantages relative to other academic units, tenure and promotion processes, administrative decision-making, and faculty responses to internal and external resource allocation. The semistructured interviews provided faculty members the opportunity to discuss additional topics they viewed as important to their experience (Roulston, 2010). Eighty interviews were conducted in-person and three via telephone. Interviews ranged in length from 20 minutes to more than 1 hour, and were recorded and transcribed.

Because the use of data from multiple sources can increase the trustworthiness of qualitative research (Merriam, 1998), we also drew on institutional documents and records to examine how experiences of interview participants aligned with publicly available information. We drew documents from departmental and faculty websites and institutional

strategic plans. We also used records that SU and OU reported to the National Center for Education Statistics (NCES) and NSF.

Analysis

We began analysis with *a priori* codes drawn from research and theory. For example, because the focus of our analysis was on organizational segmentation, we included codes indicating faculty members' perceptions of advantage or disadvantage relative to other academic units at their campus. Likewise, we developed codes concerning how faculty allocated time to consider pressures they may feel to generate resources (e.g., pursuit of internal grants, pursuit of external grants, teaching loads, time structure). In keeping with the principles of qualitative research, however, we revised and expanded these codes iteratively throughout the data collection process (Merriam, 1998; Miles & Huberman, 1994). For example, although our sampling design rested on a unit's ability to generate external research support, it became apparent during data collection that internal resource allocation was closely related to the pursuit of outside support. This insight prompted a reorganization of our coding scheme to note places in which interview participants shared perceptions of the central administration's role in departmental decision-making.

Due to differences in responses from high- and low-resource departments, we generated two coding schemes. These schemes shared a common base, yet differed to reflect variation in respondents' experiences within high- and low-resource departments. We also examined documents and sought records (e.g., descriptive statistics on tuition and R&D income) to highlight themes. Researchers working on this project met regularly to manage the large volume of qualitative data and to ensure reliable coding and analysis.

Limitations

We acknowledge several important limitations to our analysis. First, our sampling strategy includes NTT faculty, but excludes non-faculty academic professionals such as laboratory managers or postdoctoral researchers. Because these individuals are heavily concentrated in S&E fields and constitute the fastest-growing category of workers in these areas (Cantwell, 2011; Cantwell & Taylor, 2013b, 2015; NSB, 2014; Stephan, 2012), our study may understate the extent to which high-resource units rely on contingent workers. This limitation calls for future research that may further illuminate the role of non-tenure-track personnel in the prestige economy.

A second limitation relates to our unit of analysis. Because our focus is organizational segmentation, we examine the academic unit and

consider both individuals within those units and universities that contain multiple units. This orientation may have led us to neglect certain institutional types, ranging from community colleges to private liberal arts colleges, for which only additional research can establish the relevance of our analysis. While we argue that the prestige economy proves particularly evident as universities pursue research revenues, it is possible similar processes occur in other settings that we have neglected. Further research could refine this and illustrate the particular ways in which the prestige economy shapes organizational segmentation and faculty work at different institutional types.

A final but important limitation is our inattention to professional fields other than engineering. Law schools, for example, often hold high status (Sauder & Espelund, 2009), yet support neither expensive laboratories nor secure substantial R&D support from the federal government. For this reason, we viewed the inclusion of these units, as well as business schools, as inappropriate for this study because mechanisms of segmentation are likely to be different in these areas. Further research could explore the structures and strategies that allow these units to prosper in the prestige economy.

