ABSTRACT

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This dissertation comprises three essays. Each essay challenges some of the commonly held beliefs about and provides novel insights into the role of status in markets. In essay 1, I study the causal effect of producer status on the price premiums producers are able to charge for their products, the underlying cause for this premium, and producers' incentives to invest in quality under a fixed status hierarchy. In essays 2 and 3, I investigate on the organizational and individual level, respectively, how high-status affiliations affect an audience's evaluation of a social actor's identity. The contribution of these papers lies in highlighting reasons for, mechanisms through, and conditions under which high-status affiliations become a liability.

Essay 1 addresses the recent debate about the causality, cause, and consequence of returns to status on the organizational level. I exploit the *grand cru* classification of chateaux of the Médoc created in 1855 as an unambiguous and exogenous status signal. I study its effect on wine prices and the incentive to invest in quality over a period of time during which information about producer and product quality has become increasingly munificent. As for the causality of status effects, I find evidence for causal returns to organizational status, but these returns are substantially overestimated if quality and reputation are not accurately controlled on the product level. As for the cause of status effects, I find that uncertainty is not a necessary condition and the taste for high-status products is a sufficient condition for returns to organizational status. As for the consequence of status effects, I find that higher-status producers' greater incentives to invest in quality are insufficient to enforce a separating equilibrium in producers' quality

choices. The study cautions that causality claims in the status literature hinge upon proper identification, that returns to status can have alternative root causes, and that status hierarchies need not enshrine the quality hierarchy among producers.

In essay 2, I propose that an organization's growth potential may suffer if its identity is confounded with or eclipsed by the high-status organizations with which it collaborates and competes. I devise two network measures to capture the degree to which identities are confounded or eclipsed. The theory is then tested with data on U.S. venture capital firm syndication between 1995 and 2009. The more a VC firm's identity is confounded with the identities of co-syndicating high-status firms, the smaller is the likelihood that it is able to raise a new fund. Further, the likelihood that an eclipsed identity hurts a VC firm's chances to raise a new fund increases in the firm's status. These findings suggest that in status-based market competition an organization needs to justify its identity claim by distinguishing itself from the established elite.

Essay 3 picks up on anecdotal evidence that some audiences discount actors with strong high-status affiliations. This contradicts the extant literature, which in its overwhelming majority finds that an actor's chance to find audience approval for his identity increases in the strength of his high-status affiliations. In this article, I develop a unifying theoretical framework that is able to reconcile such seemingly contradictory effects. I propose that the optimal strength of high-status affiliations depends on an audience's taste for uniqueness/conformity in identity and the audience's uncertainty about the actor. An experiment shows that taste and uncertainty have interdependent effects, suggests that the extant status literature rests on implicit assumptions about audience taste, and highlights two conditions under which strong high-status affiliations are detrimental. Studies of rank mobility in academia and in a fraternity provide corroborating evidence for one of these conditions. Conformity-seeking audiences penalize too strong high-status affiliations if their uncertainty about the actor is high. The implications for identity design and social structure are discussed.

ESSAYS ON HIGH-STATUS FALLACIES

by

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To my family

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Introduction

This dissertation addresses two broad sets of topics in the organizational status literature. In essay 1, I investigate whether returns to organizations can be causally attributed to their positions in a status hierarchy, why these returns arise, and whether the status hierarchy disables lower-status organizations to recoup investment in quality. In essays 2 and 3, I extend the existing affiliation-based status literature and study the conditions under and reasons for which organizations and individuals may suffer from high-status affiliations.

Essay 1 tackles the issue of causality in organizational status research. Status positions are neither experimentally assigned to organizations nor are they typically fixed. They are, at least initially, acquired through the demonstration of quality. If quality drives status acquisition, then status is a byproduct of quality first and potentially an asset second. Moreover, if status enables a firm to continue to produce at high levels of quality and the continued demonstration of quality allows the firm to acquire even more status, then there is an endogenous feedback loop between status and quality.

From this brief discussion becomes apparent the empirical challenge to identify causal status effects. If status were "only" a byproduct of quality, it would suffice to account for all heterogeneity in quality in order to estimate causal status effects. This is itself difficult enough in the organizational literature in which controls for quality are often coarse. Moreover, recent literature on the individual level suggests that accounting for organizational quality would not be enough and that quality needs to be controlled at the product level to estimate the causal effects of status. In the case of a feedback loop between status and quality, however, standard estimators will generally produce biased estimates (Azoulay et al., 2011). This highlights unaddressed challenges in the extant organizational status literature.

In chapter 1, I address these issues. I exploit the *grand cru* classification of chateaux in the Médoc as an exogenous status signal cannot be reversely affected by the quality a producer

chooses to produce or the price the producer charges for its products. The status signal was directly bestowed upon a set of one-product organizations that produces wines dominated by Cabernet Sauvignon, from a very narrow geographic locale, and which undergo the same market mechanism. Using semi-parametric, instrumental variable, and matching estimators, I identify the causal effect of status on the prices the producers are able to charge for their wines. Even after accounting for increasing marginal returns to product quality and the reputation for quality, status returns increase at the margin. They accrue almost exclusively to the highest-status producers.

The context also allows to study whether two central conjectures in the organizational status literature hold true in this context: i.) that status benefits arise because status acts as a signal of quality when there is high uncertainty about producer or product quality and ii.) that the status hierarchy prevents low-status producers from breaking into the quality elite because they are unable to recoup their investments in quality. Neither conjecture is found to be true in this context. The evidence suggests that status benefits arise because of conspicuous consumption, and low-status producers can recoup their investments in quality.

In essay 2, I study how firms can create a distinctive identity by setting themselves apart from high-status organizations in their industry. The study departs from the observation that within the categorical boundaries of an industry high-status affiliations embody an element of competition between identities. This requires to distinguish the status of an organization from the status of its exchange partners, but the extant organizational status literature that studied status benefits within industries has neglected this distinction.

Developing a structural approach to the distinctiveness of identities, I propose two concepts, *eclipsing* and *confounding*, that capture how high-status affiliations infringe upon the distinctiveness of an identity. Eclipsing rests on the status asymmetry between the focal firm and its highest-status exchange partner(s). Confounding rests on the overall integration of a firm's identity with its affiliates. I then develop measures for eclipsing and confounding for networks

of discrete exchanges.

I test the hypotheses that eclipsed and confounded identities are penalized by their audiences with data on venture capital syndication between 1995 and 2009. Venture capital firms with eclipsed and confounded identities are less likely to be able to raise a new venture fund. Firm's with confounded identities are less likely to be able to raise a new venture capital fund. This effect is stronger for higher-status firms. Having an eclipsed identity does not have a negative effect on low-status firms, but its harmfulness increases in a firm's own status and becomes significant for higher-status firms. This suggests that higher-status firms, in particular, need to validate their identity claim by distinguishing themselves from the established elite. The study contributes to the status and identity literatures by taking a structural network approach to identity, highlighting the important distinction between own and affiliate status, developing the concepts of and measures for eclipsed and confounded identities, and providing initial evidence for that audiences penalize eclipsed or confounded identities.

Essay 3 addresses the issue of identity creation on the individual level. Similar to essay 2, the central claim of this chapter is that high-status affiliations can negatively affect a social actor's rank mobility. I start from anecdotal evidence that audiences with a taste for uniqueness may penalize high-status affiliations. I then develop a theoretical model that intersects two influences that shape the lens through which audiences evaluate identities: the uncertainty about a social actor's intrinsic quality and the audience's taste for uniqueness or conformity.

An experimental test of the developed theoretical framework reveals two conditions under which audiences penalize high-status affiliations. Audiences with a taste for uniqueness penalize actor's for high-status affiliations even when they are certain about the intrinsic quality of the actor. Under uncertainty, conformity-seeking audiences reward moderately-strong but penalize very strong high-status affiliations. The theoretical rationale for this penalty is that strong high-status affiliations eventually increase the audience's doubt about the social actor's merit.

Two studies of rank mobility in academia and in the Newcomb fraternity test the experimental results for conformity-seeking audiences under uncertainty. The results corroborate the experimental findings. The likelihood to receive tenure is inverse U-shaped in the proportion of articles graduates from high-status institutions have published with coauthors from their alma mater or dissertation committee. Likewise, the rank mobility of a fraternity member among the lower-status members of the fraternity is inverse u-shaped in his popularity with the high-status members of the fraternity. The essay contributes to our understanding of the conditions under which high-status affiliations infringe upon rather than contribute to the merit attributed to social actors' identities.

Chapter 1

On the causality, cause, and consequence of returns to organizational status: Evidence from the *grands crus classés* of the Médoc

Accumulating empirical evidence suggests that organizations benefit from high-status positions in the form of future status growth, revenues, capital acquisition, survival chances, innovation, and technological dominance (Benjamin and Podolny, 1999; Bothner, Kim, and Lee, 2011; Khaire, 2010; Podolny and Phillips, 1996; Podolny, 1993; Podolny and Stuart, 1995; Podolny, Stuart, and Hannan, 1996; Stuart, Hoang, and Hybels, 1999; Stuart, 2000). However, truly *causal* evidence for status effects is rare and confined to the individual level (Simcoe and Waguespack, 2011; Azoulay, Stuart, and Wang, 2011). The scarcity of evidence for causal status effects is attributable to two endogeneity concerns that commonly plague the literature. The first is whether cognate constructs such as quality and reputation are accurately controlled for in the empirical strategy (cf. Benjamin and Podolny, 1999; Bothner, Godart, and Lee, 2010b;

Washington and Zajac, 2005). The second is the concern that the relationship between status, quality, and the organizational outcome of interest may be simultaneously determined. In fact, Azoulay, Stuart, and Wang (2011) show on the individual level that status effects are vastly overestimated if these concerns are not properly addressed. This challenges the causality claims in much of the extant organizational status literature. The first goal of this paper is to provide evidence for the causality of status effects on organizations and to investigate how status affects producers' incentives to invest in quality.

The second goal of this paper is to distinguish different causes for returns to organizational status. Extant organizational literature has pointed to the roles uncertainty and deference play in generating returns to status (Podolny, 2005). However, the literature has either used these arguments jointly without discriminating between the two or focused on uncertainty as the driver of status returns. Yet, Benjamin and Podolny's (1999) discussion suggests that even though these mechanisms are not incompatible, they are theoretically distinct. The uncertainty mechanism lends itself to the *status as a signal of quality* perspective (Podolny, 2005). By contrast, the deference mechanism lends itself to the idea of *conspicuous consumption* (Bagwell and Bernheim, 1996; Bourdieu, 1984; Corneo and Jeanne, 1997; Leibenstein, 1950; Rae, 1834; Veblen, 1899). That is, buyers develop a taste for high-status goods in order to distinguish themselves from others and elevate their own status. Aligned with this argument, recent experimental evidence shows that pure taste affects returns to status on the individual level (Malter, 2011) and that consumers use goods more generally to signal their identity (Berger and Heath, 2008). In this study I empirically distinguish between uncertainty and conspicuous consumption as the root causes of returns to organizational status.

I situate the empirical analysis in the context of Bordeaux wines. To establish the causality of status effects, I analyze whether the *grand cru* classification of chateaux of the Médoc (cf. Markham jr., 1998), which sorted 61 producers into five *grands crus classés* in 1855, exerts an influence on wine prices today. The advantage of this setting over previous studies is that a

chateau's *grand cru classé* is an unambiguous status cue that cannot be reversely affected by demonstrations of quality (e.g., Rosen, 1981), reputation (e.g., Shapiro, 1982, 1983), or price (e.g., Bagwell and Bernheim, 1996; Bourdieu, 1984). Thus, status is a truly exogenous variable in this context. The context also allows to separate status from product quality and reputation, because rating agencies provide wine ratings from blind tastings as an unbiased measure of quality. This allows to cleanly test the causal effect of organizational status and inspect how status returns affect the incentives to invest in quality across status classes. The root cause for status effects, if any, is investigated by studying status effects over a period of time during which information about product and producer quality has become increasingly available due to the proliferation of the internet.

The analyses show strong support for causal returns to organizational status, but mostly to the highest-status producers. This result is robust to using an instrumental variable and a very intuitive matching estimator. However, in spite of causal returns to status, the results show that status effects are substantially overestimated if quality or reputation are not controlled on the product level and if the empirical strategy disallows increasing marginal returns to quality or reputation. This cautions that much of the extant status literature that relies on relatively weak quality controls on the organizational rather than the product level or on linear modeling might attribute returns to status that are truly driven by differences in underlying quality.

Further, the highest-status producers have the greatest incentive to invest in quality (cf. Benjamin and Podolny, 1999). Yet, the incentive structure does not seem to enforce a separating equilibrium in producers' quality choices. I discuss alternative explanations as to why average quality is so strongly stratified along the boundaries of class status despite the strong incentive to invest in quality even for lower-status producers. Finally, the results of this study point to a different root cause for returns to status than most of the extant organizational status literature. The evidence is much in favor of conspicuous consumption as the underlying driver of returns to status in this market (Bourdieu, 1984; Rae, 1834; Veblen, 1899). This complements extant

status literature, which mainly finds that status acts as a signal of quality when there is high uncertainty about producer or product quality (Azoulay, Stuart, and Wang, 2011; Podolny, 1993, 1994, 2001, 2005; Simcoe and Waguespack, 2011; Stuart, 2000; Stuart, Hoang, and Hybels, 1999).

1.1 Organizational status effects

1.1.1 The endogeneity of organizational status effects

Status cues are cues about an entity's positional superiority by which audiences form beliefs about its desirable properties (Berger, Rosenholtz, and Zelditch Jr., 1980). Organizational status theory has proposed that status signals serve as cues by which audiences such as customers, investors, or other exchange partners form beliefs about the quality of the organization or its products or services (Podolny, 2005). In both micro- and macro-sociological status theory there are strong advocates for the idea that the initial acquisition of status is related to differentials in underlying quality and that status is generally positively correlated with quality (Benjamin and Podolny, 1999; Blau, 1964, 1977; Homans, 1974; Podolny, 2005; Ridgeway, 1991). It is a central claim and concern of status theory that status can take on its own dynamic and create a self-reinforcing cycle of rewards and status accretion (Merton, 1968; Podolny, 1993; Podolny and Phillips, 1996; Ridgeway, 1991; Ridgeway and Erickson, 2000).

However, this self-reinforcement of status, commonly referred to as *Matthew effect* (Merton, 1968), can occur in two ways. If demonstrations of quality are financially rewarded *and* generate status, then the returns to quality will not only enable a producer to continue the production at high levels of quality but also further the producer's status growth. On the other hand, if status is in and of itself a valued characteristic, then returns to status and status growth may be self-reinforcing irrespective of quality. The difficulty to identify *causal* status effects is appar-

ent from the difference between the two mechanisms. In the first case, status is a reflection of current or past quality but not causally responsible for these returns, whereas in the second case status is valued in and of itself and its effect is causal in this sense.

The empirical challenge is to discern the two because not only status, but also quality and reputation have been shown to increase organizational performance (Landon and Smith, 1998; Rao, 1994; Roberts and Dowling, 2002; Shapiro, 1982, 1983). A failure to accurately account for the returns to quality or reputation will generally result in an overestimation of status effects if status is indeed positively correlated with quality and reputation (Benjamin and Podolny, 1999). Status and reputation may be particularly difficult to discern because they are by definition cumulative and cognate constructs (Bothner, Godart, and Lee, 2010b). In line with this argument, Azoulay, Stuart, and Wang (2011) show with data on Howard Hughes Medical Investigators and closely matched scientists who were equally prolific but not appointed that status effects are vastly overestimated in traditional fixed-effects analyses if quality is not tightly controlled on the product level. This calls into question much of the organizational status literature because the controls for quality, even though carefully selected, are often weak and confined to the organizational rather than the product level. Finding tight controls for quality and reputation on the product level is an obvious challenge in organizational contexts. In particular, measuring product quality for service or multi-product organizations, for which quality is a multidimensional and possibly latent construct, is prone to measurement error.

Even if quality controls on the product level are available, they must still be modeled appropriately. Rosen (1981) points out that in some markets even slightly lower quality is a poor substitute for higher quality. Arguably, this is particularly true for markets in which status is commonly believed to matter the most. For example, any number of bad piano performances may not be a good substitute for one spectacular performance, and any number of bottles of mediocre wine may be a poor substitute for one extraordinary bottle. Such markets will generally be characterized by increasing marginal returns to quality. Thus, if returns to quality or

reputation are modeled without allowing for increasing marginal returns, status is likely to pick up their effects without being causally responsible for them. Both the lack of quality controls on the product level and the potential misspecification of the functional form of the relationship between quality or reputation and the organizational outcome of interest are likely to induce missing variable bias.

In addition, there is also the concern that the entire system between status, quality, and price— the organizational outcome of interest in this study— may be endogenously determined due to reverse causality. As Benjamin and Podolny (1999) noted in their analysis of the Californian wine industry: "We do not wish to assert that differences in structural position are completely exogenous, nor that differences in quality have no effect on structural position. There is undoubtedly a reciprocal relationship between the level of quality that a firm achieves and the structural position that a firm obtains." This problem of reverse causality, which is displayed in the left panel of figure 1, will generally result in fragile inference if the direction of causality cannot be ascertained. The subsequent discussion of this issue follows conceptually and extends recent discussions of this matter by Azoulay, Stuart, and Wang (2011) and Simcoe and Waguespack (2011).

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Insert figure 1 here

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The first concern is that the relationship between status and quality may be endogenously determined. Micro- and macro-sociological treatments of status suggest that producers who occupy higher-status positions also produce at higher levels of quality. *Noblesse oblige*. A high-status producer that produces at low levels of quality risks losing status (e.g., Homans, 1974; Podolny, 2005). However, high quality may also result in immediate status acquisition. To remain in the empirical context: if a winery like *Screaming Eagle* produces a wine that receives an almost

perfect score from several wine critics in its first vintage, this may lead to immediate status acquisition.[1]

The relationship between status and price may also be endogenous. It is the core argument and concern of status theory that status generates returns in its own right, resulting in cumulative advantage. Thus, status should positively affect the price an organization charges for its products or services (or more generally the outcome variable of interest). However, status itself may be a function of price. Only few can afford to expend the means to acquire high-status products or services. Therefore, a higher price is the most basic sign of distinction or class status, which is why higher prices may directly lead to being accorded higher status (cf. Bourdieu, 1984; Rae, 1834; Veblen, 1899).

Finally, the relationship between quality and price may be endogenous, as well. Naturally, one would expect higher-quality products or services to fetch higher prices. But in an equilibrium model the quality produced will itself be a function of the price the organization expects to be able to recoup for a given level of quality. If some organizations are disadvantaged so that they are not able to recoup the costs of high quality (costs that presumably increase at the margin), then the expected price will reversely affect the level of quality at which an organization chooses to produce. This discussion implies that the entire system of status, quality, and price may typically be simultaneously determined. Neglecting these potential reverse causalities will generally result in biased and inconsistent estimates and put researchers at risk of drawing wrong inferences.

To address these issues, the present study improves upon previous work that has sought to discern effects of status from effects of quality or reputation (Benjamin and Podolny, 1999; Washington and Zajac, 2005). An investigation of the *grands crus classés* of Bordeaux substantially simplifies the problem to provide identification, as displayed in the right panel of figure 1. The *grand cru* classification of 1855 cannot be reversely affected by demonstrations of quality, by

[1] The first vintage, 1992, received 96 points from the *Wine Spectator* and 99 points from Robert Parker.

reputation, or by the price an organization charges for its products. The classification is thus an exogenous, unambiguous status cue that can be cleanly separated from quality and reputation. To provide identification, the empirical strategy needs to be concerned only with the one remaining potentially endogenous relationship, the relationship between quality and price. This considerably reduces the complexity of the task to isolate the causal effect of organizational status.

Only few studies effectively overcome these endogeneity concerns, typically by using status shocks as natural experiments. However, so far these studies are confined to the individual level. For example, Simcoe and Waguespack (2011) exploited the fact that names of high-status authors on submissions to the Internet Engineering Task Force were randomly obscured by *et al.* if the workload of the office processing these submissions was high. They found that obscuring the name of high-status authors significantly reduced the attention the community paid to drafts submitted by groups of individual authors. Azoulay, Stuart, and Wang (2011) studied the effect of scientists being appointed as Howard Hughes Medical Investigators on the citations to the articles they published *before* the appointment. Comparing HHMIs with closely matched scientists that were not appointed, they find that status effects are relatively small and short-lived. As discussed earlier, their results also show that status effects are vastly overestimated if the relationship between status and quality is not tightly controlled on the product level and if a standard fixed-effects estimator is applied. Finally, Roberts, Khaire, and Rider (2011) show that hiring a prominent winemaker increases the price of a wine on whose quality the newly hired winemaker did not have an influence.[2] This rare causal evidence is confined to the individual level or to status transfer from individuals to organizations. In contrast to this literature, the interest of this study lies in the causal effect of organizational status on organizational outcomes.

[2]Roberts, Khaire, and Rider (2011) find a significant influence of hiring a prominent winemaker and insignificant influences of hiring a non-prominent winemaker or of hiring a winemaker internally. However, as far as one can reproduce from the regression table, the effects for different hires do not seem to be significantly different from each other even though they are strongest for hiring a prominent winemaker.

1.1.2 The causes of returns to organizational status

A critical assumption in Podolny's conception of organizational status is that audiences infer organizational quality from status cues.[3] Therefore, there needs to be residual uncertainty about quality in order for a status cue to be valuable (e.g., Podolny, 2001, 2005). By Podolny's conception, audiences would not (have to) rely on status cues to infer quality if quality were perfectly observable. There is, in fact, strong empirical evidence that status cues generate greater returns if there is greater uncertainty about the producer (Azoulay, Stuart, and Wang, 2011; Simcoe and Waguespack, 2011; Stuart, Hoang, and Hybels, 1999; Stuart, 2000).

