Reproducing Organizational Status Orders:
Academic Program Differentiation in U.S. Colleges and Universities, 1970-1990†

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Abstract
This article proposes that organizations respond to environmental uncertainty by differentiating profiles of key activities in ways that reproduce status orders. The higher an organization’s status, the more audiences monitor it for signals of general strengths, leading to more institutionally legitimate forms of differentiation; while the lower an organization’s status, the more it competes for an audience’s recognition through signals of specific competencies, leading to less legitimate but potentially advantageous forms of differentiation. The framework is supported by examining the status-contingent consequences and causes of undergraduate program differentiation trajectories during a period of increasing environmental uncertainty: the likelihood that adopting a less legitimate program profile leads to a diminished status-related evaluation increases as status increases; adopting a more legitimate profile enhances status-related evaluations most clearly among middle-status organizations; consequently, as status increases illegitimate change is more likely a result of economic resource decline; while, in general, higher status colleges and universities react to increasing uncertainty by differentiating at slower rates and in relatively more institutionally legitimate ways. This further integrates institutional and strategic understandings of how environmental pressures shape organizational change.
INTRODUCTION

How organizations respond to environmental pressures has been the key issue in organizational theory since the 1970s (see Carroll and Hannan 2000; Perrow 1986; Scott 1998). Much of the debate has concerned whether organizations strategically adapt or ritually conform to aspects of their environments in response to uncertainty (Kraatz and Zajac 2001; Oliver 1991; Pfeffer and Salancik 1978; Reuf and Scott 1998; Suchman 1995; Tolbert 1985). Different antecedents and consequences of illegitimate and legitimate change in key structures and practices offer support for one or a combination of explanations (for partial review, see Strang and Soule 1998). This article sheds new light on these issues by proposing that organizational status shapes – and is shaped by – strategies to manage environmental uncertainty, and this can be seen in status-contingent causes and consequences for more or less legitimate change in key activities.

Status is a notoriously slippery concept, which is strongly related to the concepts of reputation and legitimacy (Bitektine 2011; Deephouse and Suchman 2008; Washington and Zajac 2005). A number of organizational characteristics – including age, product quality, and conformity to professional standards – are used by participants, audiences, and researchers alike to make more than one of these qualitatively different assessments of organizations. Recent work has largely focused on providing greater clarity to these concepts. Here, I join others in defining status as a relative standing in a field of competitors in terms of positions of accumulated prestige; reputation as an organization-level characteristic linked to external evaluations of quality; and legitimacy as more rooted in the appropriateness of an organization’s actions with respect to socially constructed norms and beliefs.

These understandings of status, reputation, and legitimacy give rise to a reciprocally causal set of relationships precisely because “pure” signals of each quality don’t exist. The inherent ambiguity of empirical referents leads to various buffering and spillover processes in which one quality may bolster or bleed into another in the minds of participants and audiences (at least in the short term) (see Deephouse and Suchman 2008, p. 66). For Bourdieu (1991), the status-reputation link is summarized in the concept of symbolic capital – the systematic misrecognition of greater privilege as greater competence. Prior
organizational research has tended to approach status as a largely stable organizational resource that brings market advantages by enhancing audiences’ quality perceptions (Podolny 2005). As discussed in detail by Washington and Zajac (2005), this approach also rests upon an implicit status-reputation link. Other studies have examined more explicitly the links between reputation and legitimacy, especially when legitimacy concerns membership within an organizational form. This work has shown that key aspects of organizational reputation rely upon important audiences’ evaluations of the appropriate structures and activities for a given form (Hsu and Hannan 2005; Hsu, Hannan, and Koçak 2009; Zuckerman 1999).

Here, I extend this work by formulating how a nexus of audiences’ expectations concerning status, reputation, and legitimacy are determined by institutionalized positions within a field (Bourdieu 1993, Fligstein and McAdam 2012; Martin 2003; White 1981).

The literature suggests three plausible scenarios linking status, reputation and legitimacy. One is *status dominant* – that is, the higher the status the greater the freedom to transgress established criteria of legitimation, because status buffers from negative evaluations. Indeed, high-status organizations may dramatize their distinction by flouting the conventions of a field, as when a Michelin-starred chef puts a pedestrian “hotdish” on the menu in order to show her capacity to *create* legitimacy. A second view is *legitimacy dominant*. This view suggests transgressions are likely to be rare displays, because the conduct of higher status organizations is heavily monitored for reputation-related cues; as a result, higher status is associated with higher levels of conformity to field-level norms (Rhee and Haunschild 2006). Thus, as Bourdieu (1993) and DiMaggio (1992) argue, “old guard” institutions tend to stay firmly rooted in the canon of the most legitimated activities, regardless of shifting demand. In general, high-status organizations will be attentive mainly to the activities of other high-status members of the field, as well as broader factors that affect the legitimacy of a given activity (Rao, Monin, and Durand 2003). A third view posits a *status curvilinear* relationship in which middle-status actors are most constrained in terms of legitimate behaviors due to the ambiguity of their position and a greater risk of downward mobility (see Phillips and Zuckerman 2001).
Although at this stage of theory development it is difficult to predict exactly which scenario will prevail in a given field, prior research suggests that the legitimacy-dominant scenario is likely to characterize fields with deep-seated but difficult to validate beliefs in product quality (Aspers 2010; Podolny and Phillips 1996, p. 458; Velthuis 2007; Yogev 2010). If so, how does this explanation differ from neoinstitutional accounts in which such fields trend toward conformity due to isomorphic environmental pressures? Status-based research has often relied on formal barriers and economic constraints that prevent such isomorphism across the status order – as in the wine industry, which has strict controls for the use of regional labels (e.g. “Napa”). But why wouldn’t all organizations simply adopt the key activities of the highest-status organizations without strong barriers to doing so?

Simmel (1908) sketched the outline for an answer, proposing that status dynamics arise from imitating those just ahead and differentiating from those just behind in a pecking order – while the highest standing actors continually innovate ways to distinguish their position at the top (Bourdieu 1992; Kaufman & Patterson 2005; Morgan 1998; for review, see Kaufman 2004). Collectively, these attempts to get or stay ahead generate a “running in place” in which the relative distances between status positions remain stable. While compelling, this type of explanation requires a more specific mechanism as to what localizes competition within status strata; otherwise, it borders on tautology rather than reciprocal causality. If the mechanism preventing high status mimesis is ignorance of high status practices or an inability to understand or imitate these behaviors, such conditions clearly don’t hold within many organizational fields with well-defined status orders.

The mechanism outlined here identifies a causal feedback loop emerging from the influence of differentiated expectations from important audiences, including various external evaluators (Durand, Rao, and Monin 2007; Lounsbury and Rao 2004; Podolny 1993, 2005; Sauder and Espeland 2009; Zuckerman 1999). Rather than simply expecting conformity to the most legitimated activities in a field, actors (organizations in this scenario) and their audiences engage in a two-stage signaling process in which only the first stage concerns evaluating the conformity of actors with respect to prerequisite norms (Zuckerman 1999). In a more or less simultaneous second stage, audiences sort qualified actors according to more
specific criteria and the varying “offers” these actors make by differentiating from one another. Status is clearly part of the “offers” made by many organizations to participants and consumers, and in some cases it is the most important offer. This framework fills out the Simmelian view by proposing that stable status expectations localize the second stage of signaling so that various reputation and legitimacy related qualities are compared within a status stratum (e.g. “a good four-star hotel” vs. “a great four-star hotel”). An organization’s menu of key activities therefore signals some degree of overall conformity to field norms, but also differentiates it by signaling desirable qualities vis-à-vis competitors of a similar status.

Status orders are thereby reproduced through organizational strategies to remain competitive and anchored within one’s status position. In seeking to manage uncertainty organizations differentiate key activities in ways that, intentionally or not, signal status positions. In broad terms, this suggests that the higher the status the more organizations primarily seek to maintain status, while the lower the status the more organizations primarily seek to improve reputation. Status entails ineffable qualities of prestige, often conveyed through activities embedded in higher status professions and cultural institutions; while reputation entails signaling extrinsic value deriving from demand and anticipated connections to technical environments. Higher status organizations therefore tend to manage environmental uncertainty through relatively more institutionally legitimate forms of differentiation, while lower status organizations invest in less legitimate but potentially advantageous activities.