Findings

Reflecting a national trend (Rizzo, 2006), state appropriations per full-time equivalent (FTE) student declined over time at both SU and OU in constant dollars. From 1990 to 2010, SU witnessed a decline from about \$18,000 per FTE to about \$11,000 per FTE in appropriations. Declines at OU also proved steep, from about \$13,000 per FTE to below \$9,000 per FTE over the same time period. Accordingly, external revenues, and the prestige economy from which such resources were secured, likely proved of growing importance for both institutions. For example, externally supported R&D expenditures represented an important resource stream at each campus. In 1990, SU received about \$3,000 in federal grants and contracts per FTE, while OU received more than \$5,000 per FTE.³ Over the next two decades, this figure increased in constant dollars to about \$4,000 per FTE at SU and around \$9,000 per FTE at OU. Instructional revenues grew in a similar fashion. Net tuition receipts at SU more than doubled, from about \$3,500 per FTE to almost \$8,000 per FTE. Tuition income grew more slowly at OU but began at a higher base, rising from about \$4,500 per FTE to about \$8,000 per FTE. These figures suggested that both SU and OU competed vigorously for external funds to offset declining direct support. Understanding the nature of competition in the prestige economy highlighted the themes of

organizational segmentation and changing conditions of faculty work. We drew upon each of these themes as we responded to our research questions.

Faculty Strategic Responses to External Resources

Although SU and OU increasingly collected revenues both from research and instruction, the importance of these two sources of revenue varied by department. High-resource units we studied emphasized external R&D support. A lecturer in a high-resource unit at OU described applying for grants as “part of the game” that became “second nature” for faculty members in her department. A faculty member at SU noted that, reflexive though this activity may be, the pursuit of external funding could surpass all else. “I may lock myself in here and not see anybody for two weeks while I grind out a grant proposal,” he told us. Another faculty member at SU described the grant application process in similar terms, saying, “When I was really doing the grant writing and getting those submissions in, I was here all the time. I just went home to sleep.” These statements implied that securing research funding at times overshadowed teaching and all other aspects of work. Indeed, generating resources often proved necessary for allowing academic work to continue in S&E units. One department head at OU reported that most of the funding for the department came from federal granting agencies with some additional support from industry sources, both of which proved vital to ongoing activities. As another faculty member at OU said, “If we didn’t have grants and contracts available to us, then we would have almost no graduate students.” This statement refined evidence from descriptive statistics, suggesting external research revenues were important campus-wide, but played a particularly crucial role in high-resource units.

Although grant support in the sciences was competitive and therefore unpredictable (Stephan, 2012)—a “crapshoot,” in the words of one participant at SU—such grants were largely unavailable for humanities faculty (Donoghue, 2008). A professor in a low-resource unit at OU noted there was little pressure to generate research revenue because it “doesn’t make a lot of sense . . . [to] press faculty members to apply for non-existent grants.” A faculty member at SU concurred. “You can get lucky and get one and get something done,” he said, “or you can just spend a lot of time applying for these things, which is kind of a profession in itself.”

Rather than pursuing research funding, faculty in low-resource units primarily relied on teaching to generate revenues. At SU, departmental budgets reflected credit hour production, which depended on the

number of students completing courses offered by the department. This made instruction a viable strategy by which to generate revenues. As one lecturer at SU explained, “Administration expects more teaching from us. More students coming through, more credit hours.” Several faculty members in humanities departments at OU noted that administrators also considered student enrollment in making decisions about how to allocate internal resources. A humanities faculty member at OU stated, “The shorthand for it is money follows students. So it incentivizes departments to have . . . student credit hours.” Teaching was not emphasized as much in high-resource units. One OU professor described his teaching load for the year as “very reasonable” and “quite low” with only 1.5 classes per year, while another OU faculty member said he was “fortunate” to have “only 21 students” that year.” In other words, while faculty members in high-resource units tended to allocate most of their time to research and pursuing R&D funding, individuals in low-resource areas spent far more time teaching and generating tuition revenues. These different departmental approaches proved crucial to faculty work in a prestige economy that valorized research revenues.

The relationship between the prestige economy and faculty time allocation also proved apparent within units. Faculty members in high-resource departments who were less successful in securing external funding found their time increasingly allocated toward teaching. According to a faculty member in a high-resource area at SU, “people who don’t have grants” typically received “other responsibilities to try and justify their existence.” Such a position indicated low status within the department. OU also followed this pattern. A faculty member in a high-resource unit there told us that “if I don’t get things cooking a little bit better [with research], then I’ll probably be tracked into one of those [teaching] slots.”