In this study I allow for an alternative explanation of status effects. The alternative explanation to Podolny's uncertainty assumption is that status goods are positional goods (Hirsch, 1977) that can signal distinction and elevate a buyer's status (Bourdieu, 1984; Rae, 1834; Veblen, 1899). This conception of status differs from Podolny's and his colleagues' in that it does not assume that uncertainty is a necessary condition for returns to status. While this conception of status is purely social in its origin, it would have direct economic consequences for the organization.

If the connection with a high-status organization is in and of itself status-elevating, then the organization possessing a status cue will be able to negotiate better conditions with its buyers (or suppliers) independently of quality (cf. Homans, 1974; Blau, 1964; Castellucci and Ertug, 2010). For example, some people drive a Mercedes even though a cheaper Lexus offers the same level of quality and reliability. It is difficult to relate this choice to the uncertainty about the underlying quality of these cars. Instead, it may be better attributable to the differential social distinction a Mercedes provides. While Benjamin and Podolny (1999) note that the signaling perspective and the conspicuous consumption perspective are not incompatible but complementary, they point out that the view of conspicuous consumption "alone does not lend itself to the

[3] Podolny calls these cues "signals" (e.g., Podolny, 2005) and points out the difference between his conception of status signals and the conception of economic signals as proposed by Spence (1973). To avoid confusion, I use the term "cue."

hypotheses we tested." In this light, this study may be particularly informative because I study the same industry in a different country, which enables me to improve on measurements and methodology.

Whether uncertainty or the demand for positional goods drives status effects is ultimately an empirical question, the answer to which will be context-dependent. However, Podolny's signaling perspective offers clear advice how to discern these perspectives. If Podolny's view applies, returns to status should decline as the uncertainty about producer and product quality declines. By contrast, "[t]he act of conspicuous consumption is precisely the demonstration of wealth through the throwing away of money on more expensive goods that provide no greater utility but cost significantly more," (Benjamin and Podolny, 1999). Thus, a reduction of uncertainty about producer or product quality should be irrelevant if the returns to status were driven by the demand for positional goods for the purpose of conspicuous consumption.

1.2 The classification of the châteaux of the Médoc of 1855

The *grand cru* classification of 1855 was created by the Union of Brokers for the Chamber of Commerce of Bordeaux in order to be displayed on a map at the Imperial Universal Exposition in Paris. The classification sorted the presumably 61 greatest producers of Bordeaux wine at the time into five *grands crus classés*. The Union of Brokers furnished the classification of the chateaux of the Médoc based on historic prices alone. Such classifications based on value had long been a tradition in the trade of Bordeaux wine. Importantly, the classification conferred *grand cru* status directly upon the producer, thereby creating a persistent link between a chateau's identity and its status. The history of this classification is fascinating and should be interesting to scholars of status, classification, and institutions alike. However, its history is less relevant for the purpose of this paper than the mere fact of its existence. Therefore, I refer the reader to the appendix for an abridged history of the classification that draws mainly on

Markham jr.'s (1998) excellent book on the subject as well as on Cocks's (1846) and Cocks and Feret's (1883) pre- and post-classification standard works *Bordeaux: Its Wines, and the Claret Country* and *Bordeaux and Its Wines*.

Today the classification stands as one of the few examples of a not only normative, but factually impenetrable status hierarchy. The classification was factually inscribed in law in 1949 (Markham jr., 1998: 177). Over the course of its existence, it was changed only three times. It was first changed in 1855 or 1856. Soon after its creation the owner of Chateau Cantemerle, the widow Villeneuve-Durfort, appealed directly to the Union of Brokers, which had created the list, rather than to the Chamber of Commerce, which had published the list. Madame Villeneuve-Durfort was able to prove to the Union of Brokers that her wines had fetched the same prices as other classed growths and that Chateau Cantemerle had, therefore, been unjustly omitted from the classification. Since historic prices were the criterion for classification, there was no good reason for the Union to deny Chateau Cantemerle to be classified (Markham jr., 1998: 158–161). Many proprietors complained after the exposition, directing their complaints to the Chamber of Commerce rather than the Union of Brokers. The Chamber categorically refused to concern itself with these complaints and forwarded them to the Union of Brokers, which would not make any further changes, except the one it had made for Chateau Cantemerle. The second change of the classification is that of Chateau Dubignon, a third *grand cru classé*, which ceased to exist. After several changes in ownership and previous declassification, its vineyards were absorbed into Chateau Malescot St.-Exupery, also a third growth, in the 1870s. Finally, after decades of high quality and price, and lobbying by its owner, Baron Phillipe de Rothschild, Chateau Mouton Rothschild was elevated to first-growth status by then secretary of agriculture and later president of France, Jacques Chirac, in 1973. Its initial classification as a second growth in 1855 had always been a matter of debate because of its hybrid rank above all other second growths but below the other four first growths. This is to show that changes in the classification were extremely rare.

There is a theoretical mechanism in place by which a revision of the classification could be undertaken. However, it is unlikely that this will ever occur. An official revision would require the approval of all producers within a class (Markham jr., 1998: 204). Thus, producers at risk of losing their current *grand cru classé* status would have no incentive to vote in favor of a revision if status indeed conferred benefits or if it were anticipated to do so in the future. A change in the classification can thus be deemed an impossible event for all practical purposes. Given the impermeability of the classification, it is implausible to assume that producers choose their level of quality or set their price hoping that this would elevate their status in the classification. Hence, the classification stands as an unambiguous and exogenous status cue.

1.3 Data

I analyze the release prices of the *grand cru* classified wines of the Médoc. I exploit the exogenous status signal of the classification of chateaux created by the Union of Brokers for the Chamber of Commerce of Bordeaux in 1855. In order to isolate status effects, this study improves on previous studies that have analyzed the prices of Bordeaux wines (e.g., Ashenfelter, 2008; Combris, Lecocq, and Visser, 1997; Ginsburgh, Monzak, and Monzak, 1992; Hadj Ali and Nauges, 2007; Jones and Storchmann, 2001; Landon and Smith, 1997, 1998; Di Vittorio and Ginsburgh, 1996). An analysis *within* the classification of the chateaux of the Médoc avoids any ambiguity about the status cue and concerns about its exogeneity. Further, an analysis within the classification does not require homogeneity assumptions regarding the effects of quality and reputation, which are typically made for samples that pool wines from within and outside the classification. The comparative completeness of the sample—I observe ratings and prices for about 80 percent of all wines produced over the period of study—alleviates concerns about selection effects. Finally, the study of release prices obviates the complexities that an analysis of matured wines would embody.

The data source is the *Wine Spectator*'s online database. The *Wine Spectator* is a leading journal of the trade and besides Robert Parker the most prominent rating agency for wine quality. I initially downloaded the ratings and tasting notes for all red Bordeaux wines of the vintages 1980 through 2010. I then restricted the data to the wines of the 61 classified chateaux for the vintages 1991 to 2008. This is the period for which the *Wine Spectator* records hold fairly complete data on the release prices of these wines. For the period before 1991 there are few records of release prices; for the period after 2008 the release prices are not yet in the database.

Of the 61 classified growths, I excluded Chateau Haut Brion from the analyses. Haut Brion is a special case because it is the only chateau in the classification of 1855 located in Graves (specifically, Pessac-Leognan), an area outside of and not contiguous with the Médoc. It was included in the classification because of its exceptional reputation (and price) that it had had for more than 200 years at the time the classification was created.[4] However, records suggest that other chateaux in Graves would have also warranted to be classified by the standards of the classification of 1855. For example, in 1745, Chateau La Mission Haut Brion (the neighbor across the street of Chateau Haut Brion) fetched a price that would have warranted a classification as a second *grand cru classé* and Cocks's (1846) and Cocks and Feret's (1883) classic books provide historical evidence that La Mission Haut Brion was held in high regard before and after the classification was created. Chateau Haut Brion thus stands as an outsider and exception in the classification of the great Médoc wines. Its inclusion does not substantially affect the results.

The remaining 60 chateaux produced 1080 vintage wines over the 18 years of study. I observe ratings and tasting notes for 955 of these 1080 wines. For 859 of them the records contain information on the release prices of the wines. Thus, complete information is observed for about 80 percent of the *grand cru* classified wines of the vintages 1991 to 2008. From this sample I derive the variables for my analyses.

[4]Haut Brion may well have been the first cult wine. The English philosopher John Locke, who visited Haut Brion (Pontac), remarked in 1677 that prices had dramatically increased "thanks to the rich English who sent orders that it was to be got for them at any price," (as quoted in Lichine, 1967: 288–289).

The dependent variable is the *logged per-bottle price* of a wine at the time the wine was released. *Status* is measured by a chateau's *grand cru classé*, operationalized by a set of dummy variables (baseline: first *grand cru classé*). *Quality* is measured by a wine's rating as published in the *Wine Spectator*. *Reputation* is measured as the mean of the quality rating over the years $t-1$ to $t-5$. In the instrumental variable regression I use, among other variables, the mean of the quality rating over the years $t-6$ to $t-10$ to estimate current quality. 23 observations are dropped for vintage wines for which no ratings were observed over the periods $t-1$ to $t-5$ or $t-6$ to $t-10$. Because the data are only about 80 percent complete, I construct as a second control for reputation the variable *reviews*. It captures the number of vintages of the focal wine that was reviewed by the *Wine Spectator* over the years $t-1$ to $t-5$. Assuming that the likelihood of being reviewed depends on the quality of the wine itself, this should account for a chateau's self-selection into being reviewed or the *Wine Spectator's* selection into reviewing a particular chateau's wines.

The analyses will proceed as follows: I first show the association between status and quality and create the instrument for quality. I then analyze the effects of status, reputation, and quality on wine prices using parametric and semi-parametric naïve and instrumental variable estimators. Because it is unclear whether these estimators compare status strata, i.e., *grands crus classés*, that are in fact comparable, I also provide a matching estimator. Using a coarsened exact matching procedure (Iacus, King, and Porro, 2009; Azoulay, Stuart, and Wang, 2011), I hold the vintage, quality, and reputation of two wines constant and evaluate whether wines of differential status fetch significantly different prices. This estimator provides particularly intuitive and compelling evidence for causal status effects. My approaches to the identification of status effects are graphically displayed in figure 2.

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Insert figure 2 here

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1.4 Results

1.4.1 The association of status and quality

I first provide an analysis of the relationship between status and quality. To the extent that status enables or constrains the level of quality at which a producer can produce (Benjamin and Podolny, 1999), chateaux in higher grand cru classés should produce at higher levels of quality, on average. Table 1 provides comparisons for the estimated differences in average quality between pairs of *grands crus classés*.

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Insert table 1 here

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From table 1 it is evident that chateaux in higher *grands crus classés* produce higher quality, on average. For example, chateaux in the first class produce wines that are rated 3.35 points higher than wines from the second class and 5.90 points higher than wines from the fifth class, on average. These differences are highly statistically significant. By contrast, the fourth class produces wines that are rated only 0.31 points higher than wines from the fifth class. This is the only statistically insignificant difference. Generally, the quality differences are large at the top and become smaller toward the bottom of the classification. The fact that quality differs between classes necessarily implies that reputation, as measured by lagged quality, differs between classes in effectively the same way. If returns to quality or reputation were increasing at the margin (Rosen, 1981), then the returns to the highest-status chateaux would be further enhanced by the fact that differences in quality are greatest at the top of the hierarchy. This amplifies the concern that an empirical strategy that disallows increasing marginal returns to quality or reputation will overestimate status effects.

I had pointed out previously that the relationship between quality and price could potentially be endogenous because the quality that a chateau chooses to produce may depend on the price the chateau expects to be able to recoup for a given level of quality. Therefore, I estimate an instrumental variable for wine quality. To create the instrument, I regress wine quality on weather characteristics, the size of the vineyard, and reputation.[5] I estimate the linear model:

$$\begin{aligned} quality_{i,t} =& \beta_1 psrain_t + \beta_2 gsrain_t + \beta_3 arain_t + \beta_4 srain_t \\ &+ \beta_5 gstemp_t + \beta_6 atemp_t + \beta_7 stemp_t \\ &+ \beta_8 size_i + \beta_9 reputation_{i,t} + \beta_{10} reviews_{i,t} + \varepsilon_{i,t} \end{aligned} \tag{1.1}$$

where $psrain_t$ is the amount of precipitation between October and March before the growing season, $gsrain_t$ is the rain during the growing season from April through July; $arain_t$ is the amount of rain in August; $srain_t$ is the amount of rain in September; $gstemp_t$ is the average temperature between April and July; $atemp_t$ is the average temperature in August; $stemp_t$ is the average temperature in September, $size_i$ is the size chateau i's vineyard in hectares, $reputation_{i,t}$ is the average rating the wine of chateau i has received in the vintages $t-6$ to $t-10$, and $reviews_{i,t}$ is the number of the vintage wines of chateau i from the years $t-6$ to $t-10$ that have been reviewed by the *Wine Spectator*.

The results of this regression are not intrinsically interesting for the purpose of this analysis. Therefore, I omit the table and provide the coefficient estimates and standard errors in a footnote.[6] All but two of the weather variables are highly significant predictors of wine quality. Further, larger chateaux, chateaux with a better quality history, and chateaux that have been

[5]Previous research showed that weather explains more than 60 percent of the variance in the prices of matured Bordeaux wines, assuming that price is a reflection of wine quality Ashenfelter, Ashmore, and Lalonde (2009). Storchmann (2005) has directly related weather to wine quality for the wines of *Schloss Johannisberg* (located in Germany's Rhine valley) over the last 300 years. In an ordered-probit model with five levels of quality, he found that weather characteristics predicted the correct level of quality in 39.8 percent of the cases and within a one-level difference in an additional 42.8 percent of the cases. I collected daily weather data for the period of this study from http://geodata.us for the weather station at Bordeaux Merignac and aggregated the data for each month.

[6]Intercept 39.64 (4.29), $psrain_t$ 8.08 (4.16), $gsrain_t$ -5.86 (5.20), $arain_t$ -29.13 (2.10), $srain_t$ -16.34 (1.67), $gstemp_t$ 1.78 (0.17), $atemp_t$ -0.36 (0.08), $stemp_t$ -0.49 (0.08), $size_i$ 0.013 (0.004), $reputation_{i,t}$ 0.41 (0.03), $reviews_{i,t}$ 0.37 (0.09); $n = 840$; $F = 99.72$; $R^2 = 0.55$.

reviewed more consistently produce higher quality wines. The predicted values from this regression serve as the instrument for wine quality. The instrument has a 0.74 correlation with the actual quality variable. Because instrumental variable analyses are at risk of being biased and inconsistent if exogenous variables are omitted from the first stage that also affect the second stage, I repeated the subsequent analyses using a 2SLS model. In the first stage, which predicts wine quality, I included the status dummies and the logged GDP of China relative to 1991 in addition to the variables above. The analysis produced qualitatively identical results.

1.4.2 Status, reputation, and quality effects on price

To analyze the effect of status, reputation, and quality on price, I estimate four types of models. I estimate the effect of quality on price using the observed quality rating or its instrument in models that estimate the effects of quality and reputation parametrically or non-parametrically. In the parametric estimates I regress the logged per-bottle release price on either wine quality or its instrument, reputation, *grand cru classé* fixed effects, and vintage fixed effects. In the semi-parametric models I estimate the effects of quality or its instrument, and reputation non-parametrically. In these estimators the effects of quality and reputation are allowed to follow flexible, smooth functions without making assumptions about their functional form. I implement these estimators as generalized additive models using thin-plate regression splines (Hastie and Tibshirani, 1990; Wood, 2006).

$$log(price_{i,t}) = status_i + \beta_1 rating_{i,t} + \beta_2 reputation_{i,t} + \beta_3 reviews_{i,t} + vintage_t + \varepsilon_{i,t} \quad (1.2)$$

$$log(price_{i,t}) = status_i + f(rating_{i,t}) + g(reputation_{i,t}) + h(reviews_{i,t}) + vintage_t + \varepsilon_{i,t} \quad (1.3)$$

$$log(price_{i,t}) = status_i + \beta_1 \widehat{rating}_{i,t} + \beta_2 reputation_{i,t} + \beta_3 reviews_{i,t} + vintage_t + \varepsilon_{i,t} \quad (1.4)$$

$$log(price_{i,t}) = status_i + f(\widehat{rating}_{i,t}) + g(reputation_{i,t}) + h(reviews_{i,t}) + vintage_t + \varepsilon_{i,t} \quad (1.5)$$

where $status_i$ is the set of indicator variables that captures chateau i's *grand cru classé* (baseline: first class), $rating_{i,t}$ is wine i's *Wine Spectator* rating for vintage t, $\widehat{rating}_{i,t}$ is the instrument thereof, $reputation_{i,t}$ is wine i's average rating in the vintages $t-1$ to $t-5$, $reviews_{i,t}$ is the number of the vintages $t-1$ to $t-5$ of wine i that have been reviewed by the *Wine Spectator*, and $vintage_t$ is a set of dummy variables that indicate the vintage (baseline: 1991). The results of these analyses are presented in table 2.

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Insert table 2 here

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All models unanimously support strong effects of status, reputation, and quality on wine prices. The coefficients on the *grands crus classés* dummies estimate the difference in logged price between the labeled class and the first class. Note that the estimates of the status effects become smaller as the controls for reputation and quality are tightened. The estimated percentage effect of a class difference on prices can be estimated by exponentiating the difference between two coefficients. For example, models 2 and 3, which only account for reputation (quality), estimate that a first growth costs 3.22 (3.45) times the price of a second growth. A second growth is estimated to cost 1.34 (1.35) times the price of a third growth. Yet, model 10, the model that accounts for both reputation and quality using non-parametric smoothing splines, estimates that a first growth will cost only 2.29 times the price of a second growth, and a second growth 1.20 times the price of a third growth. This indicates that a failure to account for reputation or quality on the product level results in a substantial overestimation of status effects, which may be particularly critical to researchers' inferences if the estimated status effects are small *ex ante*.

Note that the estimates of the status effects are larger when I impose the restriction that the influence of quality or reputation on the logged price is linear, rather than when it is estimated non-parametrically. Even an exponential growth curve, which is implied by the log-linear specification of the OLS regressions, is insufficient to account for the increasing marginal returns to

quality. The estimated smooth functions for the effects of quality and reputation on the logged price for model 10 are shown in figure 3.

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Insert figure 3 here

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The figures show that the effects of quality and reputation are very imprecisely estimated at the low end of their respective distributions because the data are extremely sparse at this end. The very low end of the quality and reputation distributions should thus be disregarded. In the densely populated range of data, however, the lines are initially still flat, implying that there are no returns to quality and reputation below the thresholds of 89 and 87 points, respectively. Only above these thresholds do I find evidence for large and increasing marginal returns to quality and reputation. For example, based on model 10, a wine with a 95-point rating is estimated to cost about 65 percent more than an otherwise identical wine with a 90-point rating, as can be derived from the left panel of figure 3.[7] Consistency in being reviewed also has a significantly positive effect on price, but the effect size is generally smaller than that of quality and reputation.

As the dependent variable is the logged price, exponentiating the product of a coefficient and an assumed change in the independent variable of interest captures the multiplier of the per-bottle price. Because status has returns on its own, this implies that the absolute-dollar effect of higher quality will be greater for the higher-status chateaux. In other words, the difference in price between a, say, 95-point wine and a 93-point wine will typically be greater for a first growth than for a second growth, and so on. For instance, Chateaux Lafite (first growth) and Leoville Las Cases (second growth) both produced 95-point wines in 2006 and 91-point wines in 2007. The release prices of the 2006 and 2007 Lafite were $590 and $434, whereas the release prices of Leoville Las Cases were $225 and $166, respectively. While the percentage

[7]The value of the smooth function is approximately 0 at 90 points and 0.5 at 95 points. Exponentiating the difference yields 1.65, which is the estimated price of a 95-point wine relative to a 90-point wine.

difference is almost exactly the same for both wines (–26 percent), the difference in absolute dollars is obviously vastly different (–$156 vs. –$59).

The incentive to invest in quality thus differs among classes. The highest-status chateaux have the greatest incentive to invest in quality, which seems to provide an equilibrium rationale as to why quality is strongly stratified along the class boundaries. However, at least in this market this does not preclude lower-status producers from participating in the high-quality segment. For example, Chateau Pontet Canet, a fifth growth, increased its 10-year average quality between 1998 and 2008 from 87.2 to 92.0 points. The wine fetched about $27 in 1998, but $80 in 2008. By contrast, Chateau Gruaud Larose, a second growth, increased its 10-year average quality only from 88.2 to 90.4 points during the same time. As a consequence, Gruaud Larose fetched $45 in 1998 and $46 in 2008.

However, all producers in this market fetch prices well above marginal costs. The upper bound of the estimate for the production costs of a first growth was $21 in 2008.[8] Thus, even though it is true that higher-status chateaux have considerably greater incentives to invest in quality, this disadvantage of the lower-status chateaux is obviously not large enough to void lower-status chateaux' incentives to invest in quality to the point that they produce at or above the level of producers in a higher class. In this light, it is surprising that not more chateaux have invested in quality improvements like Chateau Pontet Canet did and that not more chateaux engage in an arm's race for quality. I reflect on the alternative explanations for this phenomenon in the discussion.

1.4.3 A matching estimator of status effects

The previous analysis provides evidence of returns to status, reputation, and quality with a defensible claim to causality. However, given the correlation between quality and status, it is

[8] Source: http://www.decanter.com/news/wine-news/486015/bordeaux-pricing-immoral; last accessed September 16th, 2011.

unclear whether there is sufficient overlap in quality between pairs of classes to compare each class to every other class. The comparison of pairs of *grands crus classés* would be an out-of-sample extrapolation if that pair did not actually contain chateaux that produce at the same level of quality. This would happen if the status difference is highly or perfectly collinear with the quality difference between some pairs of classes. Hence, I complement the instrumental variable estimator with a matching estimator. The estimator tests whether chateaux of differential class fetch different prices even if their wines are of comparable quality and repute. I use a coarsened exact matching procedure in which I match on criteria that are theoretically and empirically relevant (Iacus, King, and Porro, 2009; for an application in the status literature see Azoulay, Stuart, and Wang, 2011). I construct the matched sample requiring the following from two matched wines:

1. The producing chateaux are in different *grands crus classés*.
2. Both wines are from the same vintage.
3. The wines' ratings are within a two-point difference of each other.
4. The average rating of the two wines in the ten years prior to the focal vintage is within a one-point difference of each other.
5. The number of vintages reviewed by the *Wine Spectator* in the 10 years prior to the focal vintage is within a one-count difference of each other.