I draw upon the causal imagery of a functional analysis to derive predictions from this perspective (see Stinchcombe 1968: 80-115). Here, the anticipated negative status-related consequences of altering programs in the wrong direction are motivational causes of altering programs in the direction toward status preservation. Moreover, an increased effort underlying such attempts is projected to be made clearer during periods of increasing uncertainty as stability is harder to achieve. However, this approach makes no problematic assumptions regarding these changes as leading to positive institutional homeostasis or having structural-functional reasons for existing. Instead, I draw upon “structure in action” perspectives to examine how boundedly rational decisions can recreate social orders as organizations enact their environments (Weick 1979).
I evaluate this approach by examining the status-related consequences and causes of undergraduate program change in the U.S. during a period of increasing uncertainty. Undergraduate programs are core activities that are both resource intensive and central to organizational identity. Beginning in the 1970s, stagnating student enrollments, a severe economic downturn, declining public funding, and a sustained shift in student demand toward more practical areas of study raised challenges to established models of higher education (Astin, Green, & Korn 1987; Gumport 2000). The importation of strategic management theories from the for-profit sector and the institutionalization of various prestige rankings led to an increased awareness of status, linking of status to diffuse criteria of prestige and exclusivity, and generating an important marketing tool for colleges and universities. How organizations responded to these changes is therefore provides a theoretically and substantively important context.

THEORETICAL FRAMEWORK

Belief Partitioning and Differentiation Strategies

The theoretical framework extends the logic of resource-partitioning models of environmental pressures (e.g. Carroll and Swaminathan 2000) to niche dynamics in more institutionalized fields where product qualities or people-processing technologies are ambiguous (see Mohr and Guerra-Pearson 2008; Rawlings and Bourgeois 2004). Rather than competing for pre-existing tastes and material resources for survival, organizations occupy positions within a belief space in which they compete for generalized and specialized niches. The high-status center of this belief space is associated with a generalized belief in intrinsic value, and is therefore crowded with the most fully institutionalized organizations that share participants’ and audiences’ faith in “who they are.” The various privileges of status – the “Matthew Effects” – help to form a relatively stable elite, leaving space open within the specialized (albeit lower-status) periphery.¹ When the distribution of regions becomes stable within the minds of participants and audiences, there is a condition of belief partitioning — a high status core of elite players vying to maintain symbolic capital, a middle-status semi-periphery composed of those with some measure of symbolic capital, and a low status periphery with little symbolic capital but still meriting inclusion in the same
field. Under such conditions, organizational change isn’t tightly coupled with shifting resources and demand per se, nor is it based upon rote conformity to broad institutional environments, so much as a simultaneously internalized and externally impinging set of expectations concerning one’s position in the field (see Fligstein and McAdam 2012; Martin 2003; White 1981).

External media and various critical audiences’ assessments uphold the categories and rankings that provide market orders (Elsbach & Kramer 1996; Espeland & Sauder 2007; Lounsbury & Rao 2004; Sauder & Espeland 2009; Zuckerman 1999). Media reinforce status-related groupings that serve as bases for strategic reference groups among organizations. For example, in higher education, the *Carnegie Classification* system has provided the bases for broad comparison of organizational forms, while over time the *US News* college rankings has splintered into a number of status-related categories (“national” vs. “regional” schools). Administrators may further use these categories and rankings to define their competitive status niche (e.g. “top ten regional Master’s” vs. “top fifty national Research I”) (Elsbach and Kramer 1996; Labianca et al. 2001). Within these positions, organizations then compete for more specific niches and reputation-related qualities that help maintain (or perhaps marginally) improve their statuses among peers. Indeed, strategic management techniques, including those directly applied to higher education, encourage such niche-seeking (see Keller 1983).

The ways that organizations compete for such niches are therefore highly contingent upon status positions and audiences’ expectations. Bourdieu (1993, 1998) offers more detail into the dimensions and relational character of these competitions. In his view, higher status is associated with qualities expressing a disinterestedness (albeit one that may require considerable hidden effort to perfect and maintain), while lower status positions are anchored in qualities demonstrating necessity. In cultural fields, disinterestedness is often expressed through a rejection of market forces and popular demand. The oligopoly of disinterestedness leaves newcomers and others lacking symbolic capital to compete within more specialized but less legitimated niches on the basis of “what they do.” An organization unable to provide the penumbra of high status to its constituents can thereby build and maintain its reputation through activities that offer more extrinsic rewards.
As field uncertainty increases due to any number of exogenous shocks or endogenous processes, organizations are led to engage in even greater levels of differentiation to clarify their “offers” in terms of “who they are” and/or “what they do.” This is consistent with Miller and Shamsie (1999) who demonstrated a general tendency in the Hollywood film industry to respond to demand uncertainty through increasing product variation within studios. However, this perspective makes the more specific claim that strategies in overall differentiation rates and trajectories are enabled and constrained by one’s position. This gives rise to two interrelated differentiation strategies in response to uncertainty.

The differentiation strategy characteristic of lower standing can be called hedging – incorporating less legitimated activities into one’s profile in a manner that operates like hedging the risk of one’s bets. Organizations strategically clarify “what they do.” Rather than trying to bluff audiences into thinking one is higher in status than one really is by adopting rarified or very general activities, lower status organizations tend to compete for specialized niches that can give them a reputational edge in the local competition for areas with potential growth in demand – that is, areas that signal extrinsic value that can compensate for a lack of organizational prestige. Hedging is therefore consistent with a strategic view of adapting to resource dependencies; however, suggesting this is contingent upon institutionalized status expectations, rather than objective differences in resource dependencies (see Tolbert 1985).

In contrast, higher status reputations are maintained through a type of distancing from the hedging activities indicative of lower standing, thereby underscoring a sense of “who one is.” Distancing signals one’s more established and/or cutting-edge position through some measure of autonomy from market forces, and can occur in two general ways. First, one can distance from lower-standing organizations by refusing to change, because a non-response shows an organization’s capacity to ignore environmental pressures (see Oliver 1991). Distancing can also be accomplished through activities conveying an intrinsic sense of value due to their embedding within institutions. Status may even be connected to having key activities that are akin to ornamentation – that is, nonessential and perhaps costly. Like extravagant plumage on some birds, these activities signal an underlying fitness by conspicuously “wasting” resources.
To illustrate distancing, consider the following response, taken from an online forum in which a prospective undergraduate asks a currently enrolled student, “Does Columbia [University] have an undergraduate business program like NYU?”

The reason most of the Ivy League does not create an undergraduate business degree is because THEY DON’T NEED ONE. Prospective undergraduates at Ivy Leagues usually get an Economics degree. Even liberal arts degrees at the Ivies trump NYU Stern recruitment on Wall Street…If it's investment banking you are looking at, go to [website name] …and… you will find that [Ivy League schools] are all more heavily recruited than NYU Stern. At the end of the day, Columbia will offer you just as many, if not more opportunity than NYU simply because it is recognized that Columbia is more prestigious and that it is an Ivy League school. (College Confidential 2006)

Within this mature field, adopting an undergraduate business degree does precisely what the online forum member indicated: it signals “we need one” to attract students and gain recognition. In contrast, differentiation within more academic areas signals various underlying organizational strengths: exclusive student characteristics, as well as the capacity to support the human and technical capital needed to sustain program types that have less immediate market value (Rindova et al. 2005).

Viewed in terms of entire profiles of activities rather than one or a few practices, hedging and distancing are not mutually exclusive strategies. In short, this suggests: the more status, the more distancing; the less status, the more hedging. Therefore, middle-status organizations can neither purely hedge uncertainty, nor simply increase disinterested change. Rather, competition among middle-status organizations requires moving to some degree in both directions in order to simply stay in place. However, whether or not the consequences and causes of illegitimate and legitimate change are more pronounced for middle-status as compared to higher-status organizations remains an empirical issue.

Status and the Consequences of Illegitimate and Legitimate Change

The assertion that higher status is linked with more legitimate change can be examined empirically by asking, what happens when organizations differentiate in status atypical ways? Do audiences perceive the same shift in key activities differently based upon an organization’s status? In terms of status evaluations by important audiences, this suggests that higher status organizations that differentiate in illegitimate
ways – for example, in cultural fields signaling demand dependencies by expanding into newly popular areas – will be penalized, while lower-status organizations will avoid such consequences. Leaving open the empirical possibility of a status curvilinear effect, this suggests:

**H1a:** *The likelihood that illegitimate organizational change will negatively impact status-related evaluations increases as organizational status increases.*

In contrast, legitimate change may be less likely to affect status perceptions for two reasons. First, legitimate change may *confirm* an organization’s membership in the field as part of the first stage of signaling, more than differentiating one’s reputation from nearby competitors in the second stage. Second, because lower-status organizations are less monitored in terms of such signals, adopting a more legitimate profile of activities is likely to go unnoticed by important audiences, or to be potentially confusing. Together, these suggest there will be less pronounced effects of legitimate program change on status-related evaluations, but also affords possibility that legitimate change will confirm or somewhat enhance status-related perceptions as organizational status increases:

**H1b:** *The likelihood that legitimate organizational change will preserve or elevate status-related evaluations increases as organizational status increases.*