While all faculty members in low-resource units spent a fairly large amount of time on teaching, those in tenure-track positions often had more time for research than individuals in NTT positions. One humanities faculty member at OU described the contradiction of offering NTT positions that nominally allowed for research and service, but that also imposed heavy teaching burdens that made such tasks impractical. “There’s no consideration that those people are contributing to the research program of the department,” she said. “They’re seen as separate, so we’re not obliged to support them as researchers. Even though sort of morally and intellectually, we want to. Institutionally, we do not at all.” A lecturer at SU confirmed these insights, describing the difficulties that a heavy instructional load posed for her research. “I’m putting in 40–45 hours a week on my teaching, and then maybe, you know, maybe 5

hours per week when I can on research,” she said. The prestige economy therefore operated within units by tracking high-status faculty toward positions that allowed for more research and low-status faculty toward instruction. Tenure-line faculty without research grants found their work allocated more toward teaching in high-resource units, and NTT faculty increasingly bore instructional burdens in low-resource units.

Despite variation from one faculty member to another within the same department, between-unit differences in how faculty allocated time constituted important evidence of organizational segmentation. Low-resource units, in general, taught more, while high-resource areas engaged in more sponsored research. In the words of one SU faculty member, this arrangement can “make the humanities look bad.” A faculty member in a low-resource unit at OU echoed this concern, noting that his department was valued on campus “with the understanding that being a research department in a humanities or social sciences field is still always second rate compared to a research department in the sciences.” These findings suggested that generating different kinds of external revenues—research support and tuition receipts—situated segmentation within broader discussions about the prestige economy that favors research revenue relative to instruction. Different units were not only considered distinct; one was considered superior to the other.

Faculty, Administrative Authority, and Control of University Resources

Because the prestige economy valorized external research support, universities often contributed their own funds to expand research enterprises (Ehrenberg et al., 2007). Both SU and OU expended substantial institutional funds on research. In constant dollars, SU expended about \$1,500 more of its own funds per FTE on research in 2008 than in 1990. This growth in institutional expenditures on research likely reflected SU’s efforts to improve its standing as a research university, as stated in the university’s strategic plan. OU raised its institutional contributions to R&D at a similar rate, with per-FTE contributions increasing by about \$1,700 between 1990 and 2008.⁴ This arrangement heightened the authority of administrators who oversaw campus budgets because funds may be rerouted from other sources to support research (Newfield, 2009). As such, increases in institutional contributions to R&D suggested relationships with administrators might prove an important component of organizational segmentation.

Findings demonstrated that a faculty member’s relationship with central administration tended to vary based on whether that individual worked in a high- or low-resource unit. Interview participants

in high-resource units generally described their relationships with administrators in tones that acknowledged mutual interdependence. Faculty members sought external funding for research, and administrators favored resources that would confer both money and prestige. One department head in a high-resource unit at OU said, "If I went to work as another department head at another university, one of the key most important relationships I need to check out to go to their interview would be: Who's the Dean? Can we get along?" This concern about personalities rather than positional authority reflected high-resource units' reliance on external resource providers, which made faculty members in these areas relatively independent from central administrators. A faculty member at SU concurred with this assessment, saying, "I see it as it's our money, we made it, so we get resources."

Successes in securing research funding, in turn, appeared to contribute to administrators' favorable impression of high-resource fields. Accordingly, administrators tended to buttress these units' competitive efforts. One science faculty member at OU said of his department, "in many of the budget cuts of the past, we didn't fare as poorly as other colleges." A science faculty member at SU concurred, stating his department was in a "very privileged position" when it came to decisions about how to allocate internal resources. Administrative reallocation of resources thus appeared to enhance patterns of organizational segmentation rooted in the prestige economy.