If more than one potential match is found for a focal wine, the match is selected at random from the set of potential matches. If no match is found, the observation is dropped. If a match is doubled such that Chateau X is matched with Chateau Y and, conversely, Chateau Y is matched with Chateau X, I remove the double from the matched data. Because I select the match for each focal wine at random out of all possible matches that fulfill the matching criteria, every run of the matching procedure yields a different dataset. Therefore, I bootstrap 1000 matched samples

according to the matching criteria. Every bootstrap contains about 570 matched pairs. At the expense of losing observations, I also used stricter versions of conditions 3 and 4 in robustness analyses. In alternative runs I independently or jointly required quality to be within a one-point difference and reputation to be within a half-point difference of each other. Consistent with the previous regression analyses, the effect sizes attenuate as the matching conditions for quality and/or reputation are tightened. In the most stringent condition, the effect sizes attenuate by up to 25 percent, though all significant results remain statistically significant. I provide an example for two matched wines and the summary statistics of the bootstrapped matched samples in tables 3 and 4.

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Insert table 4 here

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Table 3 shows the case of the wines of Chateaux Leoville Las Cases and Lafite Rothschild for the 2006 vintage. Both wineries produced wines of the same quality. Both producers have the same reputation for quality as measured by the quality of their wines and the number of reviewed wines over the past ten years. Nevertheless, both wines fetch very different prices. Consistent with the previous regressions, I attribute this price difference to the difference in their *grands crus classés*. Table 4 shows how closely the lower-ranked chateaux match the higher-ranked chateaux. This close correspondence between the higher- and lower-ranked matches is important to the causality claim of this analysis. Imagine the lower-ranked chateaux would only achieve the lower bound of the allowable difference for the matching criteria. Then one could not tell whether the price difference is due to status because the two-point difference in quality

and the one-point difference in reputation might be sufficient to explain the price difference. The close correspondence between the matched pairs effectively voids this concern. Using the matched sample, I analyze the relative price of the higher-ranked vis-a-vis the lower-ranked chateau.[9] The results of the matched-sample analysis are presented in table 5.

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Insert table 5 here

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There are approximately 30 matches between first and second growths in each bootstrap. The table shows that wines from the first *grand cru classé* fetch about 3.5 times the price of wines from the second *grand cru classé*, holding quality and reputation constant. Even though an estimate for the comparison between the first and the third class and for the comparison between the first and the fifth class can be obtained, these comparisons are based on very few observations. Therefore, it does not seem to be appropriate to compare these *grands crus classés*.[10] No chateau in the fourth class ever matches a first growth. For all other pairs of *grands crus classés* there are between 50 and 110 observations per pair in each bootstrap.

Second growths fetch an estimated 15 percent more than third growths, 38 percent more than fourth growths, and 29 percent more than fifth growths of equal quality and reputation. It may come as a surprise that the advantage of the second over the fifth growths is smaller than over the fourth growths. This is due to the fact that the analysis brushes over some detail. Fourth growths are more likely to be matched with second growths that produce at the bottom of the quality distribution of their class. By contrast, some high-quality fifth growths like Chateaux

[9]The relative prices of two *grands crus classés* for the earlier regression analyses can of course be obtained by exponentiating the difference between two *grands crus classés* coefficients or between the intercept (1st class) and one other *grand cru classé* coefficient.

[10]The estimate for the first over the third class is 2.49 and is relatively imprecisely estimated with a confidence interval from 1.49 to 3.81. The estimate is typically based on an n of 2 in each bootstrap, and the only chateau that ever fulfills the matching criteria is Chateau Palmer. Similarly, the comparison of the first and the fifth class rests on an average n of 7 in each bootstrap. The relative price is 3.61 with a confidence interval from 3.19 to 4.13.

Clerc Milon, Lynch Bages, or Pontet Canet are matched with chateaux at or close to the top of the quality distribution of the second class. This attenuates the relative price of second over fifth growths vis-a-vis the relative price of second over fourth growths.

Third growths do not charge significantly more than matched fourth growths. However, third and fourth growths both have an estimated 12 percent price advantage over fifth growths. Overall, six out of seven of the more populated pairwise comparisons show significant returns to status (eight out of nine if the less populated comparisons are included). The price advantage is huge for the first growths, substantial for the second growths, and may roughly be between 0 and 17 percent for the third and fourth growths over the respective lower ranks.

1.4.4 Uncertainty or conspicuous consumption?

The last question I seek to address is the underlying cause for the observed status effects. I assume that wine ratings effectively resolve the uncertainty about product quality. Thus, consumers are uncertain about wine quality to the extent that they are uninformed about the ratings. Due to the proliferation of the internet, wine ratings and information about the producers have become ubiquitously available. This should have decreased the uncertainty about producer or product quality. Thus, if returns to status were driven by the uncertainty about producer or product quality, they should have declined over the period of study. By contrast, if returns to status were driven by conspicuous consumption, they should have increased over the period of study because the global integration of markets should have increased demand while supply is fixed.[11] Therefore, I re-estimate the semi-parametric IV model (model 11) from table 2. For simplicity and brevity, I include a linear time trend and interactions of the status, reputation, and quality variables with the linear time trend instead of time fixed effects and their interactions. An interaction analysis with fixed time effects shows similar results, but would be difficult to display and have few degrees of freedom because of the large number of estimated fixed effects.

[11] Cf. http://www.time.com/time/world/article/0,8599,2077433,00.html; last accessed on September 4th, 2011.

The result of the analysis is presented in table 6.

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Insert table 6 here

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The direct effects of status as well their interaction effects with time are negative and significant. This implies that the price gap due to status has significantly widened, not narrowed, over time. This widening of the status gap applies only to the difference between the first vis-a-vis all other classes. The other interaction effects of class with time are not significantly different from each other in pairwise F-tests. If anything, they show that the price gap between the other classes has marginally narrowed over time, but not significantly so. This increase in the returns to status to the highest-status chateaux seems inconsistent with the hypothesis that uncertainty drives the returns to status.

However, there is a possibility that the interaction effects are driven by soaring demand from China. Chinese buyers might not only be particularly status-conscious, but also particularly uncertain about producer and product quality because of their relative inexperience with Bordeaux wines. In this case the estimated time trend would coincide with soaring demand from a group of buyers that might be highly status-conscious, highly uncertain, or both. The inability to fully discern the nature of the Chinese buyer would render the inference as to whether returns to status are driven by uncertainty or the demand for positional goods fragile. I work around this problem by splitting the sample. I re-estimate the model for the vintages 1991 to 2002 and for the vintages 2003 to 2008. For vintages earlier than 2003 China was an insignificant market. These vintages were mainly absorbed by the established markets. An increase in the uncertainty about quality seems particularly unlikely for these markets. Therefore, the test may be more conclusive when the analysis is constrained to vintages before 2003.

The analysis for the vintages 1991 to 2002 reaffirms the widening of the price gap due to status differences even before the demand from China started to have a significant influence on the Bordeaux market. As before, only the first growths benefit from this widening of the status gap, while the other pairwise class differences do not change significantly over time. According to the estimates the first growths gained about five percent per year on the wines of the other classes, net of changes in the returns to quality or reputation. This suggests that the returns to status in this market accrue partially or entirely due to consumer demand for prestigious products.

In the model for the vintages 2003 to 2008 the interaction effects between class and time are considerably larger. The widening of the price gap between the first and the other classes has further accelerated for the vintages 2003 to 2008. The estimates indicate that the first class gained 23 to 27 percent per year over the lower classes, controlling for the dynamics in the returns to quality and reputation. There is again no evidence that any other wines than the first growths profit from this widening of the status gap. Media accounts suggest that the soaring demand from China is causally responsible for this huge first-growth effect.[12] Again, I am unable to discern empirically whether this effect is due to the demand for prestigious products or due to the Chinese buyers' uncertainty about producers or products. However, the media reports about the Chinese craving for the first growths, Lafite Rothschild in particular, give evidence of the ultimate desire for high-status goods that is reminiscent of the Dutch tulip and spice bubbles.[13] There is little in these reports that would suggest that these effects are driven by uncertainty about producer or product quality.

[12] http://www.forbes.com/sites/russellflannery/2011/02/08/2011-china-investment-guide-what-will-be-the-next-lafite/; last accessed on September 4th, 2011.

[13] For example, http://www.cibmagazine.com.cn/Columnists/Andy_Xie.asp?id=1505&last_call_for_lafite_.html; last accessed on September 4th, 2011.

1.5 Discussion

The first goal of this study was to identify *causal* effects of status on product prices. I investigated this question in the context of Médoc wines of the vintages 1991 to 2008 whose producing chateaux were *grand cru* classified in 1855. The use of the exogenous status variable of a chateau's *grand cru classé* prevented that status could be reversely affected by demonstrations of quality, reputation, or the price a producer charged for its products. This effectively resolved the endogeneity concerns between status and quality and between status and price that typically plague the organizational status literature. Further, wine ratings from blind tastings enabled the implementation of tight controls for quality and reputation on the product level. The remaining concern about the potentially endogenous relationship between quality and price was addressed with instrumental-variable and matching estimators. As a result, this study provides one of the cleanest tests of organizational status effects yet that differentiates the effects of status, reputation, and quality.

There was evidence for strong causal status effects on prices. This is impressive because not only were there significant quality differences that increased in status, but also increasing marginal returns to quality and reputation, which indicated that lower quality is a poor substitute for higher quality among the classified Médoc wines. The greatest returns to status accrue to the highest-status producers. The returns to status decline toward the bottom of the status hierarchy. The differences are indistinguishable from zero for one (but not the same) pair of status classes in the instrumental variable and the matching estimators, respectively. This suggests that returns to status accrue mostly to the very elite and are relatively small at the lower echelons of a status hierarchy. The advice drawn from this finding is that status effects, just like quality and reputation, should be modeled with the flexibility to allow for increasing marginal returns. Modeling a convex status return function linearly would otherwise result in an overestimation of status returns to the middle-status producers and an underestimation of status returns to the

lowest- and highest-status producers.

Status returns accrue in this market due to a more than 150-years-old, normative status hierarchy. This seems to suggest that status returns can result in a large economic *Matthew effect* over time that has the potential to enshrine the existing social order among a set of producers for generations. The strict stratification of quality along class boundaries and the fact that the incentive to invest in quality is greatest for the highest-status producers seemed to support this view (for an analogous conclusion see Benjamin and Podolny, 1999). However, the differential incentives status classes have to invest in quality are insufficient to enforce a separating equilibrium in producers' quality choices. The chateaux in the classification of 1855 fetch prices well above marginal costs, and the price increase a lower-class chateau realizes by producing higher quality well outweighs a conceivable increase in marginal costs. In other words, it is difficult to explain the strict stratification of average quality along the class boundaries by their differential incentives to invest in quality alone.

This calls for a discussion of the alternative explanations for this phenomenon. The simplest alternative explanation would be that the higher-status chateaux are naturally advantaged by the superior quality of their vineyards (height, slope, exposition, etc.). Historic discussions (Markham jr., 1998: 189) and the fact that some chateaux in lower classes produce at or above the average level of quality of a higher class do not support this view. Another potential explanation could be that the incentive structure to invest in quality has shifted beneath the producers' feet over the period of study. If the incentive to invest in quality had increased dramatically over the last 20 years, then many chateaux may have made investments in quality only after this shift became apparent. Such investments could be slowly acting because they may be implemented gradually in the vineyard or cellar, because they require to move down the learning curve, or because wine harvested today will not be sold on the market before two or three years time. If the proprietors had already made such slowly-acting investments to improve quality, then we would have to expect a future increase in the average quality in particular among the lower-class

chateaux. Notwithstanding the theoretical plausibility of this explanation, the dynamic analysis showed little support for a dramatic shift in the incentive to invest in quality or reputation over the period of study, rendering this explanation questionable. Finally, tacit knowledge may play an important role in the production of a highly rated wine. High quality may be difficult to produce. The fact that the hiring of prominent advisers for vineyard operations and wine-making is common practice in the industry hints that the knowledge how to produce a wine that gets highly rated may be difficult to transfer and partially embedded within human capital. This would suggest that quality differences between higher- and lower status producers persist because of an actual lack of ability that takes time and effort to overcome.

Despite the identified causal returns to status, the results alert researchers to exercise caution in the identification and interpretation of organizational status effects. A failure to control for product quality or reputation, or disallowing increasing marginal returns to quality or reputation resulted in an overestimation of status effects. Settings in which quality or reputation cannot be tightly controlled on the product level will thus generally overestimate status effects because status, quality, and reputation are typically positively correlated (cf. Benjamin and Podolny, 1999). At first glance this may seem consistent with the extant organizational status literature. If quality is uncertain, then status serves as a signal of quality (Podolny, 2005). However, this uncertainty must not reside on the side of the researcher, but only on the side of the buyer. In the worst case, buyers might be well aware of the differences in quality or reputation that correlate with status differences but organizational-level controls may fail to capture these differences. Thus, when controls for quality or reputation are weak, empirical analyses will almost certainly attribute returns to status that are truly attributable to unobserved heterogeneity in quality or reputation, resulting in fragile inference. In fact, to best identify causal status effects and discern their underlying causes, organizational scholars would ideally observe perfect quality and reputation controls on the product level as well as a direct measure of buyer uncertainty. This study effectively addressed the first problem by using an exogenous status signal and strong

controls for quality and reputation on the product level derived from blind expert ratings. It worked around the second problem by studying a time period during which the uncertainty about producer and product quality has plausibly declined.

In doing so, this article tested inductively two alternative root causes for the returns to organizational status: status as a signal of quality under uncertainty and conspicuous consumption. Consistent with the latter hypothesis, I found that the returns to status have dramatically increased between 1991 and 2008, but only for the highest-status producers. To stick to the most striking example: Chateau Leoville Las Cases is a second *grand cru classé* that has been producing at or above the level of quality of the first growths at least since the early 1980s. In 1995 a bottle of Chateau Leoville Las Cases had the same level of quality and earned the same price ($120) as the first growths Chateaux Lafite Rothschild, Latour, and Mouton Rothschild. In 2006, a comparable vintage with effectively equal ratings for each of these wines, Chateau Leoville Las Cases fetched $225, whereas Lafite, Latour, and Mouton fetched an average price of $708 according to the *Wine Spectator* records.[14] This difference cannot be explained by increasing uncertainty about Leoville Las Cases. If anything, the continued production at the highest level of quality has furthered Leoville Las Cases' reputation. Moreover, quality information about Leoville Las Cases has become more munificent with the proliferation of the internet. This should have further reduced the uncertainty about its quality over the period of study. This indicates that the pure returns to status, i.e., that part of the *Matthew effect* that is unjustified by differences in underlying quality, has strongly increased over time for the highest-status producers. This process has developed slowly before the 2003 vintage and has been accelerating dramatically since China has become an important market for the classified growths. This suggests that the returns to status in this market accrue partially, if not entirely, due to conspicuous consumption and not due to uncertainty.

The reader should not interpret this to mean that uncertainty does not generally have a positive

[14] In order of the named wineries, the *Wine Spectator* ratings were 95, 96, 94, 94 in 1995, and 95, 95, 95, 94 in 2006.

effect on the returns to status, which is a cornerstone of the theoretical and empirical organizational status literature (e.g., Podolny, 2005). Instead, one should interpret this to mean that the uncertainty about the producers was low even before the advent of the internet and that, therefore, a different root cause must explain the status returns in this market. After all, each of the chateaux had been in existence for more than 150 years, and the trade was aware of rating agencies such as the *Wine Spectator* and Robert Parker well before the internet started to proliferate. I conclude from this that, contrary to theoretical claims in the extant status literature (Podolny and Phillips, 1996; Podolny, 2001, 2005), uncertainty is not a necessary condition and the taste for positional goods is a sufficient condition to generate returns to status.

1.6 Appendix

The history of the classification of the chateaux of the Médoc of 1855 should be interesting to organizational scholars who study classification, categorization, or institutionalization. While the history before its creation is not key to the analyses or the points made in this paper, a precis of its history may help to put the classification in perspective. The interesting aspects are in particular how the classification system itself had developed until 1855 and why the classification of 1855, which was never intended to be permanent, became institutionalized. The subsequent discussion draws extensively on Markham jr.'s (1998) comprehensive historical analysis of the classification and on the pre- and post-classification standard works on Bordeaux's wines by Cocks (1846) and Cocks and Feret (1883).

In every vintage the jurade (wine brotherhood) of Bordeaux established an approximate price range for the wines from the different parishes of Bordeaux in an annual meeting.[15]. Similar lists of price ranges by location were created by the Chamber of Commerce of Bordeaux for the Intendant of the Gironde (then Guyenne). These lists had two purposes: to inform the intendant about the state and development of the wine business and to facilitate the assessment of the tax base, which would have been a daunting task without such lists. No attempt was made with these lists to *classify* wines by the order of merit. They were a descriptive tool to provide orientation to the trade and to administrators. These price lists are considered the predecessors of the later actual classifications of the chateaux of Bordeaux.

By the mid of the 18th century, these lists had developed into a useful tool for the wine trade. Instead of having to establish the prices for each chateau every year, the lists served as an orientation for the relative prices that were to be charged in the focal vintage for wines of the different parishes. The merchants' assumption was that the market was working efficiently. The prices of the past were reflective of the demand, supply, and quality of wines of the different

[15]Due to special circumstances in that year, the list of 1647 is the earliest one to have survived until today.

parishes. If a parish or chateau did not produce wines that lived up to the expectations associated with its price, it would lose the favor of its customers, the merchants would be unable to sell the wine, and the chateau would have to increase its quality and/or decrease its price to sell its wines in the future.

From the early "classifications" that listed the wine prices by parish, ever more fine-grained versions were developed. Three details are remarkable about the classifications developed between the mid 18th and the mid 19th century. First, the classifications were not merely drawn up by parish anymore. Instead, they identified the individual producers (Markham jr., 1998: 213–300). Price, as a representation of value, now had a name tag and was directly coupled to a producer's identity (Markham jr., 1998: 66–67). Second, the lists, which were typically drawn up by experts with decades of experience in the trade, show signs of real classification. Chateaux were commonly grouped into three to five classes. The classes now emphasized a categorical rather than a cardinal distinction, implying a discontinuous rank ordering of the producers. Third, toward the mid of the 19th century more and more classifications did not list prices anymore, only the classification itself (Markham jr., 1998: 213–300). The difference in price was implied because price differences were the basis of classification, with some notable exceptions. For every vintage, prices were typically set first for the first growths, with all other chateaux being discounted at well-established, institutionalized rates relative to the first growths and their respective higher classes (Markham jr., 1998: 52). Differences in prices were generally considered a less debatable and more reliable assessment of relative value than any quality judgment could have been.

Two criteria may have contributed to a self-perpetuation of the classifications even before the classification of 1855. First, the price-setting mechanism generally assured that price differences were carried forward in time in relative, though not absolute, disregard of underlying quality (Markham jr., 1998: 52). Second, the absence of independent rating agencies like Robert Parker or the *Wine Spectator* may have resulted in a much greater reliance on socially

constructed tastes among the predominantly English customers. Buyers were willing to pay premiums for the wines that were served at the dinners of emperors, kings, and nobility (Lichine, 1967: 288–289; Cocks and Feret, 1883: 96–97). Thus, by the mid of the 19th century, a chateau's class rank had become an amalgam of price, presumed quality, and prestige status.

That the ranking of the great growths of Bordeaux had become institutionalized and that a chateau's class status was much more inert than its quality is evidenced by a number of contemporary writers. For example, Cocks (1846: 167) writes about Chateau Haut Brion: "The first crû of this excellent Grave parish is that of *Château Haut-Brion* [...] The wine of this *château* was formerly considered equal to either of the three first *crûs* of the Médoc." He goes on to elaborate in a footnote: "This wine had greatly fallen in estimation: however, in 1844 it was sold at 3000 francs per tun, when Mouton and other second growths sold at above 2600 francs, and a portion of Lafite at 4500 francs." Similarly, Biarnez writes lyrically about Chateau Leoville Poiféré in his classification of 1849 (Markham jr., 1998: 295):

"I cannot understand by what test ill-defined
Experts rank Leoville as a second-class wine;
How the grandest of all, the divine Poiféré,
Could have been so misjudged by our elders this way!"[16]

Because the classification was drawn up based on historic prices, Haut Brion would be classified as a first growth in the classification of 1855, despite its downward trend. By contrast, Mouton and Leoville Poiféré (today Léoville Poyferré) would both be classified as second growths, even though they seem to have performed at the level of quality of the first growths. This shows that the classifications have always been debatable. On the one hand, they were based on decades of experience and thus not subject to short-term influences (Markham jr., 1998: 59). On the other hand, older classifications were often outdated and carried over a chateau's rank of past times,

[16]The larger Leoville estate was split into three properties, Leoville Barton, Leoville Las Cases, and Leoville Poyferré, due to inheritance. All three are 2nd *grands crus classés* and fall into the appellation of Saint-Julien.

thereby buffering producers in descent and curtailing producers in ascent. Yet, even though the classifications may have been inert, there was a chance for mobility before the classification of 1855 (Markham jr., 1998: 53–54).

The question then is how the classification of 1855 transformed the market from one that was already characterized by inert classifications into one of a single, fixed classification that would not change and become inscribed into law in 1949? The answer to this question is: by the air of greater authority and legitimacy. The *grand cru* classification of 1855 was created for the Universal Exposition in Paris. At the Emperor's will, the exposition was to display the state-of-the-art industrial products of all departments of France to give evidence of the frontier of France's industrial development. All 83 departments (administrative districts) were ordered to create a departmental committee to decide which products of their department ought to be displayed. Having received a letter from the department Cote d'Or informing them that the producers of Burgundy and Champagne intended to display their wines at the exposition, the committee of the department Gironde, into which falls Bordeaux, delegated the question whether wine should be displayed at the exposition to the Chamber of Commerce of Bordeaux. After holding a town-hall meeting with the proprietors, the Chamber of Commerce of Bordeaux decided unanimously that it should exhibit its wines (Markham jr., 1998: 32).