**Status and the Causes of Illegitimate and Legitimate Change**

The status-contingent view of the consequences of illegitimate and legitimate organizational change posits a type of self-fulfilling prophecy. Because higher status organizations that adopt a less legitimate profile of practices will be perceived as becoming less exclusive and going “down-market” in terms of quality, higher status organizations will avoid doing so. However, some middle- and higher-status organizations experiencing economic resource declines may shift “down market” where they can (at least in the short term) profit from their higher status. Higher status organizations adopting less legitimate profiles are therefore more likely to have experienced recent economic declines, compared to lower status organizations that will expand in these less legitimate areas as routine responses to increased competition.
In fact, lower status organizations are likely to funnel economic windfalls toward expanding into new and less legitimate programs to further their hedging strategies. This suggests a status-based contingency in the economic factors leading to illegitimate organizational change:

**H2: Economic resource decline will lead to relatively higher levels of illegitimate change as organizational status increases.**

However, the overarching prediction of this approach is that, net of changes in the underlying material resources within organizations, higher status organizations will tend to engage in relatively more legitimate organizational change trajectories when compared to lower-status organizations. It is already abundantly clear that many fields are structured in such a way that higher status positions are anchored in greater levels of legitimacy. The theory outlined here suggests that these differences aren’t due to differences in assets, resources, or demand *per se*, and that net of such factors organization change is enabled and constrained by status. The causal imagery invoked here therefore suggests that efforts to maintain positions are likely to increase when the difficulty in achieving them increases, such as during periods of increasing environmental uncertainty. This would therefore predict the following:

**H3a: Overall rates of change during periods of increasing uncertainty will be slower as organizational status increases.**

**H3b: Trajectories of organizational change during periods of increasing uncertainty will be relatively more institutionally legitimate as organizational status increases.**

**ACADEMIC PROGRAM DIFFERENTIATION**

These hypotheses are tested in the context of U.S. higher education, and specifically changes in undergraduate programs – a core activity that is both resource-intensive and central to organizational identity and image. The period of study is one of increasing uncertainty due to numerous shifts in the organizational environment, providing a clearly salient case for evaluating the theoretical framework. In addition, the framework brings a fresh perspective to bear upon a somewhat disparate body of work on academic program change.
Research on academic program change increased in the 1990s in an attempt to make sense of the changes of the prior period. These studies provided crucial insights into the factors behind specific program changes, especially the contentious forces within universities undergoing various “restructuring” initiatives (Ashar & Shapiro 1990; Bastedo & Gumport 2003; Eckel 2002; Gates 1997; Gumport 2000; Morphew 2000; Slaughter 1993). Informative as they are, however, these case studies tell us little about changes that may or may not be occurring across the field of higher education as a whole. By focusing at the level of specific changes to organizational structures, this work doesn’t easily generalize to understanding forces shaping the institutional level of organizations – that is, how organizations interface with audiences’ perceptions of status, reputation, and legitimacy.

Academic program change during this period has been central to broad theoretical debates concerning organization-environment linkages and the causes and consequences of changing in more or less legitimate ways. A number of studies have followed the innovation and/or diffusion of academic programs as windows into how environments shape organizational change in highly institutionalized fields (Kraatz and Zajac 1996; Olzak and Kangas 2008; Rojas 2007). These studies have been important in refining existing organizational theories, as well as testing theories tailored to specific cases; however, in selecting \textit{a priori} one or a few programs they are limited in terms of formulating a perspective that helps reconcile theoretical and empirical inconsistencies in a generalizable way.

Limitations arise when conceptualizing program changes (1) as independent from one another within organizations and (2) as absolute rather than relational in terms of their legitimacy in the field. As case studies demonstrate, program profiles reflect a balance of commitments worked out through various administrative deliberations in which organizational identity and image are key issues. Understanding the causes and consequences of change therefore requires an analysis at the level of differentiation trajectories as either retaining or shifting such balances vis-à-vis other organizations in the field. In short, new insights are afforded when looking at shifting “menus” rather than tracing changes in a few “dishes.”

Historically, program profiles have expanded as the path of least resistance in appeasing multiple constituencies (Gumport and Snydman 2002). However, resistance to expanding programs into areas of
questionable legitimacy and perceived threats to “core” areas have been ongoing issues in defining the symbolic boundaries of the institution for more than a century. The legitimacy criteria for academic programs have slowly expanded with periods of rapid change (such as occurred with the land-grant Morrill Acts). While the program types and their legitimacy criteria have expanded, it undoubtedly remains the case that higher status is associated with more legitimate program profiles connected with core areas and areas of faculty interest. Today, one can find bachelor’s degree programs in areas as rarified as “history of mathematics” and “symbolic systems” (but largely in highly prestigious institutions) to those in areas as practical-sounding as “beverage management” and “construction science” (but largely in non-prestigious institutions). While most academics are well-aware of this variation and its correlation with status, dominant organizational frameworks have difficulty accounting for it.

Rationalist theories would explain program differentiation either as adaptations to changing demands for human capital in the labor market (Becker 1964), or, in more Weberian terms, as a form of bureaucratization in which the rationalization of academic credentials is a means to manage growth and increasing task complexity (Blau 1970; Clark 1983). These accounts fall short, however, because they implicitly require tightly-coupled mechanisms that reward “effective and efficient control of the work process” (Scott & Meyer 1983: 140), and some market mechanism by which inefficient producers fail and their resources are redistributed.

Neoinstitutionalists have challenged rationalist accounts on both points (Meyer, Scott, & Deal 1981; Strang & Meyer 1993). Most obviously, selection in favor of the most efficient producers of human capital is hard to posit considering that failure rates of colleges and universities are vanishingly low. Moreover, prescient adjustments of programs to shifting labor-market demands are unlikely because of inherent ambiguities and uncertainties in the quality of educational “products” (i.e. graduates) (Brint & Karabel 1991; Cohen & March 1974; Gumport 2000; Meyer & Rowan 1977). The causal ordering invoked in some adaptive accounts may have it backward: rather than efficiently coordinating work and responding to labor market demands, areas of study may expand as organizations seek to link new occupational niches to established credentials (Brint et al. 2009).
While neoinstitutional research has effectively challenged rationalist accounts, it fails to adequately explain important patterns of program change. One inconsistency arises from the increasing influence of managerialist ideology since the 1970s: academic administrators have in varying degrees become more sensitive to student preferences for more practically-oriented degrees and credentials (Milliken 1990) despite the structurally weak linkages between higher education institutions and human capital markets. Sometimes colleges have adopted programs of questionable legitimacy in relation to their organizational forms and status positions, and – as with the aforementioned critique of efficiency explanations – haven’t suffered in terms of increased mortality (Kraatz and Zajac 1996). This suggests a need to supplement neoinstitutional accounts with a more strategic adaptation perspective in which managers respond in boundedly rational ways to perceived shifts in technical environments, by adopting less legitimate but beneficial activities.

The theoretical framework therefore offers some insights into the twofold puzzle of program change. For neoinstitutional approaches, it helps explain the presence of a highly differentiated mature organizational field with somewhat increasing levels of illegitimate change. For more strategically adaptive approaches, it helps explains what would generate enduring differences in terms of program legitimacy given endemic loose-coupling with market demand and the lack of strong consequences for more or less legitimate change.

The approach also helps fill out work that has pointed to status dynamics in academic program change. Morgan (1998) found precisely the type of imitative “running in place” dynamic discussed by Simmel and others among all but the lowest-status liberal arts colleges in the U.S. Lucas (1991) and other researchers concerned with the stratifying work of credentials have pointed to the increasing differentiation of programs as an outcome of higher education expansion (Arum, Gamoran, and Shavit 2007; Bastedo and Gumport 2003; Davies and Guppy 1997). As with Collins’ (1979) argument that the expansion of higher education enrollments creates credential inflation that devalues levels of academic achievement, status-based approaches suggest that the other symbolic features of credentials – namely,
the degree-granting institution’s reputation and status, alongside the academic area of study – have become increasingly important.

The approach affords new insights by (1) examining program change at the level of differentiation trajectories, and (2) proposing that the consequences and causes of more or less legitimate trajectories are contingent upon organizational status. For one, examining overall changes in menus may reveal that less legitimate alterations are often offset by even more legitimate ones, so that on balance an organization’s profile remains largely stable. In addition, when considering the entire field of changing menus, the relative distances between status positions in terms of legitimacy may be preserved or widened even as all menus tend to shift in a more or less legitimate direction over time. To more fully examine these novel contributions, statistical models are supplemented with more descriptive analyses.