By contrast, faculty members in low-resource units acknowledged substantial reliance on central administration for funding. This relationship stemmed from the fact that tuition revenues generated by low-resource units largely were controlled and disbursed by central administration. In sharp contrast to the personal terms in which high-resource faculty described academic administrators, one humanities faculty member at OU described the central administration "as a distant power structure that you have very little contact with and that makes decisions that come down on your heads. You try to adjust to them." Many interview participants in low-resource departments perceived that internal resources were allocated away from their units and toward high-resource departments. This process, they suggested, resulted in distinct working conditions for faculty in high- and low-resource academic units. A faculty member at OU expressed that "the university is a very different institution for [S&E faculty members] than it is for me . . . there's a very strong sense of our being more adversaries than colleagues." As another OU faculty member said, "you don't compare yourself to the sciences, because that way lies frustration."

The authority of central administration over low-resource units proved particularly evident in hiring decisions. Faculty in low-resource units reported increased use of NTT faculty as a result of decisions made by central administration. Campus administrators many times determined if a vacated tenure-track position remained in the department or was allocated elsewhere. One faculty member at OU described requesting a tenure line from the central administration as “begging” while another likened the process to “Russian roulette.” This again demonstrated the ways in which expanded managerial capacity extended over faculty members and academic work in low-resource units.

This exercise of managerial authority was possible because tuition revenues were allocated centrally, and it was perpetuated because administrative decisions tended to increase the teaching burdens of faculty members in low-resource units. One lecturer at OU noted, “Our enrollments have gone up hugely over the last 10 years. We’re serving, instead of 4,000 students, over 6,000 students.” Despite enrollment increases, the number of faculty members in low-resource units remained fairly stable or even declined. Commenting on the diminished size of his department over his years at SU, a humanities department head mused, “We just couldn’t function if we got any smaller.” A faculty member at OU concurred, noting, “we certainly labor under the sense that we may not be getting our share, considering the load we carry in terms of the numbers of students coming through here.” These practices further reduced the position of low-resource units by creating teaching-focused departments whose tuition revenues primarily were controlled by central administration.

Accumulation of (Dis)advantage in High- and Low-Resource Academic Units

The importance of R&D revenues in high-resource departments meant the priorities of funding agencies played an important role in shaping these faculty members’ research agendas. As one faculty member at OU told us, “Things have changed in academia in that you have to be an entrepreneur . . . if you want to do research, you have to bring in your own money.” A high-resource department head at OU praised faculty who have the “dexterity to change” research interests to fit new funding priorities. He said, “What’s hot today won’t be hot tomorrow. So we’re kind of like that herd of impala on the Serengeti Plain running from ephemeral pool to ephemeral pool of water, and we have to be able to make it from one pool to the next.” A department head at SU concurred, noting work sometimes changes in response to environmental

constraints. "You have to follow [the funding agencies'] rules and what they lay out as the target for research," he told us.

Because much of the work of faculty members in high-resource units involved securing external research support, faculty in these areas experienced widely divergent career outcomes. Individuals who were able to locate an "ephemeral pool" of resources prospered. By contrast, other faculty in high-resource fields described frustration that shifting priorities limited the research they were able to do. One faculty member at OU said, "I'm not . . . sitting here idle, twiddling my thumbs, but I'd like to move on . . . with new research efforts." Federal and industry funds had been prioritized to other areas, however, which prevented him from progressing with the projects he envisioned. Such conditions placed his career "at the mercy" of external and internal evaluation committees. In other words, faculty members in high-resource departments had to be responsive to funding agency priorities to do research and, eventually, secure tenure and promotion. High-resource faculty thereby implied that external bodies exercised substantial authority over their careers. Like Brint's (1994) "experts," these individuals found their professional autonomy rested on the ability to monetize their skills. Such an arrangement created dependency upon the external providers of resources even as it aided high-resource units' status on campus.