However, the Chamber of Commerce was deeply concerned that chaos would ensue if the proprietors were allowed to self-organize the display of their wines at the exhibition.[17] Specifically, the response of the Chamber of Commerce speaks of great worry that proprietors would engage in rent-seeking behavior and attempt to misrepresent the quality, reputation, or status of their wines. The Chamber of Commerce feared that this misrepresentation would undermine the established market order of Bordeaux's wine trade that had developed over the decades, if not centuries: "[I]t is only in the general and national interest that the presence of French wines [at

[17]The leading members of the Chamber of Commerce's committee were most likely Nathaniel Johnston, member of both the departmental committee for the Exposition and member of the Chamber of Commerce of Bordeaux, and Lodi Martin Duffour Dubergier, president of the Chamber of Commerce of Bordeaux, wine merchant, and proprietor of several chateaux.

the Exposition] appears to us to be useful. If, however, it serves to favor particular interests or if, no less grave, the proprietors of a particular region seek to profit from the Exposition to mount a fight among themselves with the aim of destroying a classification based on the experience of long years, we would not hesitate to declare that it would be better, in our view, that none of our wines appear at the Exposition," (Markham jr., 1998: 32–33).

On the same grounds the committee of the Chamber of Commerce opposed any other measure that had the potential to disturb the existing market order. It rejected the idea of holding a tasting of the wines: "In the trade, tastings are conducted by specialists possessed of great experience, who assure that these events are undertaken with the greatest of precautions; even so, it occurs that they occasionally err. These mistakes are regrettable, without doubt, but how much more harmful would the consequences be were they to come from a jury called to deliver its verdict before the entire world?" The Chamber also rejected the idea to have its wines subjected to a competition within or among regions: "They should be exhibited out of competition, first because they share no similarities with any others; next, because (as with most other wines), they draw their principal qualities from the soil which has produced them. [...] [I]t is nature alone which is almost completely responsible for the result. Thus, what right has the proprietor to a reward, to an honor? None, we think," (Markham jr., 1998: 33).

The Chamber's letter goes on to describe in detail how the exposition of the wines of the Gironde should be organized. According to the Chamber's plan, producers should not be named. Only the parish and, perhaps, the vintage were to be printed on standardized labels of the Chamber of Commerce of Bordeaux. However, an exception should be made for a special subset of wines: "As for our classed growths, reds or whites, they would appear at the Exposition under their own names, to which could be added that of the town in which the grapes were harvested; the proprietor's name should not appear, in order to avoid any individual competition and all conflicts of self-esteem." The Chamber's plan was to display a map of the appellations. The map should feature a table with a name and location of the classed growths that was to be crafted

by the Union of Brokers of Bordeaux. The Chamber of Commerce submitted this plan along with other details to the departmental committee (Markham jr., 1998: 34).

Despite initial debate, the departmental committee eventually approved of all suggestions the Chamber of Commerce of Bordeaux had made. Moreover, the Chamber's concerns resonated with the departmental committee. The departmental committee wrote in its reply to the Chamber of Commerce: "Please take into account, Sirs, that this event has attracted the attention of a great number of proprietors, several of whom have raised hopes which can in no way be satisfied; a strong and impartial stand must be taken in the face of these pretensions; it is our endeavor to uphold the interests of this vast trade, which you so admirably represent. The Committee hopes that for all of these reasons, you will decide to lend us your full and efficient assistance," (Markham jr., 1998: 36–37).

This response effectively put the Chamber of Commerce in charge of organizing the exposition of the wines of the Gironde. As stated in the Chamber of Commerce's letter, it aimed for a complete representation of the classed growths of Bordeaux: "If our ideas were to be adopted, it would be important that all our classed growths, up to the fifths included, be represented; as much as possible, one should be able to take in at a glance the collective production of the Gironde's vineyards [...] What we have just said, as you can appreciate, Sirs, applies particularly to red wines; but there is nothing to prevent measures similar to these being taken concerning white wines, although the division in five classes is not as well established as that for red wines," (as cited in Markham jr., 1998: 34).

There was agreement in the trade that there were about 60 to 70 classified growths. There was also agreement at large which chateaux were the classified growths. However, there was no clarity as to which of the classes many of the chateaux belonged into at the time. As forestalled in their letter to the departmental committee, the Chamber of Commerce referred this question to the Union of Brokers. The Union of Brokers was a union of all kinds of brokers, not just for wine. Only one man on the board of the Union, Georges Merman, was familiar with the wine

trade. It took the Union of Brokers two weeks to respond to the department's request to provide the classification. This as well as the letter the Union addressed to the Chamber of Commerce are seen as an indication that Merman must have consulted other wine merchants to furnish the list: "In order to satisfy your wishes, we surrounded ourselves with all possible information, & we have the honor to make known to you by the attached table the result of our investigations. You know as we do, Sirs, how much this classification is a delicate thing & likely to arouse sensitivities; also it was not our thought to draw up an official state of our great wines, but only to submit for your consideration a work whose elements have been drawn from the best sources," (Markham jr., 1998: 106).

Earlier classifications had been drawn up by reputable individuals that were typically intimately familiar with Bordeaux's wines and the trade. By contrast, the classification of 1855 was created for the Imperial Universal Exposition, commissioned by the Chamber of Commerce of Bordeaux, and furnished by the Union of Brokers. No subsequent list drawn up by an individual could hope to have the same authority and legitimacy. Thus, the classification was culturally but not yet normatively official (Markham jr., 1998: 167, 169)

Between its creation and its factual inscription in law in 1949, the list was probably never revised because the organization of the exposition turned out to be a great annoyance for the Chamber of Commerce. Proprietors and managers, in particular the ambitious manager of Chateau Lafite, engaged in much political and rent-seeking behavior (Markham jr., 1998: 123–153). Many chateaux did not submit the requested wines to the Chamber so that the exposition of the classed growths was very incomplete (Markham jr., 1998: 504). Instead, some of the chateaux displayed their wines on their own, outside of the Chamber's display (Markham jr., 1998: 141). Moreover, a tasting was held with a select rather than a complete set of wines before the exposition and the Imperial committee awarded medals (gold, silver, and bronze) to some of the chateaux, plans that the Chamber had opposed rather vehemently before the exposition (Markham jr., 1998: 143). Further, the Universal Exposition as a whole was rather

unsuccessful, attracting much fewer visitors and business than anticipated. Finally, soon after the exposition, letters arrived at the Chamber of Commerce—complaints by proprietors that their chateaux had not been included in the classification—all of which the Chamber referred to the Union of Brokers (Markham jr., 1998: 155–158). The Chamber had feared many of these issues and had opposed any plans that threatened to disturb the existing market order of Bordeaux's wine trade. Therefore, it seems that none of the issues just described would have increased the Chamber's or the Union's inclination to attempt an official reclassification. In fact, the Chamber refused to assume the same role in the Universal Exposition that was to be held in London in 1862 (Markham jr., 1998: 171).

It was never the Chamber's intention to create a permanent classification. Yet, the occasion for which it was furnished, the legitimizing effect of the parties that were involved in the process, and the fact that it was never revised created a durable institution. Its status as an institution was further perpetuated by its repeated publication (Markham jr., 1998: 168), in particular in the standard book of the time, *Bordeaux and Its Wines* (Cocks and Feret, 1883). Even though Cocks and Feret (1883: 95) acknowledged that the classification needed revision, they referred to its authoritative legitimacy as the reason why they continued to reprint it: "For these five categories of fine growths, we have followed textually the last official document by *la Chambre syndicale* of wine brokers in 1855 [...] As all other human institutions, this one is also subject to the law of time; and o[u]ght, as a natural consequence, to be revised from time to time, in order to keep pace with age and progress."[18] However, this did never occur.

The classification itself attained little commercial relevance before the end of World War II. Only after WW II, did the classification start to unfold its full commercial relevance as a hallmark of Bordeaux's superiority in the production of red wine. Having been a theater of war, many foreign veterans wanted to drink and could afford the wines they had drunk during war

[18]The latter passage appeared in all editions of *Bordeaux and Its Wines* until 1969 when the controversy whether Chateau Mouton Rothschild should be elevated to first-growth status reached its peak, which would eventually happen in 1973.

time. With this commercial potential in mind, the classification of 1855 became a normative institution when the term *cru classé* and the conditions for its use were inscribed into law in 1949 (Markham jr., 1998: 177, 179–180).

Chapter 2

Basking in the eclipse of reflected glory: when high-status affiliations impede organizational growth

How does an organization create an identity that receives recognition from the audiences that provide the organization with resources? Extant literature has highlighted the role of high-status affiliations in creating such an identity (Stuart et al., 1999). The positive effect of high-status affiliations seems all too natural. A high-status position in the alliance network of biotech and pharmaceutical firms or high-status customers, for example, signal to audiences that the high-status partner deems the focal firm worthy of affiliation. Due to their visibility, high-status affiliations reassure third-party audiences that the focal firm is a legitimate, high-quality organization. Consequently, audiences commit resources more willingly to organizations with high-status affiliates (e.g., Stuart et al., 1999; Khaire, 2010).

The claim of this paper is that this positive influence of high-status affiliations is much more contentious within the categorical boundaries of an industry. As long as affiliations cut across categorical boundaries, identities have a limited potential to infringe upon each other. This

might change dramatically within an industry if organizations compete based on identity. Under this condition, distinguishing oneself from others becomes a critical task for the organization (Beverland, 2005; Gioia et al., 2010). Being distinctive from the high-status firms in an industry should be particularly crucial as high-status firms attract a disproportional share of attention and resources from their audiences (Castellucci and Ertug, 2010; Podolny, 1993; Benjamin and Podolny, 1999). This absorptive effect gives rise to the central proposition of this paper: firms that collaborate too intensely with high-status firms in their industry may fail to signal distinctiveness and see their identities discounted by their audiences. The resulting main hypothesis is that audiences commit resources less willingly to organizations that fail to distinguish their identities from the established elite.

This paper is not the first to stress the role of distinctiveness in markets. Extant literature has focused on optimal distinctiveness, the value of uniqueness, and on how to craft brand authenticity (Beverland, 2005; Bishop Smith, 2011; Deephouse, 1999; Gioia et al., 2010; Navis and Glynn, 2011). Molding social psychology literature (Brewer, 1991; Snyder and Fromkin, 1980) with institutional literature (DiMaggio and Powell, 1983; Suchman, 1995), optimal distinctiveness stresses that moderately distinctive identities fare better, on average, because they balance being different and being legitimate. The arguments and scant evidence on uniqueness hold that the most unique identities may be the black swans that audiences reward the most (Bishop Smith, 2011). The literature on authenticity shows how high-status organizations enact authenticity to maintain their status difference, command price premiums, and fight off competitors (Beverland, 2005). Interestingly though, these works have mostly focused on the departure of organizations from implicit norms, standards, or average behaviors of their industry, and product differentiation. Notwithstanding the contributions these papers make to our understanding of organizational identity, their approaches to identity could be deemed undersocialized.

In contrast to this literature, this paper takes a structural, i.e., a social network approach to identity and distinctiveness. The approach is sociological in origin. It rests on Goffman's (1986)

observation that our social identity in the eyes of our audiences is determined by those with whom we are seen in public and White's (1992) insight that identities interpenetrate and constrain each other. Using status as a particularly salient feature of identity (Jensen et al., 2011), I develop network measures for the degree to which organizational identities are confounded or eclipsed. By focusing on the status of a firm's exchange partners as a determinant of its identity, the paper aims to not only show that an organization must distinguish itself from other firms in the industry, but also from whom.

My empirical setting is the venture capital industry between 1995 and 2009. Previous literature emphasized the benefits of high network status, which a firm derives directly from a central position among centrally located others, in this and related financial services industries (e.g., Bothner et al., 2011; Hochberg et al., 2007; Podolny, 1993, 2005).[1] Demonstrating the adverse effects of high-status affiliations due to eclipsing and confounding in the venture capital industry would thus be particularly informative.

I analyze the effect of the degree to which a focal VC firm's identity is eclipsed by its highest-status co-syndicators or confounded with the collectivity of its co-syndicators. Results from fixed-effects logit estimates show that VC firms with confounded identities are less likely to raise a new fund, and this effect is stronger for high-status firms. VC firms with eclipsed identities are also less likely to raise a new fund but only if they occupy high-status positions themselves. These results show that audiences commit resources more willingly to organizations that are able to distinguish themselves from the established elite.

2.1 Theory

Albert and Whetten (1985) have defined organizational identity as those attributes of an organization that are central, enduring, and distinctive. I pursue a structural approach to identity here.

[1] Hochberg et al. (2007) showed that among a number of network variables centrality (the commonly used measure for status) had the largest effect.

The structural approach implies that identities are defined through affiliations. This approach emphasizes two of Albert and Whetten's (1985) attributes: centrality and distinctiveness. However, as relations are tied and untied, the structural approach is by definition dynamic. The endurance (or stability) of identities may emerge as a form of dynamic equilibrium, but it is neither a necessary condition nor a given in my treatment of identity.

Social actors make claims to identities and stand in competition for them. As White (1992: p. 6) remarks: "identities add through contentions to the contingencies faced by other identities." "An individual identity is thus a history of positioning acts that is tested in each new interaction," (Czarniawska and Wolff, 1998: pp. 35–36). The competition is mandated by crowded identity spaces and by audiences looking for distinctiveness in order to determine merit and allocate recognition, resources, and rewards. As "[d]ispersions are the sources of identities" White (1992: p. 5) and because identity spaces are crowded, distinctiveness requires active differentiation. Sameness is discounted as it implies a substitutable or redundant identity. In this view, Apple's enormous success in recent years is not just due to its products, but also due its audiences perceiving it to be distinctive.

In a structural approach to identity, then, the question how to differentiate in order to achieve distinctiveness is the question with whom to affiliate and from whom to stay away. Goffman (1986: p. 47) asserted that an audience is likely to perceive sameness between social actors and the affiliates with whom they appear public. From this, the literature has developed the more general understanding that identities that are connected through "networks of intangible flows" interpenetrate (Bothner et al., 2010a: p. 944, see also White, 1992). This implies that affiliations can be a source of both (perceived) distinctiveness or sameness.

Within the categorical boundaries of an industry, status is a salient feature of a firm's identity (Jensen et al., 2011). It is a means and an end in the positioning acts that constitute the competition for a distinctive organizational identity. Status leaks through exchange and deference relationships (Podolny, 2005), which makes the construct consistent with the assump-

tion of interpenetration in the structural theory of identity and social action (cf. White, 1992). Consequently, the status of an organization's exchange partners must factor prominently into a structural approach to distinctiveness.

Some of the literature on status benefits has studied networks of collaboration among direct competitors, e.g., the co-syndication network of investment banks (Podolny, 1993; Podolny and Phillips, 1996). This literature has shown an astonishing disregard for the important difference between a focal organization's status and the status of its exchange partners.[2] Methodologically, this disregard is somewhat understandable. Status is commonly measured as an actor's centrality in the exchange network (Bonacich, 1987). Status derives recursively from the centralities of one's exchange partners, the centralities of one's exchange partners' exchange partners, and so forth. This raises a legitimate question that should not be dismissed ex ante: can a firm's status be meaningfully distinguished from the status of its exchange partners?

Conceptually, however, this disregard is even more problematic precisely because status is zero-sum and leaks through exchange relations (Podolny, 2005: p. 25). By its property to leak or transfer, status embodies competitive tension and implies that competitors mutually infringe upon their identities within relationships (cf. Bothner et al., 2010c). A structural approach to distinctiveness must take this competitive tension into account. As status asymmetries between exchange partners are salient to audiences, they should be defining elements of a firm's identity and contribute to or subtract from an organization's distinctiveness.

The remainder of my theorizing expands on this idea. The next section defines *eclipsing* and *confounding* as constructs grounded in status contrasts that infringe upon the distinctiveness of identities. The subsequent section develops network measures to capture the two constructs in networks of discrete exchanges.

[2]This disregard in the status benefits literature is surprising as literature on the status-based choice of exchange partners highlights that a fear of leakage and an attempt to "appease" important audiences can affect partner choices (Jensen, 2006; Jensen and Roy, 2008), suggesting that status differences between direct exchange partners are narrowly monitored.

2.2 Eclipsing and confounding

The central proposition of this paper is that an organization's audience recognition may suffer if its identity is confounded with or eclipsed by the status of its exchange partners. I define *eclipsing* as an identity's tendency to outshine or be outshone by specific others with which it is associated. I define *confounding* as an identity's tendency to be blurred by the collectivity of the identities with which it is associated. While eclipsing rests on individual contrasts between the focal identity and one or more select group members, confounding rests on a focal identity's lack of distinctiveness and recognizability with respect to the group as a whole. Because eclipsing will prove to be an elementary and special case of confounding, I will explain eclipsing first and progress towards confounding.

The approach I propose to capture eclipsing focuses on the status asymmetry between the focal entity's status and its exchange partners. In describing the approach, I start from the simple example of a dyad and expand the concept from there. The marriage between Queen Elizabeth II, Queen of England, and Prince Philip, Duke of Edinburgh, may serve as a starting point. Presumably, the rank as the Queen of England and Head of the Commonwealth of Nations puts Elizabeth II in a higher status position than her husband in the eyes of the general public. In this dyad, Prince Philip's status is eclipsed by the higher status of his spouse.

However, the relationship with his spouse is not the only relationship or exchange Prince Philip is engaged in, and so the status asymmetry between Prince Philip and his exchange partners will vary across his relationships. Sometimes his status will eclipse the status of his exchange partners and sometimes the status of his exchange partners will eclipse his.[3] To measure eclipsing is thus a question of capturing status asymmetries *within* an entity's exchange relationships and of aggregating *across* them.

For dyadic relationships, measuring the status asymmetry within an exchange relationship is

[3]Note that status equality will be a special and presumably rare case of zero status asymmetry.

easy. It can be computed as the difference between the exchange partner's and the focal entity's status. However, exchange relationships need not be dyadic and can involve a greater number of social actors. For exchange relationships involving more than one alter, the question becomes which status asymmetry or asymmetries to focus on in order to best capture eclipsing.

Consistent with the concept of and evidence pertaining to the *Matthew effect* (Merton, 1968) that social actors of high status reap the greatest rewards and benefits, I propose to focus on the contrast between the focal entity and the highest-status member of a group. The status literature has argued and shown that actors of high status reap the greatest attention (Merton, 1988; Simcoe and Waguespack, 2011), attribution of success and quality (Podolny, 2005: p. 35), and rewards as allocated by their audiences (e.g., Merton, 1968; Podolny, 1993; Benjamin and Podolny, 1999). The highest-status entity among the exchange partners should thus be most likely to divert attention, attribution, and benefits away from the focal entity. Figuratively speaking, in a triad between Prince Philip, Prince Charles, and Queen Elizabeth, eclipsing is most pronounced in Prince Philip's status asymmetry with Queen Elizabeth, because Prince Charles is himself eclipsed by her. For eclipsing, the status asymmetry with the highest-status actor is assumed to matter the most, because the highest-status actor eclipses all others in the group. Consequently, I propose that eclipsing is best captured in the degree to which a focal identity is eclipsed by its highest-status exchange partners.

However, to assume that audiences entirely disregard the contrast between Prince Philip's and Prince Charles's identity when evaluating Philip in the triad appears far fetched. The concept of confounding takes an identity's embeddedness in the entire group into account. The idea is of course that an identity will be less distinct and recognizable from the point of view of an audience, the larger the number of high-status identities that surrounds him. Confounding implies that Prince Philip's identity will stand out less when he is seen in a cohort of royals than when he is seen among commoners and that this dilution of his identity worsens as the cohort increases in size. Both eclipsed and confounded identities should receive less recognition from

their audience(s). Consequently, audiences should be less likely to provide social actors with eclipsed or confounded identities with resources, rewards, or benefits.

I believe eclipsing and confounding to be general elements of the primitive by which we evaluate identities. If greater merit is attributed to discernible identities, competition for audience recognition within status orders will require some degree of differentiation from the established elite. Because status and affiliations are salient features of both individuals' and organizations' identities, this principle should apply to social and organizational domains alike.

By this doctrine, we can equate Prince Philip to an organization, for example, to the venture capital firm Prince Philip Ventures. A co-investment with Queen Elizabeth Capital will have two opposing effects on Prince Philip Ventures' identity, the positive effect of status transfer and the negative effect of being eclipsed. Co-investments with Prince Charles Partners and Prince William Associates will also have two opposing effects on Prince Philip Ventures. The co-investment may embody some status transfer to Prince Philip Ventures or at least prevent substantial status leakage because the three organizations are status-similar. On the other hand, if Prince Philip Ventures always co-invests with Prince Charles Partners and Prince William Associates, then their identities will be fully integrated, i.e., confounded. Prince Philip Ventures could have mitigated the lack of distinctiveness that results from confounding by choosing lower status co-investors or by integrating its co-investment relationships less tightly with a closed set of firms.

HYPOTHESIS 1.—*The more a VC firm's identity is eclipsed by its highest-status co-syndicators, the lower is its likelihood to raise a new fund.*

HYPOTHESIS 2.—*The more a VC firm's identity is confounded with a cohort of high-status co-syndicators, the lower is its likelihood to raise a new fund.*

2.3 Measuring eclipsing and confounding

This section formalizes measures of eclipsing and confounding in networks of discrete exchanges. To formalize eclipsing and confounding, consider the $m \times n$ matrix P that captures the occurrence of n possible exchange partners in m exchanges. Element $P_{i,j}$ takes 1 if exchange partner j participated in exchange relationship i and 0 otherwise. For example, in the context of venture capital firm syndication matrix P would be the investment matrix for all investment rounds in a given time frame. Accordingly element $P_{i,j}$ would capture whether venture capitalist j invested in round i. Consider, for example, the hypothetical investment matrix shown in table 7, which features the boolean investment decisions of six venture capital firms in three investment rounds.