METHODS

Data and Sample

Analyses draw upon multiple secondary data sources. The sample of colleges and universities is taken from the “Colleges and Universities 2000” project and the Institutional Data Archive (IDA) (Brint et al. 2003). This dataset is based upon a stratified random sample of 361 presidents and chancellors in the academic year 2000 who were asked to list up to eight organizations they considered similar to their own, and eight they hoped to emulate over the next ten years. Of the 301 surveyed presidents in the IDA, 275 provided information, listing on average five similar and three emulated institutions. The initial sample thus contains 829 colleges and universities listed by these top administrators. Deriving a sample in this manner is consistent with the notion that field boundaries (who are the players) should be determined in part by producers’ awareness of one another (DiMaggio & Powell 1983; Martin 2003; White 1981). It also facilitates the inclusion of one relational factor used here. The primary source of data on organizational change comes from graduation statistics provided by the National Center for Educational Statistics (NCES) (U.S. Dept. of Education 1970a-1986a, 1987a-1999a). Additional institutional characteristics are taken from additional NCES surveys (U.S. Dept. of Education 1970-1999).
Supplemental data were taken from well-known college and university rankings, as well as U.S. Census statistics on local area population demographics.

To examine patterns of academic program change, I matched these 829 colleges and universities with corresponding data on earned degrees conferred over the period of 1970 to 1999. For each institution, I assembled an annual profile of their undergraduate program “menus” as inferred from NCES graduation statistics. Because the NCES Classification of Instructional Program (CIP) codes were revised at two points during this period, I recoded programs into stable categories using taxonomy cross-walks provided by the NCES. I collapsed program labels into the earliest (1970-1982) taxonomy when possible, while new academic program areas – those that were not connected to any earlier classifications in NCES cross-walks – were collapsed into “other” categories within the closest 4-digit CIP code of the earlier taxonomy. In the few cases where earlier CIP codes are merged in later taxonomies, I retroactively merged these in the earlier period. All of these steps are conservative, because granting a degree in any program within a more refined category will trigger the larger grouping – a technique that can only serve to underestimate program differentiation and change, producing regression coefficients that are more likely lower-bounds rather than precise point estimates (see England and Li 2006; Jacobs 1995). This strategy yielded 277 undergraduate program types, of which sampled institutions tended to offer around 35 in an average year.

I pooled these data into a single longitudinal dataset in which each college or university has multiple observations – one for each undergraduate program offered in a given year – so that the fully expanded dataset has more than 350,000 organization-program-years. The number and types of programs for each college or university can expand and contract over time as academic offerings shift, and programs are removed from the dataset when they are determined to have been abandoned, which is inferred when an institution ceases to grant degrees in that area. I minimized the influence of random reporting error and sparse enrollments. When considering program adoptions, I employ an initial three-year “burn-in” period that built up programs so that a program is present in the base year if granted in any year of the burn-in period. Program abandonments are inferred only after a program has graduated zero students for seven consecutive years. Otherwise, programs are assumed to exist, but to have not
graduated students in a given year. Very similar strategies have been used with prior studies examining organizational change with these data.

**Model Estimation**

*Changing Status-Related Evaluations as an Outcome.* To test Hypotheses 1a and 1b, models predict upgrades and downgrades in status-related evaluations subsequent to short-term trajectories of organizational change. Due to limitations in collecting annual data on status-related evaluations, these changes are measured at four five-year rolling intervals over a twenty-year period. I estimate two types of regressions – one for downgrades, and one for upgrades. Hence, the dependent variable becomes the log-odds of a downward or upward shifts for organization $i$, so the model can be written as:

$$
\log \left( \frac{\Pr(y_{it} = 1)}{1 - \Pr(y_{it} = 1)} \right) = \alpha_{t0} + \tau + \beta_1 S_i(t-5) + \beta_2 S_i^2(t-5) + \beta_3 (\Delta_{ij}) \\
+ \beta_4 (\Delta_{ij} \times S_i(t-5)) + \beta_5 (\Delta_{ij} \times S_i^2(t-5)) + z_i' \beta + \varepsilon_i,
$$

(1)

where $\alpha_{t0}$ is the baseline log-likelihood of organizations being downgraded or upgraded over the first five-year period when all predictors are at zero; $\tau$ is the effect for the current five-year period for all organizations; $S_i$ is a status evaluation score for organization $i$, which is included with its squared term to account for the likelihood that evaluations are inherently more fluid in the middle of the pecking order; $\Delta_{ij}$ is a rolling five-year difference in the proportion of more or less legitimate programs (denoted as area $j$) offered by organization $i$; $z_i'$ is a vector of time-invariant and time-varying control variables; and $\varepsilon_i$ is an organization-specific error term to account for the longitudinal data structure. The coefficients for $\beta_3$ and $\beta_4$ therefore jointly test either Hypotheses 1a or 1b – namely, that the consequences of illegitimate and legitimate program change will be contingent upon organizational status, and $\beta_5$ tests for a possible curvilinear effect for middle-status organizations. All organizations of the lowest ranking are omitted.
from models predicting downward shifts in reputation; while all organizations with the highest ranking
are omitted from models predicting upward shifts.

**Organizational Change as an Outcome.** To test Hypothesis 2, models predict annual changes in an
organization’s profile of key activities as a function of lagged changes in underlying economic resources.
Organizational fixed-effects models account for all stable characteristics of organizations (region,
organizational form, control, etc.) that are likely related to economic resources and program change, and
thereby to focus only on time-varying explanatory and control variables. Status, as a largely stable
characteristic only enters the model through interaction effects with the focal variable. I estimate four
separate models – based upon the known legitimacy or illegitimacy of a given area – so the model can be
written as:

\[ y_{ijt} = \mu_i + \tau + \beta_1 x_{i(t-4)} + \beta_2 (S_i \times x_{i(t-4)}) + \beta_3 (S_i^2 \times x_{i(t-4)}) + z'_{i(t-4)} \beta + \varepsilon_i, \]  

where \( y_{ijt} \) is the proportion of programs offered in college or university \( i \) in area \( j \) in year \( t \); each
institution \( i \) has a fixed effect \( \mu_i \); \( \tau \) accounts for period effects with an annual dummy variable; \( x_{i(t-4)} \) is
a measure of the underlying economic resources for organization \( i \) lagged four years for reasons explained
below; \( S_i \) is a time-invariant measure of status for organization \( I \) enters the model through its interaction
with the focal independent variable; \( z'_{i(t-4)} \) is a vector of lagged time-varying controls; and \( \varepsilon_i \) is an
organization-specific error term to account for non-independence. Together, the coefficient \( \beta_1 \) and \( \beta_2 \) test
the hypothesis, and \( \beta_3 \) tests the possibility that middle-status organizations may be particularly reluctant
to go “down-market” in response to changing resources. Because dependent variables are proportions, I
transform these into logits and estimate models with fixed-effects linear regressions.\(^5\)

To test Hypotheses 3a and 3b, models once again use fixed-effects to predict annual changes in
the proportion of programs offered in area \( j \) for organization \( i \), with an additional dependent variable for
the overall number of programs offered in a given year in order to gauge differences in overall rates of
differentiation. The model can be written as:
where notation is consistent with equation (2). The main difference in these models is that the effect of the time period enters as a linear effect, rather than as a set of dummy variables that sweep away the period effect. Although I also test for curvilinear effects, the model presents the focal interaction between an organization’s overall status and time, and the estimates for \( \beta_1 \) and \( \beta_2 \) test for middle- to higher-status differences in change trajectories. The vector of control variables now also includes the time-varying measure for economic resources denoted as \( x \) in equation (2). Because the dependent variable for Hypothesis 3a is a count of new programs, the model is Poisson; while for proportions of programs in area \( j \) I once again transform these into logits and estimate models with fixed-effects linear regressions.

**Dependent Variables**

**Status-Related Evaluation Change.** I use the selectivity score from the Barron’s Guides to colleges for the years 1972 to 1992 as an evaluation of organizational status. This widely-known measure rates colleges and universities on a seven-point scale from “least selective” to “most selective,” and is displayed prominently in various publications. It therefore has face validity among higher education researchers examining perceptions of prestige, although it may lack construct validity in that the precise factors used to gauge selectivity remain unclear. An arguably more valid measure of overall status would take into account multiple measures from various guides, as well as ratings and deference patterns by administrators themselves, and indeed I develop such a measure below for overall organizational status in order to be used in predicting change trajectories. However, many of the most common ranking measures of U.S. colleges and universities were being developed precisely during this period, and so don’t provide a consistent or comprehensive way to gauge changes in status perceptions. The average Barron’s selectivity score for the entire period correlates highly with later status-related measures, suggesting that it is an appropriate way to gauge shifting perceptions.
Specifically, I use this to assess five-year changes in status perceptions using two time-varying binary measures – one for *upgrades* and one for *downgrades*. I distinguish empirically between upgrades and downgrades because it seems likely that change is asymmetrical with respect to the consequences of organizational change — that is, it is likely easier to fall than to climb the pecking order – and factors responsible for gains may systematically differ from those causing decline.\(^6\) I employ binary measures because changes are nearly always in single increments over a five-year window.