In low-resource units, by contrast, faculty members typically sought support from campus administrators. Funds often were cobbled together from a collection of smaller internal grants or personal funds. A faculty member at OU admitted, "I'm paying for my research out of my own pocket now." Regarding grants, one faculty member at SU told us, "you have to go begging from one little pot to another." When these modest efforts stalled, faculty members often turned their attention to cost cutting. These efforts again highlighted the growing use of NTT faculty whose primary, though not exclusive, responsibility was teaching. Campus administrators largely determined how positions were allocated between departments. One faculty member at SU described the role of administrators in the decision to hire lecturers, saying his department "agreed to accept these positions, not as if it was in our power to accept or deny them." The use of NTT faculty reduced variation in the work of individuals on the tenure track in low-resource units. In general, those on the tenure line neither succeeded as wildly as did their peers in high-resource areas nor worked under the demanding conditions faced by NTT faculty within their own academic units. Rather than either of these extreme cases, tenure-line faculty members in low-resource units faced the ongoing diminution symbolized by seeking support from one "little pot" of money at a time. In doing so, faculty in these units found

their professional autonomy curbed by administrative authority and logics (Freidson, 2013; Tuchman, 2009) rather than by the demands of external resource providers.

Discussion

Classic accounts (e.g., Clark, 1961, 1968; Mintzberg, 1979) cast the academic department as the “building block” that links the university, the environment, and the academic profession. Using the concept of organizational segmentation, we instead suggest that shifting environmental conditions make academic work profoundly different for faculty members in high- and low-resource academic units. Faculty members in both kinds of units face internal and external pressures that impinge upon their authority and independence. For those in high-resource areas, this lack of independence reflects the logic of competition in market-like settings (Freidson, 2013), which makes many scientists into “experts” who seek to exchange their expertise for financial support (Brint, 1994). In low-resource units, by contrast, the logic of administration increasingly governs faculty work (Freidson, 2013), with the result that faculty members find themselves subject to growing managerial authority (Rhoades, 1998; Tuchman, 2009). Given these differences, we argue that departments are less like uniform blocks from which a campus can be built, and more akin to uneven pathways through which resources and status derived from the prestige economy flow into the university. As a result, faculty members in high-resource units appear to work under different conditions than their peers in low-resource areas.

Because higher education operates in a prestige economy, campus decision-makers seem to prefer research revenues to those drawn from tuition. This represents an important contribution to our understanding of academic capitalist processes, as previous research has tended to treat external resources as fungible. The ability of campus decision-makers to allocate significant resources highlights the decline of the traditional role of the department and the growing role of central administration in faculty work. Administrative support matters, as acknowledged by interview participants in both high- and low-resource units, and on balance, it appears to exacerbate segmentation. Internal resources flow to high-resource units that might use the funds as “seed money” for projects that could generate external research support, while administrators replace tenure-line faculty with NTT instructors in low-resource units. These internal decisions accentuate patterns found in the prestige economy, which tends to valorize research over teaching, by enhancing the

research activity of high-resource units and the teaching duties of low-resource units. Heightened segmentation results.

Our analysis of organizational segmentation suggests these academic capitalist processes have led to different paths of deprofessionalization in high- and low-resource units. Faculty members in high-resource units rely upon external support for professional advancement and ongoing organizational operations. For the most part, the career strategies they craft are aimed at securing resources in the prestige economy. Rewards within the department and, crucially, other departments—that is, other universities at which scientists might like to work—reflect success in generating prestige economy research revenues. By ceding some control of their work to external resource providers, faculty members in high-resource units behave as professionals in possession of expertise that can be monetized (Brint, 1994), and so insulate themselves from the demands of on-campus decision-makers. By contrast, faculty members in low-resource academic units rely on internal allocation of resources—meaning the favor of administrators—for support. These individuals are subject to increased managerial capacity (Slaughter & Rhoades, 2004), and negotiate for tenure lines, internal grants, and other resources from central administrators. Because the prestige economy disfavors the humanities, however, administrators are often unwilling to supply desired resources, and humanists instead place growing emphasis on teaching to generate revenue. By placing instructional burdens on NTT faculty, tenure-track humanities faculty members are able to preserve time in which to engage in research and service. The result is that faculty members in low-resource departments—especially, though not exclusively, NTT faculty members—work under fundamentally different conditions than their peers in high-resource departments. These conditions are not those of the expert professional, but those created by the logic of administration and corporate-style management (Freidson, 2013; Smith, 2004; Tuchman, 2009).