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Insert table 7 here

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Matrix $R = P^T P$ is then an $n \times n$ matrix that captures the number of times the respective social actors have encountered each other in exchange. In the context of venture capital firm syndication, R would be the co-investment matrix. Element $R_{i,j}$ would capture the number of rounds in which VC firms i and j co-invested. The corresponding co-investment for the investment matrix in table 7 is shown in table 8. The corresponding unweighted network is shown in figure 4.

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Insert table 8 here

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Insert figure 4 here

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Setting its diagonal elements to zero, matrix R is the standard input to computing a social actor's Bonacich centrality (Bonacich, 1987), which is the commonly used metric for status in the social network literature (e.g., Podolny, 1993). Bonacich centrality is computed as:

$$c(\alpha,\beta) = \alpha(I - \beta R)^{-1} R\mathbf{1} \tag{2.1}$$

where R is the co-investment matrix, I is an identity matrix, $\mathbf{1}$ is a vector of ones, and α is an arbitrary scaling constant to center c around one. The parameter β determines the transitivity of ties, i.e., how much an actor benefits from the connections of his connections, the connections of his connections' connections, and so forth. Consistent with prior literature, β is set to $3/4$ times the reciprocal of the largest eigenvalue of R (e.g., Podolny, 1993; Stuart et al., 1999). The status score vector c for the sample network is shown in table 9.

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Insert table 9 here

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The investment matrix P, the co-investment matrix R, and the status score vector c contain all the necessary information to measure eclipsing and confounding.

2.3.1 Eclipsing

Conceptually, eclipsing aims to measure how much an actor's identity is outshone by the highest-status identities of its exchange partners. To that end, a matrix is created of the same dimensions as investment matrix P, and its rows are repeatedly filled with the status score vector $c(\alpha,\beta)$. The resulting matrix is dot-multiplied with P, yielding matrix S, as shown in table 10

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Insert table 10 here

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Eclipsing within an exchange relationship can be read off table 10 directly. For example, C eclipses A and B in round *I*, C eclipses D and E in round *II*, and D eclipses F in round *III*. Note also that C eclipses E by a wider margin than D in round *II* and that D eclipses F by a slightly wider margin in round *III* than C eclipses A and B in round *I*.

To get a useful measure of eclipsing, we need to aggregate the eclipsing that occurs within an actor's exchanges across his exchanges. To do so, I propose to compute the differences between actor i and his highest-status exchange partners within his exchanges and then to average across them. This can be formalized as follows:

$$eclipsing_i = (s_{max}^T P_{\cdot i} - R_{ii} \cdot c_i(\alpha, \beta)) \cdot R_{ii}^{-1} \tag{2.2}$$

where s_{max} is the the vector that holds the row maxima of S; $P_{\cdot i}$ is the column vector in P that represents actor i; R_{ii} is the total number of exchanges actor i was engaged in; and $c_i(\alpha, \beta)$ is actor i's status score as measured by i's centrality in the exchange network.

2.3.2 Confounding

In contrast to eclipsing, confounding aims to measure how distinguishable an identity is from the collectivity of an actor's exchange partners. I had argued that confounding is a function of the status of one's exchange partners and of how complete one's identity is integrated with theirs. This implies that an identity will more easily stand out not only the lower the status of one exchange partners is, but also the less frequently one is seen with the same closed set of social actors.

To create a measure of confounding, every row $R_{i\cdot}$ of the co-investment matrix R is divided by element R_{ii}, which yields a matrix V. After this computation, the diagonal elements of V are set to zero. The resulting matrix is shown in table 11.

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Insert table 11 here

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The rows $V_{i\cdot}$ of V capture the proportion of rounds in which VC firm i has co-invested with VC firm j. If the proportions are high, then VC firm i's co-investors have a tendency to co-invest jointly in the deals in which firm i engages. Thus, the higher the proportions, the greater firm i's tendency to co-invest with a closed set of co-investors. Large proportions imply the greater integration of i's identity with the identities of its exchange partners and, thus, greater confounding. To incorporate the exacerbating effect of high-status connections on the confoundedness of a firm i's identity, I matrix-multiply $V_{i\cdot}$ with the status vector c. This yields firm i's confoundedness score.

$$confounding_i = V_{i\cdot}c(\alpha, \beta) \tag{2.3}$$

2.4 Eclipsing and confounding in the venture capital industry

2.4.1 Data

To test the hypotheses, I use data on venture capital syndication. The choice of this setting is instrumental, as venture capital syndication and the syndication of similar financial services firms has been used frequently in the status literature (e.g., Bothner et al., 2011; Hochberg et al., 2007; Podolny, 1993). Therefore, it would be particularly informative if the downside of high-

status affiliations can be shown in a setting in which the benefits of possessing high status have been so amply demonstrated.

The data were retrieved from VentureXpert and consist of information about all investment rounds recorded for the years 1992 to 2009. The data identify the investing venture capital firms, the target companies, the investment round, and the date of an investment. From this information, it is easy to construct the investment matrix P for any given time frame. Measures for status, eclipsing, and confounding are derived from the year-specific investment matrices. These data are complemented with data for the dependent and control variables, which were fetched from the same data source. Because the independent and control variables are computed based on the three years prior to the focal year, the actual econometric analysis is performed with data from the years 1995 to 2009.

Dependent variable. To test the hypotheses, the dependent variable needs to correlate with an external audience's recognition of a VC firm's identity and reflect its growth. The willingness of investors to commit financial resources to a firm is indicative of both criteria. Hence, I choose a venture capital firm's ability to raise a new fund as the dependent variable. Variable $\textit{fund launched}_{i,t}$ takes 1 in year t if firm i makes an investment from a fund from which it has never made an investment before and 0 otherwise.

Independent variables. I use the network measures for *eclipsing* and *confounding* as defined earlier. Eclipsing and confounding in year t are computed based on the investment matrix P that captures all information on investment rounds by U.S. venture capital firms for the years $t-1$ to $t-3$. The required status scores, as measured by Bonacich centrality, are generated from the co-investment matrix $R = P^T P$. Consistent with prior literature, I assume a β value of 3/4 times the reciprocal of the largest eigenvalue of R for the transitivity of network ties to compute the status scores (e.g., Podolny, 1993; Bothner et al., 2011).

Control variables. The control variables account for alternative explanations for the observed network effects of eclipsing and confounding such as the performance or quality of the venture

capital firm, the number of its exchange partners, and the focal venture capital firm's status. First, own and partner status in networks must correlate positively as high status is defined as a central network position among centrally located others. In order to estimate the potentially adverse effects of partner status, the focal venture capital firm's *status* needs to be controlled. The focal firm's status is measured by its Bonacich centrality. Whether there is a meaningful distinction between status, eclipsing, and confounding is itself an open empirical question. Eclipsing and confounding effects can only be identified if there is sufficient residual variance in eclipsing and confounding conditional on a firm's status.

Confounding is effectively the status-weighted proportional network degree of a firm. One should expect confounding to increase in the total number of a firm's exchange partners as well as in the average number of exchange partners per exchange. I implement the control variable *degree* for the number of distinct venture capital firms with which a focal venture capital firm has syndicated in the years $t-1$ to $t-3$. Similarly, I implement the control *average # of investors in round* to absorb the typical size of the syndicates with which the focal firm invests.

A venture capitalist's underlying quality should drive its performance and its ability to convince investors to commit resources to it. The omission of performance controls would thus lead to an overestimation of status, eclipsing, and confounding effects if these variables are themselves related to performance. I follow extant literature in implementing performance controls. I control for successful *exits* as well as *failures*. Exits are measured by the compound number of IPOs, mergers, acquisitions, and LBOs over the years $t-1$ to $t-3$ of portfolio companies in which the focal VC firm was invested. Analogously, failures are measured by number of companies in which a focal VC firm was invested that were listed as defunct, Chapter 11, or Chapter 7 over the years $t-1$ to $t-3$. The empirical analysis indicated that collapsing exits and failures in this way had greater explanatory power than separating them out. The effects of the independent variables are robust to the alternative specification that separates exits and failures into their components.

I further control for the number of *rounds* in which the focal firm invested in the years $t-1$ to $t-3$. Another control is implemented to approximate the sum of a VC firm's investments. Unfortunately, there is no information regarding the individual VC firms' contributions to an investment round. Only the sum invested in a round is available in the data. The variable *sum of investments* proxies for the amount a VC firm has invested over the past three years by the sum of the investments in the rounds in which it participated. The dummy *sum of investments missing* takes 1 if this variable cannot be created because of missing data and 0 otherwise. I also control for the number of distinct *funds* from which a venture capital firm has drawn money over the past three years to make its investments. Further, I compute a measure of *diversification* as the Herfindahl index based on the number of rounds invested across two-digit SIC code industries. Finally, I code the variable *diversification missing* if the variable *diversification* cannot be derived because of missing data and 0 otherwise.

2.4.2 Method

I analyze the data with fixed-effects logit regressions. The models take the general form:

$$Pr(\text{new fund launched}_{i,t} = 1) = \frac{exp(v_i + x_{i,t}\beta)}{1 + exp(v_i + x_{i,t}\beta)} \tag{2.4}$$

where *new fund launched*$_{i,t}$ is the indicator whether firm i made an investment from a new fund in year t; v_i is the *time-constant*, firm-specific effect; $x_{i,t}$ is the vector of values for the independent and control variables of firm i in year t; and β is the vector of coefficients that is to be estimated by maximum likelihood estimation. The firm-specific effects, v_i, are integrated out of the likelihood function (Chamberlain, 1980), implying that the fixed-effects logit does not suffer from the incidental parameters problem (Neyman and Scott, 1948). The fixed-effects analysis drops all venture capital firms that did not raise a new fund during the period of study and only relies on the within-firm variance. It eliminates the concern that time-constant but

unobserved heterogeneity in venture capital firm quality, which might correlate with the network position the firm occupies, affects the results.

The fixed-effects analysis does not mitigate the concern that confounding and eclipsing might capture unobserved *time-varying* firm characteristics such as fluctuating quality differences or power rather than identity. To address this concern, I conduct a split-sample analysis. I use the crash of the NASDAQ stock index in 2000, a phenomenon known as "dotcom bubble burst," as an exogenous shock on individual venture capital firms. The dotcom bubble burst signifies the rapid decline of the stock prices of technology and growth companies, in particular of internet companies. The crash of the NASDAQ indicated that a less favorable market environment was dawning that would restrict access to capital as well as lucrative exits through IPOs. This hinted that raising a new fund was likely to pose a considerably greater challenge after the year 2000.

My conjecture is that the munificence of the environment altered the importance of identity compared to quality and power. The expansion of the VC industry in the second half of the 1990s should have made it more difficult, whereas the contraction of the industry after the crash should have made it easier to process a larger share of the substantive information about VC firm activity. Moreover, information about quality, e.g. about exits through IPOs, are less informative about the underlying quality of the firm in expanding than in contracting environments. This is because a resource-rich, expanding environment allows even firms of lower quality to be successful that would not be successful in a resource-poor, contracting environment. On the other hand, I would expect identity cues to become more important as a sifting and sorting device in a resource-rich environment, in which the volume of information about VC firms, their investments, and networks increases and the value of quality signals decreases.

Similarly, if eclipsing and confounding captured a lack of power rather than identity, then eclipsing and confounding should capture a lack of ability to dictate deal terms and gain access to opportunities. A more munificent environment with more opportunities and more potential exchange partners to choose from should mitigate the power effect. A resource-poor environment

with fewer potential exchange partners and fewer opportunities to choose from should exacerbate the power effect.

Thus, if eclipsing and confounding captured differences in underlying quality or power, I would expect their effects to decrease toward the dotcom bubble and increase afterwards. By contrast, if eclipsing and confounding capture identity as it is perceived by the audience independently of underlying quality, I would expect their effects to increase toward the dotcom bubble and decrease afterwards.

2.5 Results

Table 12 provides information on descriptive statistics and the correlations between the variables. One should bear in mind that these correlations across firms are not necessarily reflective of the within-firm correlations, but that it is the within-firm variance on which the estimates of the fixed-effects models rest. The results of the main analysis are presented in 13.

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Insert table 12 here

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Insert table 13 here

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Models 1 through 6 show the hierarchical inclusion of eclipsing and confounding effects. In all models, status has a strong positive effect on a firm's likelihood to raise a new fund. This reaffirms the extant status literature. Model 2 shows that eclipsing has a negative effect on the odds to raise a new fund. However, the significant improvement in model fit of model 3 over model 2 indicates that the negative effect of eclipsing pertains specifically to higher-status firms.

Model 4 shows a negative and significant effect of confounding on the likelihood that a venture capital firm is able to raise a new fund. The direct effect remains significant when the effect of confounding is allowed to depend on the status of the firm in model 5. Confounding has a negative effect on all firms, but this effect is stronger for firms that occupy high-status positions. Model 6 shows that the effects of eclipsing and confounding remain significant in each other's presence.

The coefficients or odds ratios themselves may not be informative about the marginal effects of the independent variables in this case. This is because the correlation structure of the data needs to be taken into account when interpreting nonlinear models with interaction terms (Ai and Norton, 2003). However, I find very similar results in analogous linear probability models with fixed effects. As the coefficients are the marginal effects in a linear model, it appears safe to interpret the marginal effects of status, eclipsing, and confounding in the fixed-effects logit models without taking the entire correlation structure among the data into account.

These results imply that there is only conditional support for hypothesis 1. Eclipsing does not have a significant effect on average, but in interplay with a VC firm's own status. A high level of eclipsing consumes the benefit a high-status position has on a firm's likelihood to raise a new venture fund. Hypothesis 2 is supported. A VC firm with a confounded identity has a lower likelihood to raise a new fund. This effect is exacerbated at high levels of status. The effects are graphically displayed in figure 5.

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Insert figure 5 here

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Note that the significant interaction effects reaffirm the interpretation of eclipsing and confounding as identity effects. If eclipsing and confounding captured a firm's lower quality or less power vis-a-vis its co-syndicators, then occupying a higher-status position should mitigate

these effects because higher-status actors have typically greater quality (Hochberg et al., 2007), get more exposure and attention (Castellucci and Ertug, 2010; Simcoe and Waguespack, 2011), and can negotiate more favorable deal terms (Hsu, 2004). The exacerbating interaction effects found in the analysis are inconsistent with the quality and power explanations.

To further address the question whether eclipsing and confounding truly measure identity and not residual time-varying but unobserved heterogeneity in quality or power, I conduct a split-sample analysis for the time before and after the dotcom bubble burst in 2000. The analyses shown in models 7 (before) and 8 (after), reveal that the direct effect of confoundedness is stronger before the crash and insignificant thereafter, whereas the interaction effect of status and confoundedness is insignificant before the crash and significant thereafter. This is inconsistent with confounding capturing quality or power. If quality or power were behind the confoundedness effect, I would have expected the direct effect to become stronger in the resource-poor environment after the NASDAQ crash. Further, I would have expected the negative effect of confounding to extend to a wider set of firms rather than to narrow down to high-status firms after the crash. The size of the interaction effect between status and eclipsing is not much affected by the crash. It slightly decreases. If eclipsing and confounding captured a lack of quality or power, the size of the effect should have become larger in the resource-poor environment after the crash. This supports the view that audiences discount firms with eclipsed or confounded identities and are less willing to commit resources to them.

2.6 Discussion

In this paper, I defined network measures for *eclipsing* and *confounding* to capture the lack of distinctiveness of an actor's identity dependent on the status of his affiliations. Eclipsing captures a lack of distinctiveness attributable to an unfavorable status contrast between the focal actor and his highest-status exchange partners. Confounding captures a lack of distinctiveness

due to excessive integration of one's identity with a closed set of high-status partners. The core argument and insight of this paper is that eclipsed or confounded identities are discounted by their audiences.

Empirically, I showed that venture capital firms with more eclipsed or confounded identities are less likely to be able to raise a new venture fund. Audiences seem to generally discount confounded identities. The discounting of both eclipsed and confounded depends on the firm's own status. Higher-status firms are more heavily discounted for having eclipsed or confounded identities. At high levels of eclipsing, status benefits were nullified. At high levels of confounding, status benefits reverse such that a firm may prefer to establish a middle-status but un-confounded identity rather than a high-status but confounded identity.

When a firm considers to engage in an exchange relationship, it should thus take into account how this relationship affects the distinctiveness of its identity. The tradeoff between the anticipated benefits of a relationship and its identity costs may be difficult to make. As all tradeoffs, it must be made at the margin. However, with similar opportunities at hand, a firm might want to pursue the opportunity that assures the greater distinctiveness of its identity even if this opportunity is slightly less attractive. In any case, the study suggests that by minimizing eclipsing and confounding a firm maximizes the distinctiveness of its identity and thereby improves the chance that its audiences commit resources to it.

With this insight, this paper contributes to our theoretical understanding of identity- and status-based market competition. Identities are intertwined. Being connected through networks implies an influence of our affiliates' identities on our own (e.g., Bothner et al., 2010a; Goffman, 1986; White, 1992). Earlier microsociological literature suggested that audiences may perceive sameness between an actor and the affiliates in whose presence the actor is seen in public (Goffman, 1986: p. 47). The presented analysis provided some evidence that audiences critically differentiate identities within this sameness. Echoing theoretical arguments that social actors compete based on status and for a distinctive identity (Jensen et al., 2011,Podolny, 2005:

p. 25, White, 1992: pp. 5–6), this study showed not only that a firm must distinguish itself from other firms in the industry, but also from whom.

The findings of this study partially contradict and point to the limitations of the extant organizational status literature. Analyses of status effects in similar industries suggested that mingling "with the hoi polloi" benefits firms (Podolny, 1993, 2005). While I found evidence consistent with this view, I also found clear limits to this effect. Status spillovers are bounded by the need for a distinctive identity; they are voided or even reversed if the firm fails to achieve distinction. The shortcoming of the extant literature in this regard was a failure to distinguish a firm's status in the exchange network from the status of its exchange partners. Having seperated them from each other is the theoretical, methodological, and empirical contribution of this paper.

The results of this study also point to the scope conditions of other studies that highlighted the benefits of high-status affiliations (e.g., Stuart et al., 1999; Khaire, 2010). Eclipsing and confounding should have the greatest effects if identities compete directly for audience recognition. Without the direct competition for identity between affiliated actors, confounding and eclipsing should be irrelevant and status should generate positive spillovers only. In this light, affiliations of entrepreneurial firms with high-status customers (Khaire, 2010) or of biotech firms with pharmaceutical firms (Stuart et al., 1999) should be unproblematic. Affiliations between commercial and investment banks, for example, might be more contentious because they involve related categories of organizations. Within the categorical boundaries of an industry such as the venture capital industry eclipsing and confounding should have the strongest negative effects because firms directly compete for a recognizable identity. As such confounding and eclipsing should have more adverse effects the more narrowly the industry, the market, the field, or the social arena under question is defined. This gives rise to the testable hypothesis that the relatedness of the categories to which affiliated actors belong moderates the strength of eclipsing and confounding effects.

Competition based on and for status and identity unfolds similarly in other social realms. Like

status, I believe eclipsing and confounding to be fundamental inputs to the primitive by which audiences assess identities. The measures developed in this study lend themselves to testing this conjecture in other social networks, as they are not specific to the context studied here. To explore the generalizability of these suspected principles in the competition for a distinct identity is an important task for future research.

The developed measures for eclipsing and confounding rely on discrete exchanges among identifiable actors. Yet, many relationships are non-discrete, i.e., they occur on a continuous basis without interruption. To be applicable to such settings, the developed measures will require adjustments. How to best implement these adjustments is left to future research.

Chapter 3

High-status affiliations, identity creation, and rank mobility

> "Ike Cole, Nat's brother, also pursued a singing career, but was never able to achieve the fame of his older brother. 'The public seems to have a hard and fast rule: No matter how good an artist may be, if he sounds or plays like someone who is a favorite, it's thumbs down,' he says. 'Nat's reputation has hurt me professionally because people always said I was just cashing in on my brother.'" (Ike Cole in *Ebony*, September 1979)
>
> "When I was up for midterm review, they told me that I was working too much with too famous people." (academic informant)

How does an actor in economic or social space create and signal an identity that finds acceptance by the audiences that are critically important to his success (Goffman, 1959)? Extant literature suggests that high-status affiliations (HSAs) generally help to improve audience approval (e.g., Homans, 1974: pp. 312–313; Blau, 1964: p. 133; Bothner, Bishop Smith, and White, 2010a; Bothner, Kim, and Lee, 2011; Rossman, Esparza, and Bonacich, 2010; Podolny and Phillips, 1996; Stuart, Hoang, and Hybels, 1999). Yet, instead of benefiting from their HSAs, Ike Cole

and the academic suffered from them. What distinguishes their conditions from the conditions in the extant literature, which in its overwhelming majority promises affiliation benefits?

In this article, I develop a theoretical framework that is able to reconcile seemingly contradictory status affiliation effects. The theory incorporates uncertainty as a well-understood driver of benefits to HSAs (Stuart et al., 1999; Podolny, 2001), but relaxes two implicit assumptions in the literature. First, I relax the assumption of *one* audience and allow for heterogeneous audience taste (Abbott, 1981; Goffman, 1986; Becker, 1997), an observation that has found renewed interest in the organizational identity and categorization literatures (Zuckerman and Kim, 2003; Hsu, 2006; Pontikes, 2011). Specifically, I will allow the audience's taste for uniqueness or conformity in identity to vary (Snyder and Fromkin, 1980). The taste for uniqueness or conformity in identity would appear to be particularly relevant to sociological inquiry because of the role conformity is ascribed in audience acceptance across broad, related streams of sociological literature such as status acquisition (Hollander, 1958), groups (Cooley, 1902; Festinger, Schachter, and Back, 1963), professions (Goode, 1957), deviance (Becker, 1997), categorization (Hsu, Hannan, and Koçak, 2009; Hsu, 2006), legitimacy (Zuckerman, 1999), and cultural-cognitive institutions (Berger and Luckmann, 1966). Second, I relax the assumption that HSAs generally reduce the uncertainty about actors. Instead, I will argue that even though HSAs may increase the perceived quality of an actor they may also retain an audience's uncertainty about him. Creating intersections of audience taste and uncertainty, I will theorize how audiences come to look at and evaluate an actor dependent on the strength of his HSAs. The theory predicts that differently strong HSAs are optimal under high versus low uncertainty for uniqueness- versus conformity-seeking audiences.