*Organizational Change.* The most general measure of program differentiation is simply the *number* of programs a college or university offers in a given year. While this gauges differentiation rates, it says nothing in terms of program legitimacy. To assess more or less legitimate program change, I draw upon the Biglan classification of academic programs (Biglan 1973; Stoecker 1993). This taxonomy was empirically validated at several points during the same period as concerns this article, and is based upon the underlying dimensions that organize perceptions of areas of academic knowledge by those within the field (faculty, administrators, etc.). The full Biglan taxonomy consists of eight program types, divided along three latent dimensions: pure academic vs. applied, high paradigm vs. low paradigm, and life vs. non-life foci. The first dimension is strongly linked to perceptions of program legitimacy, and second dimension (especially in combination with the first) offers a more nuanced partitioning of programs according to overall perceptions of their legitimacy. For this reason, I divide the 277 academic programs into four types: *vocational/professional* (applied + low paradigm), *technical* (applied + high paradigm), *humanities and social sciences* (academic + low paradigm), and *science* (academic + high paradigm) (see Appendix A). I calculate the proportion of programs in each area and year for each organization.\(^7\)

*Independent Variables*

*Status (Time-Varying).* For models predicting downgrades and upgrades in status evaluations, I use the *Barron’s* selectivity score described above to test for a curvilinear effect of organizational standing on the
likelihood of reputation change. I also interact these terms with program change trajectories to test for differences in the consequences of organizational change based upon an organization’s position.

**Status (Time Invariant).** In models predicting program change, I employ a time-invariant measure of organizational status using a factor scale that combines multiple prestige-related characteristics: the years since a degree was first granted (centered on 1970), the academic reputation score from the 1985 *US News* survey of college presidents, the average of five *Barron’s* selectivity scores for the period 1970-1995 taken at five-year intervals, and a network-based measure of deference constructed from presidents’ responses in the IDA survey. This fourth item is a measure constructed by creating an 829×829 matrix of the colleges and universities listed by presidents, and then considering an institution *i* to be higher in status than institution *j* if more presidents who responded that their own institution resembled *i* sought to resemble the institution in column *j* than vice versa. Taking this as an implicit sorting of institutions along the lines of deference, I calculated an eigenvector centrality score that captures each institution's centrality in this hierarchy of administrators status perceptions. Together, these status measures showed a high level of correlation (alpha = .84) and a single factor solution.⁸

**Economic Resources.** To gauge overall economic resources, I used factor analysis of three annual measures of organizational finances: total revenues per student, total expenditures per student, total endowment dollars per student. These items are highly correlated and yielded a single factor, which I term *economic dominance*. This measure is correlated with, but distinct from, the factor for an organization’s status (*r* = .39). Because dependent variables in models predicting organizational change are based upon graduation statistics, I lag this measure by four years to account for the likelihood that changes in academic programs will have occurred several years prior to their observed appearance or disappearance in terms of earned degrees conferred.
Program Change. In models predicting status-related evaluation change, program changes are focus predictors interacted with organizational status. For these models, organization-level changes in program profiles are taken as five-year differences in the overall annual proportions of vocational/professional, technical, humanities and social sciences, and science programs in a college or university’s profile.

Period Year. I gauge the overall effect of increasing uncertainty with an annual measure coded from zero to twenty. Based upon prior research of the period, I assume environmental changes combine to create a largely linear effect of increasing uncertainty. I tested for various nonlinearities, but found very little improvement in model fit, and no results that altered the direction of predicted effects.

Controls
In all models, I include controls for time-varying organizational resources. Following other strategic approaches to program change (Kraatz 1998; Kraatz & Zajac 1996), I include an annual measure of organizational slack, calculated as total revenues divided by total expenditures. To gauge resource dependencies, I include a measure of tuition dependence calculated as the total proportion of annual revenue derived from student tuition. In addition, I gauge resources in local geographical areas using U.S. Bureau of Labor Statistics data (Current Population Survey). From these data, I created annual measures for the proportion of the local county population between the ages 18 and 22 as a measure of the local area proportion college age, as well as the strength of the local area professional labor market, which I derived from a factor analysis based upon the proportion of individuals between 18 and 65 employed in five professional areas. To account for differences in student demand for a given program area in a given institution that may directly influence program change, I include the lagged proportion of all graduates in a given area $j$ in organization $i$. For reputation change models, these controls are expressed as rolling five-year difference scores, while for models predicting program change these are once again entered as predictors lagged by four years. For reputation change models, I include two
additional time-invariant controls – one for *organizational form* (*Carnegie* Classification), and one for *institutional control* (*private vs. public*). See Table 1 for a summary of variables used in models.

--Insert Table 1 Here--

RESULTS

Figure 1 shows average levels of organizational differentiation during this period. Clearly, colleges and universities tended to become more differentiated as indicated by three measures: (1) the average number of programs, (2) the average variety of academic fields represented gauged by the Simpson diversity index across the four main Biglan program types ($V_i = 1 - \sum_{N=1}^{4} (n_i/N)^2$), and (3) the average relational distance from other organizations gauged by a Jaccard similarity index comparing organizations’ profiles across all 277 program categories in a given year ($S_{ij} = |n_{ij}| / |i \cup j|$). However, while the average number of programs increases from around 30 to 38 over the period, and the average relational similarity of profiles decreases from .29 to .25, the Simpson index within organizations only marginally increases from .58 to .60. This index can be interpreted as the likelihood that two randomly selected programs within the same college or university belong to different academic areas over the period. The relatively small gain in variety in tandem with the overall increased differentiation suggests colleges and universities tended to differentiate *within* pre-existing areas.

--Insert Figure 1 Here--

Aggregate patterns of program change suggest a downward flow of symbols, and therefore an upward imitation along status lines. The characteristics of newly adopted programs during this period indicate that lower status institutions tended to follow the lead of *relatively* higher status institutions. Taking the difference between the status score for a focal institution and the average status scores for those colleges and universities offering each program type adopted by that focal institution in a given year, and then averaging these differences across the 24,156 adopted programs, reveals the tendency to
adopt programs previously adopted by *somewhat* higher status institutions (the mean difference score is +.13 standard deviation units of status).

These general patterns of program change are consistent with the aspirations of head administrators. Figure 2 shows a deference order based upon colleges and university presidents’ responses to questions of organizational similarity and emulation in the IDA survey (see also Brint, Riddle, & Hanneman 2006; Labianca et al. 2001). The plot takes a subset of the sample of the 829 listed colleges and universities – those mentioned by four or more presidents (N=215) – and then arrays these as rows and columns ordered from highest to lowest using the time-invariant status measure. Cells are shaded darker to the extent that college presidents listed the row college or university *i* as similar to their own, while also responding that they hoped to resemble the column college or university *j*. The shaded diagonal vector cells therefore represented self-emulations – that is, presidents hoping to continue resembling the institutions that they claim to already resemble. The figure reveals two relevant tendencies. First, in general presidents seek to resemble institutions that are *somewhat* higher in status, rather than aspiring too far beyond their own position. If we take the difference between the status scores of emulated institutions and those colleges and universities deemed similar to one’s own, we see a similar tendency to monitor somewhat higher standing institutions (mean difference is +.43 standard deviation units). Second, as one moves higher in the status order, the deference structure becomes more clearly defined. The lower triangle (i.e. upward status aspiration) becomes more pronounced, and the diagonal vector (the tendency to self-emulate) becomes clearer. This suggests a greater level of awareness and monitoring as one moves up the pecking order.

--Insert Table 2 Here--

Table 2 offers more detail of the content of program shifts during this period by listing the programs with the most net gains and losses in institutions between the first and second decades of observation, as well as their relative shifts in the average prestige scores of institutions offering these programs. This offers more detail to the top-down status-diffusion model in the overall downward shift in the average status scores of colleges and universities offering these degrees. In some program areas,
mainly in liberal arts fields (classics, languages, and literature), we see that abandoned programs move upward in average prestige, suggesting that these programs are being preserved and/or adopted by more higher status organizations. Patterns also reveal the rise of more specialized areas of study demonstrated by the growth of “other” fields of study and the decline of more general fields. However, because many of the highly abandoned general areas of study also move up in status, this suggests that lower status institutions were more likely to make the shift from general to specific. These broad patterns are consistent with studies of aggregate program change during this period, which have shown colleges and universities trending away from fields associated with the “old economy” (e.g. home economics), “old media” (e.g. speech), and “old culture” (e.g. French) (see Brint et al. 2009).

The Consequences of Illegitimate and Legitimate Change

Hypotheses 1a and 1b argue that differentiation strategies are shaped by anticipated and perhaps observed status-related consequences. Consistent with this argument, there is relatively little net change in status during the period based upon the Barron’s measure: more than half of all institutions show no net shift in status, while around 40 percent either increase or decrease by only one point in the seven-point scale. As would be predicted by status-based models in general, most of the institutions showing some movement are middle-status organizations; while high- and low-status organizations are more stable.