Our findings complement previous work indicating that academic capitalist processes, such as the pursuit of external revenues (Mendoza, 2012; Mendoza et al., 2012) and use of NTT faculty (Kezar, 2013), are not distributed uniformly throughout the academy. Notably, however, prior research tends to treat these differences as idiosyncratic features of a particular department, its culture, and its external supporters. Our findings extend this research by theorizing patterns across local differences. The relationship of administrative authority and professionalization to external resource availability suggests that segmentation may be a feature of most public research universities; after all, virtually all public research universities operate in the prestige economy. Insofar as

this is the case, the “building block” of public research universities may shift from the department as a repository of field-level norms (Becher & Trowler, 1989; Clark, 1961) to a new set of power relations in which high-resource faculty who successfully navigate the prestige economy negotiate with campus administrators to secure internal support. By contrast, faculty in low-resource areas and those in high-resource areas who have failed to secure sufficient external monies face greater instructional burdens that are alleviated only partly by NTT faculty.

Implications and Future Research

We have argued that institutional competition for resources in the prestige economy is a driver of segmentation among departments within research universities. We believe implications of segmentation for academic work may be profound. Highly resourced expert professionals are encouraged by administrators to engage in research and related activities (such as technology transfer, licensing, and university-industry partnerships) that yield resources from the prestige economy. Although success in the prestige economy expands professional opportunity for these faculty members, such opportunities are contingent upon success in continual competition to secure preferred resources. The arena for research therefore shifts from the profession to a complex interaction among mission agencies, policymakers, legislative appropriators, and representatives of various disciplines. Overall, this context channels university research toward discovery of intellectual property for the knowledge economy, thus constraining professional autonomy within a gilded cage rather than the bounds of administrative power.

Conversely, professional opportunities are restricted for professors who cannot easily access resources in the prestige economy. Open positions often are filled with NTT faculty who primarily perform teaching duties. As the numbers of tenure-track positions diminish, so do the possibilities of these professionals, whose autonomy is curbed notably by expanded managerial capacity.

Overall, the academic profession is undermined by segmentation in that the faculty increasingly reflects the hierarchy of professions in the wider society. Expert professionals (often male) work near the industrial corporate core (e.g., engineering) or in fields with tight closure and task monopoly (e.g., medicine, veterinary science). These individuals sit at the top of a steep hierarchy. By contrast, human service professionals (often female) reside at the bottom of this hierarchy (Brint, 1994). The accumulation of organizational segmentation over time suggests that faculty in high-resource units are more similar to individuals in the

former group, while those in low-resource areas are closer to the latter category.

Our findings strengthen theoretical accounts (e.g., Slaughter & Cantwell, 2012) indicating that organizational segmentation characterizes universities in the prestige economy. While our research contributes to a broader understanding of these phenomena, we acknowledge that our study emphasizes faculty work on two campuses. This qualitative approach reflects the limits of available quantitative data, which tend to be aggregated at the institutional level and so obscure within-organization processes. Given this, we echo other scholars (e.g., Leslie et al., 2012) who call for the collection and dissemination of higher-quality data about colleges and universities. Figures on departmental enrollments, budgets, and staffing patterns would allow researchers to explore organizational segmentation in different ways, adding refinement and texture to our account.

The collection and analysis of more precise data is particularly important because differences in working conditions for faculty in high- and low-resource units are due in part to accounting conventions. External research support is awarded to particular investigators and projects rather than to universities (Stephan, 2012). This arrangement can prove vexing for campus decision-makers who simultaneously desire revenues gleaned from research and, by encouraging these activities, allow campus operations to expand into expensive areas over which administrators exercise little jurisdiction (Kerr, 2001). As a result, university administrators—whatever their managerial capacity may be in abstract terms—have little authority over the revenues and expenditures of high-resource units. By contrast, administrators exercise far greater authority over tuition receipts. Such conventions may encourage shortsighted financial decisions, such as the diversion of tuition receipts to support unfunded indirect costs associated with S&E research (Ehrenberg et al., 2007; Newfield, 2009).⁵ Left unchecked, such patterns could yield universities that are both expensive and difficult to govern. Our findings suggest this is an apt characterization of processes at SU and OU. Insofar as this analysis proves accurate, internal resource allocation disfavors tuition-generating units—despite rapid growth in per-student tuition payments at each campus—while subsidizing those that produce relatively few instructional revenues. The fact that our research implies but cannot demonstrate this conclusion amplifies our call for better information about departmental resources and operations.