To validate the theoretical framework, I conduct three empirical studies. An experiment provides a test of the theory under controlled conditions with high internal validity. The audience members (subjects) assess the quality and provide a recommendation for the promotion of a job candidate. I experimentally manipulate the uncertainty about the candidate's quality and

the strength of the candidate's HSAs. Uniqueness seeking in identity is assessed as a trait of the audience. The experiment confirms that audience taste and uncertainty jointly determine how strong an actor's HSAs should optimally be. Audiences that reward strong HSAs in the absence of uncertainty have a different taste for uniqueness than audiences that reward strong HSAs under uncertainty. Furthermore, status affiliation effects as they are commonly found in the organizational literature—i.e., that strong HSAs are rewarded under uncertainty—require a specific taste among the audience. The results also highlight two conditions under which audiences penalize actors for strong HSAs and hint that Ike Cole's and the academic's case may be fundamentally different. These results suggest that the extant affiliation-based status literature rests on implicit assumptions about audience taste.

To test the external validity of the framework, two field studies are conducted under one of the conditions under which audiences should penalize actors for strong HSAs. The first study is situated in a context well-known for status effects: academia (e.g., Zuckerman, 1965; Merton, 1968). Using a sample of PhD graduates from high-status business schools, I analyze how their chances to make tenure depend on high-status ties that retain the uncertainty about their quality. The second study extends the investigation from professional settings to a social setting. The data are drawn from Newcomb's (1961) and his colleagues' longitudinal study of mutual liking in a fraternity. I analyze how a man's growth in social rank depends on his popularity among the high-status members of the fraternity (see also Bothner et al., 2010a). The results of both studies corroborate the theory's prediction. Conformity-seeking audiences prefer moderate over weak or strong high-status affiliations if the uncertainty about the actor's quality is high.

The theory and evidence in this article offer the following contributions to the literature: foremost, the article contributes to our understanding of how affiliations affect audiences' reactions to actors (e.g., Bothner et al., 2010a; Pontikes, Negro, and Rao, 2010; Rossman et al. 2010). The developed theory relaxes two rather strong implicit assumptions in the affiliation-based status literature, the assumption that audience taste is homogeneous and the assumption that HSAs

generally reduce the uncertainty about an actor. The theory incorporates and extends the important strand of affiliation-based status theory that reflects on the sign or signal HSAs create under uncertainty (e.g., Podolny and Phillips, 1996; Stuart et al., 1999). Merging the"prisms" view of status (Podolny, 2001) with variable audience taste allows to account for a wider range of affiliation-based status effects under one unifying theoretical framework, including Ike Cole's and the academic's negative experiences. The experimental test of the theory has a defensible claim to causality. This overcomes endogeneity concerns that frequently call into question causal effects in the status literature (cf. Azoulay, Stuart, and Wang, 2011). Finally, two field studies attest to the real-world relevance of the theoretical framework. Not all audiences have a taste for high-status affiliations, and strong high-status affiliations need not be beneficial.

3.1 Theory

3.1.1 High-status affiliations and audience approval

Actors in social or economic space depend on audience approval. Audiences, broadly defined, are the entities—individuals, groups, organizations, or institutions—on whom an actor's success or failure depends. An actor seeking audience approval "implicitly requests his observers to take seriously the impression that is fostered before them," (Goffman, 1959: p. 1). Receiving approval implies that an actor's identity conforms to or exceeds the audience's expectations and is evaluated positively. An actor's affiliations influence audience approval because "as long as social ties are detectable by third parties, in networks of intangible flows [...] coupling equates to the influence of another's identity on one's own," (Bothner et al., 2010a, see also Jenkins 1996: p. 5, and Goffman 1986: p. 47). Because affiliations contribute to and partially define the identity an actor signals to the audience, they affect whether the audience accepts or rejects the actor.

The importance of affiliations for audience approval has received particular attention in the literature on status (e.g., Blau, 1964; Bothner et al., 2010a; Rossman et al., 2010; Stuart et al., 1999) and stigma (e.g., Goffman, 1986; Pontikes et al., 2010).[1] Audience perception is influenced by status spillovers from individuals to individuals (Bothner et al., 2010a; Merton, 1988; Graffin et al., 2008; Rossman et al., 2010; Sigall and Landy, 1973), from individuals to organizations (Hausman and Leonard, 1997; Roberts et al., 2011), from organizations to individuals (Bielby and Bielby, 1999; Rossman et al., 2010), and from organizations to organizations (Podolny and Phillips, 1996; Simonin and Ruth, 1998; Stuart et al., 1999). For example, fraternity members benefit from their robust popularity among highly popular others (Bothner et al., 2010a), and movie actors with high centrality in the actor network or ties to previously nominated actors, writers, or directors are more likely to be consecrated with Oscar nominations (Rossman et al., 2010). NBA organizations benefit from the association with superstars and wineries from prominent winemakers (Hausman and Leonard, 1997; Roberts, Khaire, and Rider, 2011). Screenwriters benefit from their affiliation with elite agencies (Bielby and Bielby, 1999) and movie actors with ties to prominent distributors are more likely to be nominated for an Oscar (Rossman et al., 2010). Finally, organizations with prominent (alliance) partners improve an audience's perception of the organization (Simonin and Ruth, 1998) as well as organizational performance along a number of dimensions such as status growth (Podolny and Phillips, 1996), resource acquisition (Stuart et al., 1999), revenue growth and innovation (Stuart, 2000) and survival (Bothner et al., 2011).[2] Relatedly, stigma, which can be defined as a widely shared perception of low status or prestige (Goffman, 1986: pp. 43–44), spreads from the stigmatized to their affiliates. Goffman's discussion of an ex-con's daughter is an emphatic example (Goffman, 1986: p. 30). Similarly, Pontikes et al. (2010) show that Hollywood actors who had co-starred with suspected communist actors were less likely to find employment during the *Red*

[1] A related stream of literature on organizational legitimacy demonstrates the positive effect of affiliations with industry experts (e.g., Zuckerman, 1999).

[2] There is also evidence that individuals and organizations engage in behaviors to exploit positive spillovers (Cialdini et al., 1976; Roberts and Khaire, 2009).

Scare period.

What these examples have in common is that the theorized and empirically validated effects run in the intuitive direction. High-status affiliates have a positive and stigmatized affiliates a negative effect on an audience's valuation of an actor. This argument fails to provide an explanation for cases like Ike Cole's or the academic's who seem to have suffered from their high-status affiliations. I propose that the failure to account for their cases stems from two sources: an implicit assumption of homogeneous audience taste and the assumption that HSAs do not only improve the perceived quality of, but also reduce the uncertainty about an actor (Podolny, 2001; Podolny and Phillips, 1996; Stuart et al., 1999). I will relax both assumptions, devise a simple model of an audience's sign and signal interpretation, and discern the effect of audience taste from the effect of uncertainty on the value of HSAs. Core to the theory is the insight that the beauty of HSAs lies in the eye of the beholder dependent on whether the audience is uniqueness- or conformity seeking and that uncertainty interacts with audience taste in complex but intuitive ways. The developed theory provides a unifying framework that allows to account for both benefits to as well as penalties for high-status affiliations.

3.1.2 Audiences, acquaintance processes, and information processing

To develop the theory, it is helpful to frame an audience's evaluation of an actor as depending on an "acquaintance process." This allows to delineate the inputs and mechanisms through which an audience evaluates an actor. In the acquaintance process, an audience assesses the available information about an actor. The evaluation depends on the properties the audience attributes to the actor based on the information about him (Newcomb, 1961: p. 15). I consider quality information and social information the inputs to and the *perceived* quality of the actor's identity the output of this attribution process (cf. Gould, 2002: pp. 1144–1146). The perceived quality of an actor's identity, in turn, is expected to determine the audience's approval of the actor and thus his rank mobility.

I define quality information as factual information directly speaking to the actor's abilities. Quality information is assumed to be a signal in the strong economic sense (Spence, 1973). For example, information whether an actor is able to perform a given task well, his intelligence, educational degrees, and so forth can be seen as quality information. I assume that quality information is unambiguously interpreted. By this assumption, all audiences agree whether a specific quality signal indicates higher or lower quality and appreciate higher quality. This implies that, all others equal, audiences prefer actors who are able to perform a given task better, are more intelligent, have higher educational degrees, etc.

In contrast to quality information, I define social information as comprising information about an actor's social circles, position, behavior, and so forth. Information on an actor's high-status affiliations, his ties to other actors, or his embeddedness in social networks or cliques, for example, are social information based on which audiences assess actors (Goffman, 1986: pp. 43–44).[3] The key difference between social and quality information is that it is not assumed that social information is homogeneously interpreted. Instead, I assume that audience taste shapes the lens through which audiences evaluate social information. Because of the heterogeneous interpretation of social information, two audiences need not attribute the same properties to an actor. Consequently, an actor that finds approval by one audience may be rejected by another (Becker, 1997: p. 4, Goffman, 1986: p. 46).

Having defined the inputs and clarified the underlying assumptions, it is possible to devise a general model by which quality and social information affect audience evaluation. Quality information enters audience evaluation by assumption in a strictly direct way. Higher quality should always improve the quality of an actor as the audience perceives it. Social information, by contrast, may exert a *direct* and/or an *indirect* influence on the perceived quality of an actor's identity. I refer to the *direct* effect of social information as the effect of pure taste. This effect is the desirability of a social sign per se from the point of view of the audience. The *indirect*

[3] Social signs pertaining to affiliations differ from social capital (e.g., Coleman, 1988) in that their benefits may depend only on the audience's interpretation of them. No actual resource flows between actors are required.

effect refers to the inference the audience draws about the actual quality of an actor based on social signs. The indirect effect captures what we know as the "prisms" view of status, which holds that status is a lens through which audiences assess and evaluate the quality of actors (Podolny, 2001; Podolny and Phillips, 1996; Stuart et al., 1999). The introduction of audience taste effectively relaxes the assumption of the prisms view that "[i]f consumers and other relevant constituencies have no uncertainty about the quality or value of what is offered by producers in the market, then status is of essentially no value," (Podolny, 2001: p. 42). Heterogeneous audience taste allows to extend the prisms view and accommodate variance in an audience's signal interpretation. This flexibility allows the theory developed in the remainder of this section to capture a great variety of affiliation-based status effects under one unifying theoretical framework.

Aligned with the prisms view, the indirect influence of social information should be stronger when factual quality information is weak or missing, i.e., when the uncertainty about the actor is high. Then, high-status affiliations create spillovers on an affiliated actor by improving the audience's perception of his quality (Podolny and Phillips, 1996; Simonin and Ruth, 1998; Stuart et al., 1999). By contrast, when there is sufficient information about the actor's quality, then audience need not rely on social signs to infer it. Thus, only under uncertainty should the indirect effect of social information apply and affect the audience's inference about an actor's quality. Because of the prevalence of and empirical support for this view, I adopt it as the baseline hypothesis.

> HYPOTHESIS 1.—*On average, audiences reward actors with stronger high-status affiliations under uncertainty.*

3.1.3 Audience taste

Goffman (1986: p. 46) observed that "[i]t is possible for signs which mean one thing to one

group to mean something else to another group, the same category being designated but differently characterized."[4] This insight can be applied analogously to affiliations. What students may see as an association with a "cool" group of peers, parents or teachers may view as bad influence; what one audience may see as an association with the political elite, another may view as an association with the corrupted establishment; what a human resource manager may see as "getting along well with management," colleagues may find sycophantic or conformist—with obvious repercussions for the actor's approval by the respective audiences. Generally speaking, affiliations that one audience may find status-elevating, another may find discrediting, and yet another may not care.

To move forward and incorporate audience taste into the theoretical framework, the specific taste to be incorporated in the theory needs to be detailed. This choice is guided by theoretical relevance. Many related streams of sociological and social psychological literature emphasize the role of conformity. Conformity has, for example, been argued to be indispensable for status acquisition (Hollander, 1958; Homans, 1974: pp. 329–330) and conformity to audience norms has been widely argued and found to result in penalties for non-conforming, deviant identities (Becker, 1997; Goffman, 1959, 1986; Homans, 1974; Hsu, 2006; Hsu et al., 2009; Zuckerman, 1999). However, the emphasis on conformity contrasts with social psychological evidence on the need for uniqueness and individuation. Actors have a desire for uniqueness, prefer a balance between uniqueness and conformity (Snyder and Fromkin, 1980; Markus and Kunda, 1986), vary in the extent to which they prefer uniqueness or conformity (Snyder and Fromkin, 1980; Imhoff and Erb, 2009), differentiate from others to signal their identity and status (Simmel, 1957; Berger and Heath, 2008), and respond to the incentives their environment sets for uniqueness or conformity (Maslach, 1974). It is thus not surprising that casual observation (for example, in cultural markets) as well as some theory and scant evidence suggest

[4]Becker (1997: p. 4) in his book on deviance makes a similar observation: "It is easily observable that different groups judge different things to be deviant." Similarly, Abbott (1981) observed that the groups of professionals that enjoyed high status within their profession were often not the same groups that enjoyed high status outside their profession.

that some audiences reward unique identities most (Hollander, 1958; Zuckerman, 1999: pp. 1402–1403; Beverland, 2005; Bishop Smith, 2011).

The implications uniqueness and conformity seeking may have for audience evaluation concern us here. If individuals vary in the extent to which they seek uniqueness or conformity, then by analogy, audiences should vary in the extent to which they prefer uniqueness or conformity in the identities they evaluate. In this view, global blueprints for successful identities will generally not exist. Audience approval becomes a question of audience taste and an actor's adherence to or deviance from it (Becker, 1997: p. 4). I propose that an audience's taste for uniqueness or conformity shapes the lens through which the audience evaluates actors. Adherence to a conformity-seeking audience requires that an actor's identity be expected and not out of the ordinary. By contrast, adherence to a uniqueness-seeking audience requires that an actor's identity be extraordinary and novel.

The audience's taste for uniqueness or conformity should, consequently, have particular bearing on the audience's valuation of HSAs. High-status actors are the individuals whom the audience currently rewards for their identities. Strong HSAs thus convey an actor's conformity to those who are firmly established in the social structure, leading the audience to infer that he is what they are. By the model of an audience's acquaintance process, the valuation of HSAs should be an effect of pure taste when quality information about the actor is known. Thus, a conformity-seeking audience should value HSAs under low uncertainty because they signal appreciated conformity. A uniqueness-seeking audience should penalize HSAs under low uncertainty as the conformity they signal violates the audience's taste for uniqueness.

> HYPOTHESIS 2.— *Under low uncertainty about an actor's quality, a conformity-seeking audience rewards, whereas a uniqueness-seeking audience penalizes high-status affiliations.*

Under high uncertainty about an actor's quality, the model of the audience's acquaintance pro-

cess proposes that the valuation of HSAs is not just a function of pure taste. It is also a question of the inference the audience draws about an actor's true quality. It becomes clear that hypothesis 1 is the prediction for this inference by an average audience. The average audience is presumably one that is neither too uniqueness- nor too conformity-seeking (Snyder and Fromkin, 1980). The question becomes whether and how the inference about an actor's quality is affected under uncertainty when audience taste is closer to either end of the taste spectrum.

To answer this question theoretically, I mold the idea of variable audience taste with the prisms view of status (Podolny, 2001; Podolny and Phillips, 1996; Stuart et al., 1999). The prisms view suggests that status and HSAs reduce the uncertainty about and increase the perceived quality of an actor in the eyes of the audience. However, an increase in expected quality and a reduction in uncertainty are conceptually distinct. The expectation is about the projected level of quality, whereas uncertainty is about the variance surrounding this projection (Podolny, 2005: pp. 16–18). In contrast to the literature that treats uncertainty and expected quality as one, I argue that even though HSAs may generally improve the expected quality of an actor under high uncertainty, they need not reduce the uncertainty about his quality.

An example illustrates the argument: the Austrian actor Christoph Waltz, formerly unknown to the American audience, played Colonel Hans Landa in Quentin Tarantino's Nazi dramedy "Inglorious Basterds." For his performance in the movie, Waltz won many prizes, including the Oscar for best actor in a supporting role. *But is it Waltz's acting or the role that yielded him the Oscar?* Waltz said in an interview: "This I refer to as one of the best roles in dramatic literature from the beginning, not just in movies, but [...] also the other dramatic literature. Now in movies he is one of the most interesting roles by far, and I say it's the part of a century. Now considered that film as a medium is about a hundred years old, that tells you a lot about that part. [...] That quality jumps at you the moment you open the first page."[5] Director Quentin Tarantino shares a similar view of the role: "'I knew Landa was one of the best characters I've

[5]Interview by Manny the Movie Guy, available from www.youtube.com/watch?v=Af0-9HBn5xM, last accessed July 13th, 2011.

ever written and probably one of the best characters I will ever write.' He auditioned numerous actors for the role (which calls for fluency in German, English and French), but while most of them were perfectly competent, 'they didn't get my poetry,' he said. 'I literally had to consider I might have written an unplayable part.'"[6]

If these statements are true, Tarantino has written a role of Shakespearean proportions. Tarantino acknowledges Waltz's crucial contribution to the role just as much as Waltz acknowledges the brilliancy of the role. However, because the role was performed only once, we do not know how well others would have done in the same role. This makes it difficult to discern what contribution the quality of the role written by Tarantino and Waltz's quality as an actor made to Waltz winning the Oscar. In the most extreme conceivable case, the quality of the role could have sufficed to win any reasonably competent actor the Oscar. Thus one could argue that even though the perceived quality of Waltz increased thanks to his affiliation with Tarantino, the audience remains highly uncertain about his quality.

The phenomenon that uncertainty remains high despite HSAs may be widespread. In situations like teamwork, individual inputs to team outputs are frequently not verifiable for external audiences (Alchian and Demsetz, 1972), thereby preserving the uncertainty about individual actors. High-status actors generally bring higher quality of some sort to the table (Homans, 1974: pp. 193–200, Blau, 1964: pp. 68, 125–127). So as long as this quality is at least partially relevant to the task, team performance will increase in the presence of high-status team members on the team. However, an audience who only observes team outputs remains uncertain about which of the team members contributed what. Analogously, in fully social situations, objective quality dimensions may not exist or be agreed upon. In such contexts, the assessment of an individual's quality is inherently fraught with high uncertainty. Therefore, high uncertainty about an actor's quality is frequently preserved despite or because of his HSAs.

Some anecdotal evidence suggests that under this condition audiences make asymmetrically

[6]The New York Times online, available from http://www.nytimes.com/2009/08/16/movies/16lim.html?pagewanted=1, last accessed July 13th, 2011.

positive attributions to the high-status actors and withhold attributions and rewards from the lower-status actors (Merton, 1968, 1988). I propose that this view is too simplistic and that whether the audience gives credit to the actor depends on the audience's taste for uniqueness or conformity. Uniqueness-seeking audiences reward the unusual and approve of risky identities. Conformity-seeking audiences reward the normal and disapprove of risky identities (cf. Lynn and Snyder, 2002). A conformity-seeking audience, which avoids risky identities, should make negative attributions of quality to an actor with strong HSAs because strong HSAs preserve the uncertainty about the actor. By contrast, a uniqueness-seeking audience should make positive attributions of quality to an actor with strong HSAs because this audience rewards the risk an actor takes in creating his identity.

The effect of HSAs on an audience's approval of an actor under uncertainty should thus be a composite effect of the direct effect of pure taste and of the indirect effect of the quality attributed to an actor based on his HSAs. By hypothesis 2, uniqueness seekers should have a general distaste for HSAs (direct effect), but strong HSAs should appeal to this audience's taste for risky identities and result in an attribution of high quality (indirect effect). This suggests that a uniqueness-seeking audience should value an actor with moderate HSAs least. Such an actor displays neither uniqueness nor a high-risk identity. For a conformity-seeking audience, the effect should be the exact opposite. By hypothesis 2, a conformity-seeking audience should have a general taste for HSAs (direct effect), but this audience should shy away from the uncertainty surrounding an actor with strong HSAs (indirect effect). This suggests that a conformity-seeking audience should value an actor with moderate HSAs most because this actor best combines conformity with a low-risk identity.

> HYPOTHESIS 3.— *Under high uncertainty about an actor's quality, a conformity-seeking audience will reward moderately strong high-status affiliations most, whereas a uniqueness-seeking audience will reward moderate high-status affiliations least.*

3.2 Experimental study

3.2.1 Method

94 subjects participated in an online survey experiment in which they were asked to provide a recommendation as to whether a job candidate should be promoted. The subjects were recruited from Amazon's Mechanical Turk (MTURK) platform. MTURK is used to hire temporary workers for mini-jobs that the workers can process by themselves. However, the platform enjoys increasing popularity for conducting social science experiments for a number of reasons. The overwhelming majority of the 94 subjects recruited for this experiment reported to possess either Bachelor's or Master's degrees. Thus, they constitute an organizationally relevant subject pool for the task. More generally, MTURK subjects show similar behavioral or psychological effects as other subject pools, and MTURK subjects are more similar to the general population than university students (the most popular subject pool) (Buhrmester, Kwang, and Gosling, 2011; Paolacci, Chandler, and Ipeirotis, 2010). This indicates that MTURK subjects constitute a suitable subject pool with desirable properties. The subjects were paid USD 1.5 as a token of appreciation for their participation in this study, which took about 15 minutes to complete.