Table 3 shows results from random-effects logit models examining the likelihood of downgrades and upgrades in status evaluations as a function of five-year changes in program profiles. Models 1 and 2 show the baseline curvilinear effect of status on the likelihood of subsequent downgrades and upgrades. Consistent with a middle-status conformity perspective, Model 1 shows that middle-status organizations are the most likely to be downgraded in the average five-year period. Predicted probabilities based upon coefficients indicate that a low-status college or university (a 2 of 7 in selectivity) has only a .01 probability of being downgraded; a high-status institution (a 7 of 7 in selectivity) has a .11 probability; and a middle-status (a 4 of 7 in selectivity) has a .16 probability. However, Model 2 suggests that upgrades are increasingly difficult as an organization ascends the pecking order. While a low-status
organization (a 1 in selectivity) has a .69 probability of being upgraded, a middle-status organization has a .15 probability, and a high-status organization (a 6 in selectivity) has only a .07 probability. Together, these baseline models suggest that mobility is greatest between the low to middle status regions of the field, but once an organization has entered elite status its position becomes more secure.

--Insert Table 3 Here--

Models 3 through 10 control for this overall curvilinear effect to examine how changing “what one does” affects status evaluations. Coefficients for focal academic program changes are predicted log-odds of status evaluation change when status is at a hypothetical zero point. The interaction effect therefore shows the predicted change in the main effect of a one-unit increase in program change for a one-unit increase in the seven-point selectivity scale. Results from Models 3 and 4 support Hypothesis 1a by showing that the outcomes of illegitimate change are contingent upon one’s lagged status: for lower-status colleges and universities adopting a more vocational/professional profile of programs decreases the likelihood of downgrades and somewhat increases the likelihood of upgrades; while the opposite is true for higher-status organizations. Models 8 and 9 support Hypothesis 1b by showing that the effects of legitimate program change are contingent upon organizational status.

Figure 3 shows predicted probabilities based upon the coefficients in these models. Probabilities are based upon coefficients for the first five-year period for public Research I universities, showing a ten percent increase in the proportion of their undergraduate profiles for a given area (Vocational/Professional, Technical, Humanities and Soc. Sci., or Sciences). These probabilities indicate that net of differences in the overall likelihoods of downgrades and upgrades (the y-intercepts), how organizations alter their key activities affects status-related evaluations in ways that are contingent upon one’s position in the field. Higher status organizations are much more likely to suffer downgrades as a consequence of illegitimate change, and are more likely to profit from legitimate change. Consistent with the middle-status conformity argument, one significant interaction with the curvilinear effect suggests that middle-status organizations are the most likely to benefit as a consequence of adopting more legitimate
profiles. Conversely, lower-status organizations are likely to move up the pecking order by adopting less legitimate profiles.

--Insert Figure 3 Here--

These findings also suggest that key activities are stronger negative signals than positive ones – that is, it is easier to signal that one has gone “down-market” than to upgrade audiences’ perceptions through altering key activities. Changing in an aspirational fashion is more likely to confirm one’s existing status than to signal improvements in quality.

The Causes of Illegitimate and Legitimate Change

Figure 4 shows differences in the average annual adoption rate of academic programs as well as the types of programs adopted during the entire period based upon organizational status (where high status is ≥ 1 s.d.; low status is ≤ -1 s.d.; and middle-status is > -1 s.d. and < 1 s.d.). Clearly, higher-status organizations tend to adopt fewer new activities in response to changing environments with an annual rate of .82 programs; while middle-status organizations have the highest overall differentiation rate of 2.4 programs. Consistent with the notions of hedging and distancing, for lower-status organizations more than 64% of new programs are within less institutionally legitimate areas, while for higher-status organizations 58% of new programs are within more institutionally legitimate areas, and middle-status organizations are close to a balanced split with 45% in more legitimate areas.

--Insert Figure 4 and Table 4 Here--

Table 4 shows models testing Hypothesis 2. Results offer support for the assertion that net of stable organizational features, as well as changing student demand and other time-varying factors, higher-status organizations are more likely to respond to recent economic decline by engaging in illegitimate change. In terms of vocational/professional programs, a one standard deviation decrease in economic resources at time $t-4$ leads to a predicted annual increase of about 4 percent for programs in this area in high-status organizations (+2 standard deviations in status), but a negligible increase for lower-status organizations. A similar but less pronounced effect exists for technical programs, consistent with the
notion that these are somewhat more legitimate areas in general. Higher-status organizations are also more likely than lower-status organizations to expand in legitimate areas subsequent to increases in economic resources.

Table 5 tests Hypotheses 3a-3b – namely, net of illegitimate organizational changes mainly brought about by declining resources, higher status organizations will tend to differentiate at slower rates and in more institutionally legitimate ways during periods of increasing uncertainty. Model 1 estimates an organizational fixed-effects Poisson regression predicting annual changes in the number of programs over the period. The coefficients for year and year squared indicate that the overall trend for the average middle-status institution (where status = 0) is toward greater differentiation, but at a declining rate that levels off by 1990. Rather than pairing down programs during this period of fiscal constraint and market uncertainty, the tendency is toward elaborating program menus. Conferring the descriptive finding in Figure 4, and in support of Hypothesis 3a, higher status colleges and universities differentiate at slower rates as indicated by the interaction term net of all stable organizational factors and time-varying resources.

--Insert Table 5 Here--

Models 2-5 offer support for Hypothesis 3b. Model 2 shows that the shift toward more vocational/professional programs is increasingly less likely as organizational status increases – that is, both status and status squared are negative. If the overall proportion of vocational/professional programs in base year is around 23 percent (exp[-1.491]), coefficients indicate on average a decrease of about two percent among higher-status institutions (exp[-1.491+.02 -.06 -.04]). Models 4 and 5 indicate that higher-status colleges and universities on average adopted more legitimate program profiles during this period, especially when including those in the sciences. Organizations of all statuses showed a slight increasing trajectory in terms of adopting a more technical profile of programs. Considering the somewhat ambiguous status of these programs in terms of legitimacy, the lack of an organizational status-based contingency in technical program change during this period is understandable. On the whole, these models indicate that an overall shift away from more legitimate areas toward less legitimate ones by
higher-status organizations is anomalous and likely a gambit linked to declining economic resources. Instead, the neoinstitutional prediction of increasingly legitimate change – even during a period of heightened uncertainty – explains the overall trajectories of higher-status but not lower-status organizations.

*Reproducing the Status Order*

To what extent do these organization-level hedging and distancing strategies lead to reproducing the macro-level status order? Figure 5 shows the overall shifts in the average program profiles for lower-, middle-, and higher-status organizations between the first and second decades of the period. The figure shows that, on average, colleges and universities across the status spectrum shifted toward somewhat less legitimate profiles. However, this shift is much more pronounced among lower-status organizations; so much so, that the relative differences between status positions in terms of the illegitimate-legitimate split in the field actually increases over the period. If, on average, higher-status organizations were 16% more legitimate in their key activities in the first decade, they were 20% more legitimate during the second decade. Middle-status organizations become more distant from both higher- and lower-status organizations, shifting from 8% more legitimate than lower-status to 10%, and from 8% less legitimate than higher-status to 11% less so in the second decade. In the aggregate, status positions become more defined during this period.

--Insert Figures 5 - 6 Here--

Figure 6 shows how this was accomplished partly through the adoption of specialized programs in more and less legitimated knowledge areas. I take all programs in “Other” areas as being more highly specialized, because they don’t fit within the general categories of the NCES taxonomy during this period. I then examine decennial changes in the average number of these more specialized programs for lower-, middle-, and higher-status organizations in each academic area. The figure suggests that lower- and middle-status colleges and universities more rapidly adopted specialized programs in *vocational/professional* areas compared to higher-status organizations. Conversely, higher status colleges
and universities expanded more rapidly into specialized categories within more legitimated areas, especially in the sciences – programs more clearly connected to professional interests and productivity assets. Once again, status positions become more clearly defined due to different rates of innovating specialized activities within more and less legitimated areas.

DISCUSSION
This article has offered new insights into how environmental pressures shape organizational change. Drawing upon field theories, it placed the imperative of maintaining one’s local status vis-à-vis similarly positioned organizations at the center of the causes and consequences of legitimate and illegitimate change. Bourdieu’s view of cultural fields filled out this framework by offering insights into the content and strategies involved in these struggles. Collectively, the organization-level hedging and distancing strategies seeking to manage uncertainty tend to reproduce macro-level status orders.