The well-chronicled financial problems facing public universities raise the additional question of why administrators would prefer research revenues to instructional revenues. Money, after all, is

fungible. The answer to this question may be rooted in the peculiar financial world of higher education, in which university decision-makers seem to pursue money and prestige simultaneously (Melguizo & Strober, 2007; Winston, 1999). Thus, while the dollars themselves may be indistinct, the source of the money appears to matter as universities vie with one another for status in the prestige economy. Participants in both high- and low-resource areas viewed reinvestment in the low-resource units that typically generated tuition revenues as uncommon. Ironically, then, academic capitalist processes may yield a form of segmentation that, on the campus level, borders on fiscal imprudence. Whether this in fact proves to be the case is an important topic for further research.

Finally, and perhaps most significantly, we contribute to a growing body of research (e.g., Cantwell & Taylor, 2013a; Gonzales, 2013; Gonzales et al., 2013; Leslie et al., 2012; Slaughter & Cantwell, 2012; Taylor et al., 2013) that emphasizes the ways in which competitions both allocate resources and legitimate resource asymmetries. Our analysis of segmentation suggests that the prestige economy provides a rationale for the expansion of managerial capacity. Internal patterns in turn legitimate the prestige economy by mimicking it. The resulting system unquestionably features more competition, and heightened organizational and individual responses to competition, than has been common in the past. What is less clear is whether these competitions yield efficiencies and effectiveness, or merely competition for its own sake. Moreover, given the expense of participating in the prestige economy, we wonder whether the resulting departments, universities, and systems can continue to prove viable absent substantial public subsidies to offset rising costs. Indeed, insofar as the prestige economy prompts decision-makers to disfavor low-cost, tuition-producing units relative to high-cost, research-producing units, the result may be a university that is simultaneously attuned to pursuing research resources and difficult to sustain in the face of ongoing resource constraints.

Notes

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¹ Despite this attempt to highlight women's experiences, the possibility that low-resource fields are "feminized" is underexplored in this account. When we designed the study, we were concerned that our search for high-resource units with gender diversity might bias our study. However, we found little diversity among high-resource departments at the faculty level, which constitutes an important area for future research.

² The imbalance between the number of high- and low-resource units at OU reflects the scale of the low-resource units we studied. Because these were large departments with many faculty members, we attained theoretic saturation in these units before expanding our study to include additional areas.

³ To protect the confidentiality of our case sites, all figures are approximations. Financial figures are adjusted for inflation using the Consumer Price Index.

⁴ Notably, however, both universities' contributions to R&D declined in 2009 and 2010, perhaps reflecting financial pressures of the "Great Recession" (Douglass, 2010).

⁵ While federal research grants fund indirect costs at a negotiated rate, industry and foundation funds often do not (Stephan, 2012).

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APPENDIX

Interview Participants by Case Site, High- and Low-Resource Department, and Rank

Rank	Oppenheimer University (OU)		Socrates University (SU)	
	High-Resource Department	Low-Resource Department	High-Resource Department	Low-Resource Department
Instructor/Lecturer/Research Scientist	1	2	2	2
Adjunct	2	1	0	0
Assistant Professor	3	2	4	6
Associate Professor	1	6	5	5
Full Professor	4	8	5	8
Endowed Chair	0	1	2	4
Department Head/Dean/Director	5	0	3	1
Total	16	20	21	26

Note. High- and low-resource departments were defined by their ability to generate external revenues through federal grants and contracts, industry funds, or consulting agreements. High-resource departments were defined based on their ability to generate external research revenues through federal grants and contracts, industry funds, or consulting agreements and were primarily in the STEM fields. “Low-resource” departments were defined as departments with limited access to external revenue sources and included humanities fields, such as English and history.