The MTURK platform directed the subjects to the online survey website that hosted the survey experiment. I administered a 3×2 factorial between-subjects design with three levels of high-status affiliations (weak/moderate/strong) and two levels of uncertainty (low/high). The subjects were randomized into the treatment conditions. In each of these six conditions, the subjects were informed that the job candidate had participated in six project teams and that they would receive limited information about these six project teams. In the low-uncertainty condition subjects were told that they would receive information about the input qualities of each team member, the output quality of each team, and the status of the candidate's team members (i.e., whether the candidate's team members were of higher, equal, or lower status than the candidate). In the

high-uncertainty condition subjects were told they would receive information about the output quality of the teams and the status of the candidate's team members, but not about the input qualities of the team members. The subjects were informed that both input (low-uncertainty condition only) and output qualities would be rated A or B, where A is better than B. The subjects were instructed that they would be asked to provide an assessment of the candidate and a recommendation as to whether the candidate should be promoted. Finally, the subjects were told that those who had asked for their advice normally required that the *individual* quality of a candidate lie well above B to warrant promotion. The exact wording of the instructions is provided in appendix A.

Figure 6 shows the job candidates and their prior project teams as they were displayed to the subjects in the low-uncertainty condition. The three rows display, respectively, the prior project teams for the candidates with weak, moderate, and strong HSAs. Every subject evaluated only a single candidate as determined by the experimental condition the subject was randomized into. The team output qualities are displayed above the teams. The individual input qualities are displayed next to the nodes. Team members were marked as colored nodes. Green, yellow, and red nodes designated lower-, equal-, and higher-status team members compared to the candidate. The candidate the subjects were asked to evaluate was in all instances the candidate displayed as a yellow node marked with an $\times$. The candidates were the same in the high-uncertainty condition except that the information about all input qualities was missing.

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Insert figure 6 here

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I will now discuss in greater detail the assumptions and specifics that went into constructing the prior project teams. It is sufficient to discuss the design of the teams in the low-uncertainty condition. The candidates in the high-uncertainty condition were a straightforward derivative by removing all information about the input qualities. I designed the prior project teams such

that, i.) in the weak, moderate, and strong HSA conditions, the job candidate had worked on one, three, and five out of six teams with high-status team members, respectively; ii.) team member status was positively but imperfectly correlated with (input) quality, which implements an assumption and robust observation of an important strand of the status literature (Homans, 1974: p. 193–200; Blau, 1964: pp. 68, 125–127; Ridgeway, 1991; Benjamin and Podolny, 1999); and iii.) the candidate produced the same level of quality as team members of the same status.

The input quality of the focal candidate was the same in all conditions. However, the average team output quality was higher for candidates with stronger high-status affiliations. This increase in average output quality was solely due to a candidate's stronger HSAs, because high-status actors brought higher average input qualities to the team by assumption. It is this feature that allows to identify status spillovers from the high-status actors on the perceived quality of the focal candidate. By contrast, in the low-uncertainty condition, these quality spillovers should not matter because the individual input qualities of the candidate and all team members are known. Given the information about the candidate and knowing that the candidate's individual quality should lie "well above B" in order to warrant promotion, the subjects provided their recommendation for the promotion of the candidate and an assessment of the candidate's quality.

The reader is invited to compare the prior project teams between the weak, moderate, and strong HSA conditions one by one. To the degree possible, I kept these changes minimal. Between a focal and an adjacent status condition (weak/moderate, moderate/strong HSAs), I made changes to only two of the six project teams, and these changes only affected select elements of the team members' statuses, input qualities, and the team's output quality, as can be seen in figure 6. The results from this study will thus imply that even relatively small changes in information about an actor can have substantial impact on audience perception.

3.2.2 Measures

Perceived quality. I measured the subjects' assessment of the candidate with four items to create a measure of *perceived* quality. The items were: 1. "The candidate performs well individually," 2. "The candidate is very good," 3."The candidate is a high performer," and 4. "The candidate knows how to do it by himself/herself." The items asked for an evaluation of the candidate on a seven-point Likert-scale ranging from "I strongly disagree" to "I strongly agree." I summed the scores on these items to create a measure for the perceived quality of a candidate. The items showed high internal consistency reliability (Cronbach's $\alpha = 0.84$), indicating that they formed one construct.[7]

Promotion. To measure rank mobility, I assessed a dichotomous measure asking the subject whether he or she would recommend the candidate for promotion. The variable takes 1 if the subject recommended the candidate for promotion and 0 otherwise.

Uniqueness/conformity seeking. To measure the taste for uniqueness or conformity in identity, I assessed a subject's need for uniqueness (Snyder and Fromkin, 1980) as a covariate, which I refer to as NFU. I utilized Lynn and Harris's (1997) self-attributed need for uniqueness scale to measure the construct. Subjects rated 1. "I prefer being different from other people," 2. "Being distinctive is important to me," 3. "I intentionally do things to make myself different from those around me," and 4. "I have a need for uniqueness." As for perceived quality, a seven-point Likert-scale was used, and the individual question scores were summed to measure a subject's need for uniqueness. A Cronbach's α of 0.79 indicated the good internal consistency reliability of the test, showing that the items measure one underlying construct.[8] I demeaned the score before the analyses such that values below zero express conformity seeking, zero expresses

[7]The standard error of α was 0.053, roughly implying a confidence interval of α between 0.73 and 0.95. The dependence of α on specific item pairs is thus low. Even a true alpha at the lower bound of the confidence interval would be acceptable.

[8]The standard error of α was 0.045 (95 % CI: $0.7 < \alpha < 0.88$). Even a true alpha at the lower bound of the confidence interval would be acceptable.

neutrality, and values above zero express uniqueness seeking.

Uncertainty. A dummy variable is used to indicate the uncertainty condition. It takes 1 for the high-uncertainty condition in which the information about the quality of the team members' inputs was missing, and 0 for the low-uncertainty condition in which this information was available.

High-status affiliations. To test for curvilinearity in the effect of high-status affiliations, I utilize orthogonal polynomial contrasts (Rosenthal and Rosnow, 1985) to capture the status treatment. These contrasts work like dummy variable coding and capture the same amount of variance. However, polynomial contrasts are coded differently from dummy variables so as to preserve the orthogonality of the covariance matrix and test for curvilinear effects *when treatment levels are equally spaced* (as in 1/3/5 teams with high-status team members). As in dummy variable coding, one contrast less than the number of conditions is included. For the three status conditions in this experiment a linear and a squared contrast are coded, which allow testing for curvilinearity. I refer to these contrasts as *hsa* and hsa^2. The contrast matrix C is created such that C^TC is a two-by-two identity matrix (hence, the quintessential equivalence to dummy variable coding). The contrast matrix C is displayed in table 14.

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Insert table 14 here

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The strength of a candidate's high-status affiliations will be represented in the matrix of regressors by its corresponding linear and squared contrasts as shown in table 14. Because orthogonal polynomial contrasts preserve the orthogonality of the covariance matrix and allow testing for curvilinearity, they possess properties that are both generally statistically desirable and methodologically necessary for the purpose of this analysis. The descriptive statistics and correlations of all variables are shown in table 15.

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Insert table 15 here

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3.2.3 Modeling

In line with the hypothesis that audience taste influences an audience's evaluation of an actor and, consequently, the actor's rank mobility, I follow a two-step approach. In the first step, I model the actor's quality as the audience perceives it. I use OLS to estimate the perceived quality dependent on audience taste, uncertainty, and the strength of the candidate's HSAs. Recall that inversely linear relationships for conformity seekers and uniqueness seekers are expected under low uncertainty such that conformity seekers reward and uniqueness seekers penalize HSAs. Under uncertainty, however, an inverted U-shaped relationship is predicted for conformity seekers but a U-shaped relationship for uniqueness seekers. This requires to include three-way interactions between taste, uncertainty, and the strength of HSAs to allow for this change in functional form.[9] I estimate the model for perceived quality:

$$\begin{aligned} \textit{perc'd qlty}_{ic} = & \alpha + \beta_1 hsa_c + \beta_2 hsa_c^2 + \beta_3 uncertainty_c + \beta_4 NFU_i \\ & + \beta_5 hsa_c \times uncertainty_c + \beta_6 hsa_c^2 \times uncertainty_c \\ & + \beta_7 hsa_c \times NFU_i + \beta_8 hsa_c^2 \times NFU_i + \beta_9 uncertainty_c \times NFU_i \\ & + \beta_{10} hsa_c \times uncertainty_c \times NFU_i + \beta_{11} hsa_c^2 \times uncertainty_c \times NFU_i + \varepsilon_i \end{aligned} \tag{3.1}$$

where $\textit{perc'd qlty}_{ic}$ is the quality of candidate c perceived by audience member i. The main coefficients of interest are β_5 and β_6, which test HSA main effects under uncertainty (baseline hypothesis 1), β_7 and β_8, which test the influence of audience taste on HSA effects under low uncertainty (hypothesis 2), and β_9, β_{10}, and β_{11}, which test how effects of audience taste under

[9] The model with three-way interactions explains 30 percent of the total variance. Its explanatory power is 50 percent greater than the model with all two-way but without three-way interactions. The improvement in model fit is highly statistically significant.

high uncertainty differ from effects of audience taste under low uncertainty (hypothesis 3). Specifically, β_5 should be positive, β_7 should be negative, and β_{11} should be positive. These are necessary conditions to reject the null hypotheses of hypotheses 1, 2, and 3, respectively. However, they are not sufficient. For all higher-level interactions the support for a hypothesis will also depend on the significant lower-level effects, which necessitates a joint assessment.

From the estimated regression, I retrieve the predicted values of perceived quality and relate them to the audiences' recommendations for promotion. Using the predicted values assures that it is the perceived quality as it is caused by the strength of HSAs, uncertainty, and taste (and not the error term from that regression) that explains the recommendation for promotion. However, the results are robust to using perceived quality rather than its prediction as the explanatory variable. The estimated logistic model is given by:

$$Pr(recommendation_{ic} = 1) = \frac{1}{1 + exp(-\alpha - \beta_1 \widehat{perc'd\ qlty}_{ic})} \tag{3.2}$$

3.2.4 Results

I first turn to the analysis of perceived quality. The results of the regression are presented in table 16. For a more intuitive assessment of the results, I plot the significant effects in figure 7.

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Insert table 16 here

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Insert figure 7 here

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To test hypothesis 1, the baseline hypothesis that high-status affiliations are rewarded, on average, under high but not under low uncertainty, the coefficients of *hsa* and hsa^2 as well as their interactions with *uncertainty* need to be evaluated. Note first, that *hsa* and hsa^2 have insignificant direct effects. This implies that HSAs are on average not valuable when the uncertainty about the candidate's quality is low. The $hsa \times uncertainty$ interaction is positive and significant, whereas the $hsa^2 \times uncertainty$ interaction is insignificant. This implies that, on average, high-status affiliations are rewarded when the candidate's individual quality is uncertain, but not when the candidate's individual quality is known. This confirms hypothesis 1 and is in line with the extant status literature (Podolny and Phillips, 1996; Simonin and Ruth, 1998; Stuart et al., 1999; Podolny, 2001).

Hypothesis 2 stated that uniqueness seekers would penalize, whereas conformity seekers would reward HSAs under low uncertainty. To evaluate this hypothesis, note that the baseline of the analysis is the low-uncertainty condition because the value of the *uncertainty* dummy is zero when uncertainty is low. This of course means that the direct effect and all interaction terms containing *uncertainty* drop out in the low-uncertainty condition. This leaves the $hsa \times NFU$ interaction as the only significant predictor of perceived quality under low uncertainty. The negative sign of this coefficient informs us that individuals with high *NFU* values, i.e., uniqueness seekers, penalize high-status affiliations. By contrast, individuals with low *NFU* values, i.e., conformity seekers, reward HSAs. This supports hypothesis 2. The left panel of figure 7 graphs these effects.

Hypothesis 3 stated that under uncertainty the functional form of the relationship between HSAs and audience evaluation would change. Specifically, conformity-seeking audiences were hypothesized to prefer moderately strong HSAs, whereas uniqueness-seeking audiences were hypothesized to prefer extreme (weak or strong) HSAs. To test this hypothesis, I evaluate how high uncertainty alters the relationship between HSAs and audience evaluation compared to the baseline under low uncertainty. This requires to not only evaluate the three-way interactions,

but also the significant lower-level interactions of HSAs and taste. Note that the significant *hsa* $\times$ *NFU* interaction, which described audience reactions to HSAs under low uncertainty, is effectively cancelled out under high uncertainty by the *hsa* $\times$ *uncertainty* $\times$ *NFU* interaction. Instead, the curvilinear hsa^2 $\times$ *uncertainty* $\times$ *NFU* interaction kicks in. It implies that individuals with positive *NFU* scores, i.e., uniqueness seekers, reward extreme HSAs (weak or strong), whereas individuals with negative *NFU* scores, i.e., conformity seekers, reward moderate HSAs. This supports hypothesis 3. The right panel of figure 7 graphs these effects.[10]

High-status affiliations have a sizable effect on the audience's perception of candidate quality. Even for moderate differences in the need for uniqueness (1 SD) the difference in perceived quality can amount to approximately 15 percent. The effects will be stronger the more strongly uniqueness- or conformity-seeking the audience is. Also, the experiment did not provide very strong or very weak high-status affiliations. In situations in which weak and strong affiliations approach 0 or 100 percent, respectively, one would expect these effects to become stronger. Thus, high-status affiliations have a substantial effect on the perceived quality of a job candidate that is interdependent on the audience's taste for uniqueness or conformity and the uncertainty about the candidate's quality.

Note also that uncertainty has a strong negative direct effect on the audience's perception of a candidate's quality. Audiences, on average, discount actors about whose qualities they are uncertain. The estimated discount under high uncertainty amounts to 12.26 percent of the perceived quality under low uncertainty. I consider this effect a post-hoc validation that the uncertainty treatment was successful.

Finally, it is left to show the link between perceived quality and rank mobility. This is done by linking the predicted perceived quality to the audiences' recommendations for promotion. The result of the corresponding logistic regression is presented in table 17.

[10]Note that the three-way interaction between hsa^2, *uncertainty*, and *NFU* is only able to show a kink rather than curvilinearity because I administered three levels of HSAs. However, the modeling strategy using orthogonal polynomial contrasts makes these kinked "curves" consistent with curvilinearity. In the field studies, I will be able to look for true curvilinearity. This will reaffirm the experiment's support for curvilinearity.

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Insert table 17 here

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As expected, the predicted perceived quality has a strong positive effect on the recommendation for promotion. This implies that HSAs, *uncertainty*, and *NFU* exert their interdependent effects on the logged odds that an audience member recommends a candidate for promotion through their effect on the perceived quality of the candidate. The regression masks another interesting fact. Under uncertainty, the candidate with weak HSAs is never recommended for promotion. That not a single one of the twelve subjects in this condition recommended the candidate for promotion is certainly a consequence of sample size. If sample size were increased, at least some recommendations would occur by the laws of probability. Nevertheless, this result indicates that candidates whose quality is uncertain may face severe difficulty in advancing their rank if they do not possess HSAs.

Table 18 provides a summary of the results. The results provide full support for the theory. The effect of high-status affiliations on candidate evaluation is interdependent on the audience's taste for uniqueness or conformity and the audience's uncertainty about the candidate's quality. Under low uncertainty about the quality of a candidate, the candidate best improves his rank mobility through weak HSAs if his audience is uniqueness-seeking, but through strong HSAs if his audience is conformity-seeking. Under uncertainty about the quality of a candidate, the candidate best improves his rank mobility through extreme high-status affiliations if his audience is uniqueness-seeking, but through moderately strong high-status affiliations if his audience is conformity-seeking.

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Insert table 18 here

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The framework makes a discriminate prediction for the functional form of the relationship under five of the six conditions. In conformity-seeking audiences under low uncertainty and in neutral audiences under high uncertainty the framework makes the indiscriminate prediction that the audience will reward HSAs. As long as the degree of uncertainty is easily determined, this is unproblematic. In the other four conditions, the framework discriminately predicts a preference for moderate, extreme, or weak HSAs, or indifference to them.

It is imperative to note that this framework is sensitive to the specific assumption regarding the relationship between status and quality. Aligned with the status literature, I assumed that status and quality are positively correlated. If status and quality were uncorrelated, this would change the indirect effect of high-status affiliations on the inferred quality of an actor. Then, there should be no spillovers of HSAs on the inference about an actor's quality. The indirect effect of social information should be null. The curves for the uncertainty condition in figure 7 should rotate clockwise around the midpoint until quality spillovers in a neutral audience are flat. In this case, a neutral audience under high uncertainty should be just as indifferent to HSAs as a neutral audience under low uncertainty. However, the effect of HSAs on uniqueness- or conformity-seeking audiences should remain curvilinear under uncertainty, despite the rotation of the curves. An attempt to extrapolate from our results to what would happen if status and quality were strongly negatively correlated is considerably more risky (to see why, keep rotating the curves under uncertainty clockwise around their midpoint). The framework should thus be viewed as specific to arenas in which status and quality are positively or at least non-negatively correlated.

3.3 Academic promotion

3.3.1 Setting

Study 2 is the first of two field studies that provides a validation for one important instance of the framework. The specific context are promotion decisions of academics in management and organization theory who graduated from high-status institutions. This setting has three properties that make it a desirable context. First, the academic arena is strongly status-stratified (e.g., Burris, 2004; Cole and Cole, 1973; Jones et al., 2008; Merton, 1968). This should facilitate the identification of status effects. Second, professions are institutionalized arenas. (DiMaggio and Powell, 1983) that exercise social control over those who seek admission. Academia is no exception to this rule (e.g., Merton, 1979: p. 339). Professional organizations (Schofer, 2003), institutionalized PhD programs, hierarchical hiring networks (Burris, 2004; Han, 2003), the top-down communication of what constitutes good science (Fourcade, 2006), as well as interpersonal exchange at conferences are apt to result in a relatively coherent worldview as to what constitutes an "ideal" academic. This suggests that the audience deciding over a junior academic's rank mobility will be conformity-seeking with respect to an academic's professional identity. The audience in this case are the parties involved in an academic's tenure process. These generally include the academic's department, his school, and writers of letters of recommendation.[11] Third, work in academia is increasingly produced in scientific collaboration between or among authors (Wuchty et al., 2007). Teamwork obscures the individual inputs to team outputs, i.e., publications. The scarcity of credentials upon graduating and the fact that teamwork makes a junior academic's individual quality difficult to verify imply that external audiences face high uncertainty about a junior academic's true quality. A study of the promotion of junior academics should thus provide a test of hypothesis 3, specifically for the condition of a conformity-seeking audience under high uncertainty. Under these conditions, the theory

[11] It is not possible to discern these parties here because only the promotion decision itself is observed.

predicts an inverted U-shaped relationship between high-status affiliations and rank mobility.

3.3.2 Data

PhD graduates of high-status institutions in *management* and *organization theory* of the years 1999 and 2000 were sampled from the *ProQuest* dissertation database. By the end of 2009, graduates who graduated in the year 2000 or earlier would have typically gone through at least one cycle of the tenure clock even if they had changed institutions after a midterm review. This provides a sufficient time frame of up to 10 years after graduation to investigate rank mobility. Table 19 names the institutions from which the graduates were sampled and shows their rankings. A casual inspection of the faculty at these schools indicates that about 70 percent of the faculty are graduates from the sampled schools, the ratio typically being higher for junior faculty. The rankings and the representation of graduates from these schools among the faculty of these schools illustrates the high-status positions these institutions occupy.

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Insert table 19 here

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Sampling graduates of only high-status institutions has a number of advantages. Most importantly, this reduces the unobserved heterogeneity as of entering and graduating from the PhD program. This feature is important because event history analyses of single-spell data are unable to effectively control for unobserved heterogeneity. Reducing the unobserved heterogeneity by careful selection of the sample helps to reduce endogeneity concerns. Sampling graduates from high-status institutions also has the advantage that career information is more readily available for these graduates. Information on career tracks for graduates from lower-status institutions can be nearly impossible to obtain, in particular if they move on to teaching rather than research schools. Finally, because of their institutional heritage, graduates from high-status institutions

are not only more likely to easily engage in, but also to have variance in the strength of their HSAs. This is essential for identifying the effects of interest over the whole range of affiliation strength.

The sample consists of 97 graduates for which I was able to verify that they entered academia. I collected career information from the internet, the names and affiliations of their dissertation committee members from the *ProQuest* dissertation database, and information on their publications from the *ISI Web of Knowledge*. Because management and organization scholars are "article people," there is no dichotomy between "article" and "book people" in this sample that might complicate the analysis. The comprehensiveness of the records of the *ISI Web of Knowledge* assures a fairly complete picture of the publishing activity by these graduates. From these data, I derive a panel dataset containing career, publication, and coauthor information up to the year in which they were tenured or in which the dataset is right-censored at the end of 2009. This provides an average of approximately 8.65 years of follow-up for each graduate.

3.3.3 Measures

Rank mobility. I define rank mobility in this context as the promotion to associate professor with tenure, an important milestone in a junior academic's career. From the career information collected for each graduate and year, an indicator variable is created. The variable takes 1 in the year a graduate is promoted to associate professor with tenure and 0 for all other years.[12] For promoted graduates, this yields a series of 0s for all years after graduation or after taking the first academic job up to the year in which they were promoted and 1 for that year. All later years are dropped. For graduates that have not been promoted by the end of 2009, this yields a series of 0s in all years until right-censoring occurs at the end of 2009. For the 97 graduates in the sample there are 52 tenuring events in the time frame the data spans.

[12]For professors who have a change in their career stage from associate professor at one school to associate professor or back to assistant professor at another school, I assume that the first position was untenured. The initial promotion to associate professor is therefore not coded 1 for these graduates.