This advances status-based approaches to market competition by examining how status orders are socially reproduced through more or less strategic responses to uncertainty. This ties together status, reputation, and legitimacy in a reciprocally causal way, and thereby brings status-based research in closer alignment with neoinstitutional theory as well as more strategic accounts of organizational change. From this standpoint, organizations don’t respond to uncertainty by blindly seeking cover in more legitimate practices, nor do they necessarily adapt to changing technical environments. Instead, organizations differentiate and deepen activities that signal qualities desirable for an organization of their status. For high status organizations, strategies approximate a neoinstitutional account in the sense of being more embedded within institutional environments; although this differs from a neoinstitutional account in leading to differentiation rather than isomorphism. For low status organizations, strategic responses come closer to predictions from more strategic approaches of anticipated changes in technical environments; although this also being consistent with the view that organizations may colonize these areas and thereby help shape their technical environments. Controlling for a number of changes in important resources, results indicated that organizations are enabled and constrained by their status positions.
In terms of its empirical approach to status dynamics, this article has drawn attention to profiles of activities as important windows into organization-environment links that are obscured when examining the innovation or diffusion of practices. This underscores the importance of pursuing change at the level of organizational profiles – that is, examining changes to “menus” rather than individual “dishes” – as in related research on code-preserving and code-violating changes (Monin, Rao, and Durand 2007). Such approaches offer significant potential for examining the inherently relational aspects of fields of symbolic activity as when menus are altered in a coordinated fashion in attempts to maintain relative positions. This has implications for studying legitimate vs. illegitimate change: if all organizations in a field move toward somewhat less legitimate practices, but some do so at a far greater rate, then the relational distances between positions within the field may remain unchanged or even widen.

The theory tested here retrieves and updates some of the virtues of earlier functional and institutional approaches to organizations as natural systems, leaving aside certain problematic assumptions. This was done primarily by incorporating both the consequences and causes of organizational change within a single framework. Moreover, the ultimate phenomenon being explained is largely homeostasis – that is, the reproduction of order in the field – emerging from more or less strategic goals of administrators in competitive environments. Prior work has largely focused on status as a cause of change, because status is demonstrably stable in many organizational fields. While offering important insights, such approaches bracket what is likely the more important phenomenon – namely, that status orders are continually reproduced in routine and subtle ways even in the face of dramatic environmental changes. I have sought to emulate the careful work and research strategies developed by functional approaches in specifying the causal feedback loops that generate aggregate stability (esp. Stinchcombe 1968, p. 80-4). However, instead of positing that emergent properties of social structure guide behaviors toward functional ends, this article has drawn upon field-theoretic approaches to outline how one’s position in the field affords and constrains strategies in ways that tend toward macro-level order.

This work has implications beyond organizational theory. For the sociology of knowledge, programs represent intellectual categories, which have grounded discussions of institutionalization (Swidler and Arditi 1994). This article suggests that endogenous field-level dynamics mediate broader
institutional change in shaping what types of knowledge find their way into the “temple” of higher education (see Stevens, Armstrong, and Arum 2008). Academic program differentiation is also important to stratification research. Programs are connected to changing opportunity structures within colleges and universities and the sorting of students into areas of study and consequently post-graduation life course trajectories (Arum,Gamoran, and Shavit 2007; Davies and Guppy 1997; Lucas 1991). As a large body of research on choice of college major has shown, students are likely to choose majors based in part on calculations of future payoffs. This article suggests that an awareness of organizational status may increasingly combine with vocationalization of academic programs among lower-status colleges and universities to shape choice in ways that facilitate sorting students along ascriptive lines (see Buchmann & Park 2009). Both institutions and students engage in a homologous struggle in which academic programs convey information to important audiences about both “who you are” and “what you do”; so that, the reproduction of status orders in higher education is tied to societal-level social reproduction.

Ultimately, this builds upon our sociological understanding of the institutionalization of status orders in a variety of social realms (see Gould 2002; Martin 2003; Stewart 2005). While confirming the dynamic of “running in place” through tempered status imitation, this article has shown the importance of a corollary process in which status orders are reproduced by horizontal differentiation. Status orders are therefore less like single-file lines reproduced through the logic of “follow the leader” and more like phalanxes that march faster and become more differentiated during periods of uncertainty as organizations clarify their status positions through the command “become what you are.”
References


### Tables and Figures

Table 1. Descriptions of Variables Used in Models

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<thead>
<tr>
<th>Concept</th>
<th>Variable(s)</th>
<th>Description</th>
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* p<0.05, ** p<0.01, *** p<0.001

Note: Robust standard errors in parentheses. Curvilinear effects and interactions are reported when found significant.

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* p<0.05, ** p<0.01, *** p<0.001

Note: Model estimation controls for all stable characteristics of colleges and universities, and all annual fluctuations. Coefficients for yearly changes are omitted to conserve space. Robust standard errors in parentheses.
### Table 5. Organizational Fixed-Effects Models Showing Status-Based Differences in Undergraduate Program Change Trajectories: U.S. Colleges and Universities, 1970-1990

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<td>0.000***</td>
<td>-0.002***</td>
<td>-0.002***</td>
</tr>
<tr>
<td>× Status</td>
<td>-0.002***</td>
<td>-0.003***</td>
<td>0.001</td>
<td>0.002***</td>
<td>0.003***</td>
</tr>
<tr>
<td>× Status Squared</td>
<td>n.s.</td>
<td>-0.002***</td>
<td>n.s.</td>
<td>n.s.</td>
<td>-0.001***</td>
</tr>
<tr>
<td><strong>Time-Varying Controls</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organization Size (time t-4)</td>
<td>0.030***</td>
<td>0.014</td>
<td>-0.007</td>
<td>0.002</td>
<td>-0.011</td>
</tr>
<tr>
<td>Economic Resources (time t-4)</td>
<td>-0.014</td>
<td>-0.035**</td>
<td>-0.008</td>
<td>-0.013***</td>
<td>0.012***</td>
</tr>
<tr>
<td>Tuition Dependence (time t-4)</td>
<td>0.128*</td>
<td>-0.113*</td>
<td>-0.382***</td>
<td>0.124***</td>
<td>0.157***</td>
</tr>
<tr>
<td>Org. Slack (time t-4)</td>
<td>-0.04</td>
<td>-0.109***</td>
<td>-0.074</td>
<td>0.058***</td>
<td>0.101***</td>
</tr>
<tr>
<td>Local Area Labor Market Strength (time t-4)</td>
<td>0.006</td>
<td>0.029***</td>
<td>-0.004</td>
<td>-0.005</td>
<td>-0.014***</td>
</tr>
<tr>
<td>Local Area Prop. College Age (time t-4)</td>
<td>1.005***</td>
<td>1.170***</td>
<td>-0.866**</td>
<td>-0.355***</td>
<td>-1.023***</td>
</tr>
<tr>
<td>Proportion Vocational/Professional Graduates (time t-4)</td>
<td>0.303***</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion Technical Graduates (time t-4)</td>
<td></td>
<td></td>
<td>0.091</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion Humanities &amp; Soc. Sci. Graduates (time t-4)</td>
<td></td>
<td></td>
<td>0.180***</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proportion Sciences Graduates (time t-4)</td>
<td></td>
<td></td>
<td></td>
<td>0.299***</td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>-1.491***</td>
<td>-2.774***</td>
<td>-1.399***</td>
<td>-2.208***</td>
<td></td>
</tr>
<tr>
<td>Wald Chi square</td>
<td>740.406</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loglikelihood</td>
<td>-26288.4</td>
<td>5281.702</td>
<td>544.385</td>
<td>11547.92</td>
<td>7144.326</td>
</tr>
<tr>
<td>Number of observations</td>
<td>10,122</td>
<td>9,849</td>
<td>6,768</td>
<td>9,971</td>
<td>9,945</td>
</tr>
</tbody>
</table>

* p<0.05, ** p<0.01, *** p<0.001

Note: Model estimation controls for all stable characteristics of colleges and universities. Curvilinear effects reported where significant. Robust standard errors in parentheses.
Figure 1. Average Annual Changes in Three Measures of Organizational Differentiation, 1970-1990

Note: Variety is calculated using a Simpson Index based upon the four program areas (Vocational/Professional, Technical, Humanities & Soc. Sci., and Sciences). Number is the total count of programs. Distance is computed based upon the Jaccard measure of profile similarity for all organizations across 277 program categories in a given year (reverse coded here to indicate distance). On average, the Simpson index increases from .58 to .6; the number of programs increases from around 30 to 38; and the Jaccard similarity index decreases from .29 to .25.
Figure 2. Organizational Status Hierarchy of College and University Derived from Presidents’ Similarity-Emulation Choices (IDA Survey)

Note: The 215x215 matrix represents a subset of the total sample of 829 universities and colleges – those that were mentioned by four or more surveyed presidents. Cells indicate the number of presidents who responded that their college or university resembled the one listed in row $i$ while hoping to resemble the one listed in column $j$ (darker cells represent higher counts of presidents making an $ij$ emulation). Organizations are ordered from highest to lowest in the reputational prestige measure.
Figure 3. Predicted Changes in Probabilities of Status Evaluation Upgrades/Downgrades based upon Five-Year Changes in Program Profiles

Model 3

Model 4

Model 9

Model 8

Note: Predictions are for public Research I universities for the average five-year period. Status based upon selectivity score (high = 6 for upgrade models, 7 for downgrades; low = 1 for upgrades, 2 for downgrades; middle = 4 in all models).
Figure 4. Average Annual Program Adoption Rates and Proportion of Adopted Programs by Area within Organizational Status Levels, 1970-1990
Figure 5. Average Decennial Changes in Proportions of Undergraduate Programs in Profiles by Status Level
Figure 6. Decennial Changes in the Average Number of Specialized Programs by Area and Organizational Status
Appendix A: Undergraduate Programs

**Vocational/Professional**
- Accounting
- Adult Ed
- Advertising
- Agriculture Business Other
- Applied Math
- Architectural Urban Planning
- Architecture
- Architecture Other
- Art
- Art Teacher Education
- Bilingual/Bicultural Education
- Bookkeeping
- Business
- Business Administration
- Business Management Other
- Business Teacher Education (Vocational)
- City Planning
- Communications
- Communications Technology
- Community Organization
- Computer Programming
- Counseling Psychology
- Counselor Ed
- Crafts and Design
- Creative Writing
- Criminal Justice
- Criminology
- Curriculum and Instruction
- Dance
- Data Processing
- Dental Technology
- Dental Hygiene
- Dentistry
- Driver and Safety Teacher Education
- Early Childhood Education
- Ed. Supervision
- Educ. of the Specific Learning Disabled
- Education
- Education Administration
- Education of the Blind
- Education of the Deaf & Hearing Impaired
- Education of the Emotionally Handicapped
- Education of the Gifted and Talented
- Education of the Mentally Handicapped
- Education of the Multiple Handicapped
- Education of the Physically Handicapped
- Education of the Speech Impaired
- Educational Psychology
- Elementary Education
- Environmental Design
- Family Resource Management
- Family Studies
- Film Production
- Foods and Nutrition
- Health Administration
- Health Teacher Education
- Health Technology Other
- Higher Education Administration
- Home Economics
- Home Economics Other
- Hotel and Hospitality Management
- Housing Studies
- Human Resources Management
- Information Science
- Institutional Food Services Admin.
- Interior Architecture
- Intermediate Education
- International Business
- Investments and Securities
- Journalism
- Landscape Architecture
- Library Science
- Library Science Other
- Management Science
- Marketing
- Mathematics Teacher Education
- Medical Technology
- Medical Administration Other
- Music Performance
- Music Teacher Education
- Nursing
- Nutrition
- Parks and Recreation
- Pharmacy
- Photography
- Physical Education Teaching and Coaching
- Physical Therapy
- Public Administration
- Public Administration Other
- Public Relations
- Radio and TV
- Reading Teacher Ed.
- Real Estate Management
- Science Teacher Education, General
- Secondary Education
- Social Work
- Social/Philosophical Foundations of Education
- Special Education
- Speech Pathology
- Technology/Industrial Arts Teacher Educ.
- Textiles
- Transportation Management
- Visual Arts
- Visual and Performing Arts
- Technical
- Aerospace, Aeronautical and Astronautic Engineering
- Agribusiness Operations
- Agricultural Economics
- Agricultural Engineering
- Agriculture
- Agriculture Other
- Agronomy
- Agricultural Business
- Animal Sciences
- Applied Mathematics, General
- Architectural Engineering
- Bioengineering & Biomedical Engineering
- Ceramic Sciences and Engineering
- Chemical Engineering
- Civil Engineering, General
- Computer Engineering
- Computer Science
- Computer Science Other
- Computer Systems Analysis
- Dairy Science
- Electrical, Electronics & Communication
- Engineering Mechanics
- Engineering Physics
- Engineering, General
- Environmental/Environmental Health Engineering
- Food Sciences
- Forest Production Technology
- Forestry
- Geological Engineering
- Geophysical Engineering
- Horticulture
- Industrial/Manufacturing Engineering
- Material Engineering
- Mechanical Engineering
- Metallurgical Engineering
- Mining and Mineral Engineering
- Natural Resources
- Naval Architecture & Marine Engineering
- Nuclear Engineering
- Ocean Engineering
- Petroleum Engineering
- Poultry Science
- Range Science
- Soil Sciences
- Textile Sciences and Engineering
- Humanities & Soc. Sci.
- African Studies
- American Indian Studies
- American Studies
- Anthropology
- Arabic
- Archeology
- Area Studies Other
- Art History
- Asian Studies
- Biblical Languages
- Biblical Studies
- Black Studies
- British Lit.
- Business Economics
- Chicano Studies
- Chinese
- Classical Languages and Culture
- Classics
- Clinical Psychology
- Comparative Literature
- Demography
- Developmental and Child Psychology
- Drama
- East Asian Studies
- Eastern European Area Studies
- Economics
- English Language and Lit.
- European Studies
- Experimental Psychology
- Finance
- Finance Other
- Foreign Languages General
- French
- Geography
- German
- Greek
- Hebrew
- History
- Humanities
- Industrial and Organizational Psychology
Interdisciplinary Studies
International Relations
Islamic Studies
Italian
Language and Literatures Other
Latin American Studies
Legal Studies
Liberal Arts
Liberal Arts Other
Linguistics
Literature Other
Middle Eastern Studies
Music History
Organizational Behavior
Philosophy
Physiological Psychology
/Psychobiology
Plant Pathology
Political Science
Psychology
Psychology Other
Public Health
Religious Education
Religious Music
Religious Studies
Russian
Russian and Slavic Area Studies
Scandinavian Languages
Slavic Languages
Social Psychology
Social Sciences
Social Sciences Other
Sociology
South Asian Languages
South Asian Studies
Southeast Asian Studies
Spanish
Speech and Rhetoric
Theology
Urban Affairs
Western European Studies

Science
Analytical Chemistry
Anatomy
Astronomy
Astrophysics
Atmospheric Sciences and
Meteorology
Biochemistry
Biological and Physical Sciences
Biology
Biometrics
Biophysics
Botany
Botany Other
Cell Biology
Chemistry
Chemistry Other
Earth and Planetary Sciences
Ecology
Entomology
Genetics
Geochemistry
Geology
Geophysics and Seismology
Inorganic Chemistry
Marine Biology
Mathematical Statistics
Mathematics

Mathematics Other
Metallurgy
Microbiology/Bacteriology
Molecular Biology
Neuroscience
Nuclear Physics
Oceanography
Organic Chemistry
Paleontology
Pathology, Human and Animal
Pharmacology, Human and Animal
Physical Sciences
Physical Sciences Other
Physics
Physiology, Human and Animal
Plant Physiology
Toxicology
Zoology, General
Endnotes


2 However, abandoning programs is likely a more complex signal. Indeed, many Ivy League universities did offer undergraduate business degrees, but abandoned these as part of a post-WWII professionalization project (see Daniel 1998). As Gumport and Snydman (2002) discuss, higher education curricula has historically expanded in response to various changes in their environments; so abandonments during this period were often highly idiosyncratic and contentious affairs. For these reasons, program abandonments merit a separate analysis.

3 I tested for systematic differences between the sample and all American colleges and universities during this period as reported in NCES surveys. Key characteristics of age, size, institutional control, and tuition showed no significant differences, suggesting that the sample is representative of four-year institutions.

4 I thank Paula England and Su Li for sharing their detailed crosswalk for these data.

5 I estimated models using random effects, as well as with fractional logit models, and these produced similar results. However, fixed effects offer a more rigorous test and have not at present been clearly extended to fractional logit models.

6 I thank John Levi Martin for making this suggestion.

7 I tested a number of ways to classify programs relevant to the framework, including those taking directly into account shifts in program popularity during the period. Because results were highly consistent with those based upon the more known and validated Biglan taxonomy, I report those here for greater continuity with prior research.

8 I performed similar factor analyses on smaller sets of colleges and universities (generally numbering between 100 and 350), using additional status measures such as the 1967 Gourman Report, the 1970 Coleman study, and an average departmental quality ranking from the 1995 National Research Council, none of which are available for the full sample. These produced very similar reputational prestige factors that were highly correlated with those used here. Due to the limited availability of these data, and the difficulty in collecting time-varying status measures, rather than using a reduced sample or period, I employed these additional measures only as checks on the current measure’s validity.

9 However, it is possible that at the level of departments and schools that such downsizing did occur, and wouldn’t be detected at the level of programs, because programs can be re-attached to different academic units.