Strength of HSAs. Our independent variable of interest remains the strength of an actor's high-status affiliations. Recall that the goal is to provide a test of the effect of high-status affiliations under high uncertainty about an actor. As in the case of Quentin Tarantino and Christoph Waltz, it will help to identify a set of high-status affiliations that retain the uncertainty about a junior academic. I identify ties to—i.e., papers coauthored with—members of a junior academic's dissertation committee or PhD-granting institution as having this potential. A statement from an informant interview emphatically underscores that such linkages retain high uncertainty about a junior academic: *"If a junior faculty member comes up for tenure and had all coauthored work and all of those coauthors were very senior colleagues, then you would have to worry that that person does not know how to do it by themselves and isn't necessarily a creative and independent thinker on their own. I would always be looking for evidence [...] where you are not going to ride just on the coattails of someone else. And maybe they weren't; maybe they were the person who was writing all the papers. But the problem is, you just can't tell."*.[13]

Coauthors from the graduates' PhD-granting institutions and dissertation committees occupy high-status positions in the academic community due to their institutional affiliation and relative to the junior academic due to their seniority over him. In appendix B, I provide a validation for this high-status measure. The analyses show that the articles a junior academic coauthors with this set of coauthors receive more citations, even though they are not more likely to be published in "A"-Journals. The articles receive greater attention from the academic community, a previously identified status benefit (Merton, 1988; Simcoe and Waguespack, 2011). However, they are not of higher quality when publication quality is proxied by journal impact (cf. Azoulay et al., 2011). This suggests that the measure correctly identifies a set of high-status coauthors that retains the uncertainty about the junior academic's quality.

[13]This recent statement echoes a nobel laureate quoted in Merton's article on the Matthew effect: "If someone is considered for a job by people who have not had much experience with him, if he has published only together with some known names—well, it detracts. It naturally makes people ask 'How much is really his own contribution, how much [the senior author's]?' How will he work out once he goes out of that laboratory?" (Merton, 1968: p. 58, cf. Zuckerman, 1965).

I measure the strength of a graduate's high-status affiliations by summing the number of articles a graduate published with the defined set of high-status coauthors up to the focal year. I then divide this number by the total number of articles the graduate has published. The measure yields a proportion that expresses the strength of high-status affiliations that retain high uncertainty about the candidate. The formal definition is provided below.[14]

$$hsa_{i,t} = log\left(\frac{\sum_{\tau=1}^{t} \#\ of\ publications\ with\ high\text{-}status\ coauhtors_{i,\tau}}{\sum_{\tau=1}^{t} \#\ \text{of publications}_{i,\tau}} + 1\right) \tag{3.3}$$

where the strength of graduate i's high-status affiliations in year t is the sum of articles published with the defined set of high-status coauthors between years 1 and t divided by all articles the graduate published between years 1 and t. As the variable is right-skewed, I take the logarithm after adding 1.

This measure has the benefit that it is easy to access and aggregate. On the other hand, it clearly brushes over some detail in the status distribution. Even within departments and schools there may exist status hierarchies, determined by rank and scholarly achievement. However, to the extent that dichotomizing high-status collaborations and aggregating over them introduces measurement error, the estimated HSA effects are conservatively estimated, if not underestimated. As long as there is a significant inverted U-shape, the hypothesis will be supported with the caveat that the true effect might be even stronger.

Controls. The main concern in selecting control variables is to account for heterogeneity in the perceived quality of academics. The initial step was to only select graduates from high-status institutions to reduce the unobserved heterogeneity in the audience's perception of them. The next step is to account for heterogeneity in perceived or actual quality through control variables. Most importantly, an academic's chances to be promoted are strongly dependent on the number of his or her publications (Long et al., 1993). In management and organization theory,

[14] If a graduate has not published yet, the denominator is zero, and the ratio is undefined. In this case, $\text{hsa}_{i,t}$ is set to zero.

the main criterion to make tenure at a research institution is publications in highly regarded journals (so-called "A" journals). It is therefore helpful to make a categorical distinction between publications of higher and lower *perceived* quality. I consider all publications "A" that are considered "A" for the purposes of the UT Dallas research ranking of business schools.[15] In addition, I consider publications "A" if they are published in unambiguous "A" journals in the closely related disciplines of economics, sociology, psychology, and labor relations.[16]

In order to be promoted, an academic at a major research school needs to publish approximately one "A" publication per year. I created the dummy variable *More than four "A" publications* to capture this threshold. This threshold also received the greatest empirical support as the effect of this threshold was statistically stronger than for variables that set the threshold one "A" publication higher or lower. In addition, I determined empirically that having *Two or more other publications* seemed to benefit promotion. Allowing the definition of these thresholds to be determined by their empirical support minimizes the residual deviance that can be explained by high-status affiliations. This approach is rather conservative to assure that HSA effects are not overestimated. However, the results are robust to using the plain numbers of publications instead of these categorical cutoffs.

A graduate's perceived quality and thus rank mobility may also depend on the first and the

[15]These journals include *The Accounting Review, Journal of Accounting and Economics, Journal of Accounting Research, Journal of Finance, Journal of Financial Economics, The Review of Financial Studies, Information Systems Research, Journal on Computing, MIS Quarterly, Journal of Consumer Research, Journal of Marketing, Journal of Marketing Research, Marketing Science, Management Science, Operations Research, Journal of Operations Management, Manufacturing and Service Operations Management, Production and Operations Management, Academy of Management Journal, Academy of Management Review, Administrative Science Quarterly, Organization Science, Journal of International Business Studies, Strategic Management Journal.* In addition I include journals in micro-organizational behavior that are considered "A" journals, but which are omitted from the UTD research ranking. These include the *Journal of Applied Psychology*, *Personnel Psychology*, and *Organizational Behavior and Human Decision Processes*.

[16]The journals comprise the *American Economic Review*, the *Quarterly Journal of Economics*, *Econometrica*, the *Journal of Economic Literature*, the *Journal of Political Economy*, the *American Journal of Sociology*, the *American Sociological Review*, *Social Networks*, the *Journal of Personality and Social Psychology*, the *Psychological Bulletin*, the *Personality and Social Psychology Review*, the *Personality and Social Psychology Bulletin*, the *Psychological Review*, the *Journal of Labor Economics*, the *Journal of Human Resources*, and the *Industrial and Labor Relations Review*. These journal were selected based on their impact factor as provided by the *ISI Web of Knowledge*.

current employing institution. The first institution at which a graduate found employment is a measure for the perceived quality of the graduate at the time of graduation. Likewise, the current employing institution is a measure for the graduate's quality as it is perceived now or as it has been perceived recently. The assumptions here are that the institution would ask the junior faculty member to leave if it did not think the junior faculty member were of high enough quality and that the junior academic would have an incentive to leave if he could find employment at a better institution, receive better conditions, or advance his rank. In any case, these variables serve as further controls for the historic and current (perceived) quality of the academics. I code the dummy variables *Hiring school* and *Current school* in year t 1 if the school is a top-50 US or ranked non-US research school. Both variables take 0 otherwise.[17]

The likelihood to receive tenure may also depend on employee mobility. The argument is analogous to the argument for the *Current school* variable. High-quality junior faculty members will receive offers for upward or lateral moves with better conditions. By contrast, candidates who would not make tenure at their current school should be willing to move to a lower ranked school that offers them tenure. The variable *Change institutions* captures this mobility. A value of 1 indicates that the graduate changed the employing institution in year t. The variable takes 0 if the employing institution is the same as in the previous year.

Given limited publicly available information, I control for demographic effects to the extent possible. The variable *Female* indicates the junior academic's sex. It takes 1 for women and 0 for men. The variable *Black* takes 1 if a graduate is African-American and 0 otherwise. The descriptive statistics and correlations for all variables included in the main analysis are presented in table 20.

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Insert table 20 here

[17]The *Hiring school* and *Current school* variables are highly correlated. I reran all analyses using either variable alone, with consistent results.

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In robustness analyses, I address the concern that omitted ego network characteristics might have an inverted U-shaped relationship with the likelihood to receive tenure. In this case, the influence of HSAs on the likelihood to make tenure could be spurious and simply be reflective of the effect of more general network characteristics. Specifically, I measure the degree, the average tie strength, and the diversity in an academic's tie strengths. The analyses are robust to including these network controls. I refer the reader to appendix B2 for a motivation and definition of these variables and the results of the robustness analyses.

3.3.4 Modeling

The tenure event is dichotomous, occurs at best once, and is not observed for some of the graduates. Such single-spell duration data call for a modeling strategy that is flexible enough to accommodate this data pattern. Both event history models and logistic regression as a special case of event history modeling can accommodate this data structure. An event history model can account for the right-censoring of observations if a tenuring event did not occur until the end of the period of study. On the other hand, the logistic regression model can more flexibly account for the fact that certain years after graduation are more or less likely to have tenuring events by using time fixed effects. Both analyses will produce very similar results. It is not possible to account for unobserved heterogeneity with single-spell survival data. Thus, the analyses rely on the assumption that the selection of the sample and the included control variables account well for the heterogeneity in the (perceived) quality of the academics.

I model the likelihood of promotion in a Cox proportional hazard and a logistic model. The first model estimates the hazard of promotion in a Cox model with time-varying covariates (Cox, 1972; Efron, 1977). The partial likelihood of the model for time-varying covariates is defined

as:

$$L(\beta|y) = \prod_{i=1}^{K} \left[\frac{exp(x_i(t_i)\beta)}{\sum_{j \in R(t_i)} exp(x_j(t_i)\beta)} \right]^{c_i} \tag{3.4}$$

Each event can theoretically occur in K points in time. Every point in time contributes one conditional probability to the likelihood: the hazard that the focal observation has an event at time t_i given its covariate values x_i relative to the sum of the hazards of all the other observations that are at risk to have an event at time t_i given their covariate values x_j.[18] The estimation of the coefficient vector β maximizes the likelihood of observing the data. As the presented partial likelihood function cannot handle tied event times, Efron's (1977) approximation of the partial likelihood is used. The second model estimates the logistic equation:

$$Pr(tenure = 1|X,t)_i t = \frac{1}{1 + exp(-\alpha - X\beta - \tau_t)} \tag{3.5}$$

where α is an intercept term, X are the covariates (*hsa*, hsa^2, and controls), β is the vector of coefficients to be estimated, and τ_t are fixed effects indicating the t-th year after taking the first job. The estimation optimizes β so as to find the coefficient vector that maximizes the likelihood to observe the given set of tenuring events. Note that the time fixed effects in this regression will cause all years to drop out in which there are no tenuring events (i.e., the early years after taking the first job).

3.3.5 Results

The results of the event history and the logistic regression are shown in table 21. The odds ratio associated with the effect of high-status affiliations for both models is graphically displayed in figure 8.

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[18] c_i is an indicator that assures that censored observations, i.e., those observations that are not at risk at time t_i, do not contribute to the likelihood.

Insert table 21 here

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Insert figure 8 here.

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The analyses show that the strength of a graduate's ties to his high-status dissertation committee or PhD-granting institution has an inverted U-shaped relationship with the graduate's odds to be tenured. This functional form is consistent with the assertion that the audience is conformity-seeking and uncertain about a junior academic's quality. The results confirm this instance of hypothesis 3.[19]

The graphs in figure 8 show that the estimated size of the effect is substantial. Both models suggest similar effect sizes. The odds to be tenured are more than twice as high for graduates with optimally strong HSAs than for graduates without or with maximum-strength HSAs. The results indicate that a junior academic benefits most when he has coauthored between one third to one half of his papers with members of his or her high-status dissertation committee or institution. From that level, the benefits to high-status collaborations decline. Note that the mean value of the high-status variable (0.43) is close to the estimated optimum. This would imply that, on average, graduates strike a near optimal collaboration pattern with respect to high-status ties. However, many graduates do not collaborate at all with members of their high-status dissertation committee or PhD-granting institution, while many others collaborate

[19] It is noteworthy that the time fixed effects in the logistic regression alleviate the concern in the Cox model that the inverted U-shaped effect may result from the shifting distribution of the *hsa* variable over time. Robustness analyses further confirm this result. In further robustness analyses, I trichotomized *hsa* into $hsa < 1/3$, $1/3 \leq hsa \leq 1/2$, and $hsa > 1/2$. These cutoffs were chosen by the location of the estimated optimum in the two models (see figure 8). Instead of the linear and squared term, I included two dummies for $hsa < 1/3$ and $hsa > 1/2$ and restricted the analyses to up to 9 years after tenure (the reason being that the distribution of *hsa* is very similar for each year in this time interval). Consistent with the presented analyses, I find that a graduate's odds to be tenured are lower when the strength of his or her HSAs falls below one third or exceeds one half of his or her scholarly output.

excessively. Relatively few strike a balance around the optimum, suggesting that many junior academic's fail to optimally manage the impression their audience forms of their identity.[20]

The control variables with significant coefficients help validate the model. The ability to publish improves the chances to be promoted, as one would expect. Moreover, the effect of being able to publish in more well-regarded journals has a greater effect on the likelihood to be promoted than publications in less well-regarded journals. In addition, employee mobility is associated with a greater likelihood to receive tenure. This implies that graduates are willing to move from one institution to another in order to make tenure.[21]

3.4 Rank mobility in the Newcomb fraternity

Study 3 broadens the investigation from professional settings to a social setting to extend the generalizability of the framework. I analyze young mens' rise and fall in social rank among their peers. The setting for the analysis is the Newcomb (1961) fraternity. In two social quasi-experiments, 17 previously unacquainted young men were invited to move in a fraternity at the University of Michigan in 1954 and 1955. In return for their free accommodation, the students participated in the researchers' investigations. As part of their participation, the students repeatedly provided rankings of liking of their fellow fraternity members. The data have been widely used in the social sciences (e.g., Nordlie, 1958; Newcomb, 1961; Gould, 2002; Bothner et al., 2010a).

In the group setting of a fraternity one can assume the following: first, the audience is the fraternity itself. Every fraternity member's audience are the respective other fraternity members. Second, the fraternity members' uncertainty about the intrinsic qualities of their peers is high because the men are not previously acquainted with each other. Third, in this context, indi-

[20] An inquiry into the causes for these suboptimal patterns is beyond the scope of this article.

[21] This interpretation is plausible for both types, those who would not have been promoted at their current institution and the stars who are "chased" by schools other than their current employer.

viduals will likely have a need to belong (to the group). The need to belong has been avidly documented for situations with "frequent, nonaversive interactions with an ongoing relational bond" (for a review, see Baumeister and Leary, 1995). The fraternity setting fits this description almost prototypically. This is confirmed by one of the investigators (Nordlie, 1958: pp. 37–38, footnote 1), who notes that hardly ever any man put another fraternity member in the "dislike" category. Fourth, the fraternity context is likely to reward conformity rather than individuality. In a study of university housing at MIT conducted around the same time as Newcomb's (1961) study at the University of Michigan, Festinger et al. (1963: p. 91) noted that "[I]f a person wants to stay in a group, he will be susceptible to influences coming from the group, and he will be willing to conform to the rules which the group sets up." This suggests that conformity will be the prerequisite for status acquisition in this fraternity setting because "[e]arly in interaction, conformity to group expectancies serves to maintain or increase status, particularly as it is seen to be combined with the manifest contributions to the group [...]" (Hollander, 1958).

The Newcomb fraternity thus provides another testing ground for hypothesis 3, specifically for a conformity-seeking audience under high uncertainty. According to the developed theory and experimental evidence, the audience should prefer actors with moderately strong over actors with weak or strong HSAs under this condition. An inverted U-shaped relationship between high-status affiliations and rank mobility is predicted.

3.4.1 Measures

As in earlier studies, I use the longitudinal data of the second run of the study in 1955.[22] The data consist of the relational matrices of liking. The matrices contain the ranked dyadic popularity of the students with one another (for the data, see Nordlie, 1958). Consistent with prior literature, I reverse-code the ranks so that higher values express greater liking (Bothner et al., 2010a). The reverse-coded rank matrix R_t for week 1 is provided in table 22.

[22]The data of the first run are very incomplete and, therefore, not suitable for longitudinal analyses.

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Insert table 22 here

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In rank matrix R_t, matrix element r_{ijt} expresses the rank fraternity member i is given by fraternity member j in week t. Row $r_{i \cdot t}$ contains all ranks assigned to i, whereas column $r_{\cdot jt}$ contains all ranks assigned by j in week t. Thus, inbound ranks or ranks received by the fraternity members are read row-wise, whereas outbound ranks or ranks given are read column-wise.

Aligned with recent literature, I measure a fraternity member's status by his Bonacich (1987) centrality in the rankings of liking in a given week (Bothner et al., 2010a). The Bonacich centrality of the fraternity members in week t is defined as:

$$c_t(\alpha, \beta) = \alpha(I - \beta R_t)^{-1} R_t \mathbf{1} \tag{3.6}$$

Consistent with prior literature, β is set to $3/4$ times the reciprocal of the largest eigenvalue of R_t (e.g., Bothner et al., 2010a). It is a parameter for the transitivity of status through indirect links. α is a scaling constant. It is arbitrarily set such that the squared length of $c_t(\alpha, \beta)$ is equal to the number of actors in the network, i.e., to the number of fraternity members. This scaling assures that a centrality value of one is approximately an actor with average centrality (Bonacich, 1987). Finally, I is an identity matrix of the same dimensions as R_t, and $\mathbf{1}$ is a conformable vector of ones.

Let the set of all fraternity members Ω contain high and lower-status members. The set of high-status fraternity members be defined as $H \subset \Omega$. The set of lower-status fraternity members be defined as L, the complement of H. I consider a fraternity member to be in H in week t if he is among the top n fraternity members, as measured by his status. For the main analyses, I assume $n = 4$.[23] This implies that the top quartile of fraternity members is defined as high-status

[23] In robustness analyses presented in appendix C, I relax this assumption.

($\in H$). All other fraternity members are considered lower-status ($\in L$). Accordingly, I define the column vectors h_t and l_t as indicator vectors for the mens' membership in H and L in week t, respectively. Element $h_{i,t}$ of vector h_t takes 1 if fraternity member i is in the high-status group in week t and zero otherwise. Element $l_{i,t}$ of vector l_t takes 1 if fraternity member i is in the lower-status group in week t and zero otherwise. By the complementarity of H and L, $l_{i,t}$ takes 1 (0) whenever $h_{i,t}$ takes 0 (1).

Note that status, as measured by Bonacich centrality, has a 0.97 correlation with the sum or average rank received in the Newcomb fraternity. In other words, for these data, Bonacich centrality is essentially a linearly additive function of the received ranks. This implies a close correspondence of status and social rank for these data. Thus, status and social rank are essentially the same construct in the Newcomb fraternity. Based on this empirical fact, I measure a fraternity member's high-status affiliations by the average rank a man receives from members of the high-status group H. Formally,

$$hsa_{i,t-1} = \frac{r_{i\cdot t-1} \times h_{t-1}}{n - h_{i,t-1}} \tag{3.7}$$

where $r_{i\cdot t-1}$ is the row vector of ranks i is given by his peers in $t-1$, h_{t-1} is the column vector of high-status indicators, $\times$ stands for the matrix multiplication of vectors or matrices, n is the number of individuals in the high-status group, and $h_{i,t-1}$ is the indicator whether the focal individual i is himself in the high-status group in week $t-1$. The nominator is thus the sum of the ranks assigned to i by members of H in $t-1$. The denominator is the number of individuals who assigned these ranks.[24]

[24]Note that the inbound rank to oneself is 0 in these data. To create a fair basis of comparison in computing the average, one needs to take into account whether fraternity member i is himself a member of the high-status group. The denominator needs to be adjusted accordingly by subtracting $h_{i,t-1}$ from n.

Analogously, I compute as a control variable the strength of lower-status affiliations as the average rank received from members of the lower-status group L. Formally:

$$\text{lsa}_{i,t-1} = \frac{r_{i\cdot t-1} \times l_{t-1}}{N - n - l_{i,t-1}} \tag{3.8}$$

where $r_{i\cdot t-1}$ is the same as above, l_{t-1} is the column vector of lower-status indicators for week $t-1$, N is the total number of individuals (in the Newcomb fraternity, $N = 17$), n is the number of individuals in the high-status group, and $l_{i,t-1}$ is an indicator whether the focal individual i is himself in the lower-status group in week $t-1$. The nominator captures the sum of ranks assigned to i by members of L in $t-1$. The denominator is the number of individuals who assigned these ranks.[25]

For the main analyses, I employ three measures of rank mobility as the dependent variable. The first two capture, respectively, i's growth in status and rank among the entire fraternity. Growth in status is measured by the growth (or decline) in Bonacich centrality between weeks t and $t-1$:

$$\Delta c_{i,t}(\alpha,\beta) = c_{i,t}(\alpha,\beta) - c_{i,t-1}(\alpha,\beta) \tag{3.9}$$

Growth in rank is measured by the difference in a man's average inbound rank, formally defined as:

$$\Delta rank_{i,t} = rank_{i,t} - rank_{i,t-1} \tag{3.10}$$

where $rank_{i,t} = \frac{1}{N-1}\sum_j r_{ijt}$. Because of the high correlation between Bonacich centrality and inbound rank, both analyses should produce similar results.

The third dependent variable addresses a methodological concern with the first two dependent variables. Both growth in Bonacich centrality and rank raise endogeneity concerns. The reason

[25] As before, the denominator has to account for whether fraternity member i is himself a member of the lower-status group because the inbound rank to oneself is 0 in these data. To create a fair basis of comparison when computing the average, this requires to subtract $l_{i,t-1}$ from $N-n$.

is that the two measures capture a fraternity member's status growth among both H and L without separating the two. The extent to which fraternity member i's growth (or decline) in status or rank is due to his fluctuating popularity among H or L remains ambiguous. In the worst case, then, a fraternity member's status or rank growth might exclusively reflect changes in his popularity among H. This would be misaligned with the idea of observing an exogenous audience's reactions to a man's high-status affiliations. In order to evaluate the effect of high-status affiliations on an exogenously defined audience, the measure for high-status affiliations needs to be separated from status or rank growth among the high-status group. This is achieved by evaluating a fraternity member's growth in rank only among members of the lower-status group L. Formally,

$$\Delta lsa_{i,t} = lsa_{i,t} - lsa_{i,t-1} \tag{3.11}$$

where $lsa_{i,t-1}$ is defined as before and $lsa_{i,t} = \frac{r_{i\cdot t} \times l_{t-1}}{N-n-l_{i,t-1}}$. Variable $\Delta lsa_{i,t}$ measures fraternity member i's growth in rank between weeks $t-1$ and t among those fraternity members who were in the lower-status group in $t-1$.[26] Descriptive statistics and correlations for all variables are provided in table 23.

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Insert table 23 here

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3.4.2 Modeling

I analyze status growth in the Newcomb fraternity with linear fixed-effects models. The approach follows Bothner et al.'s (2010a) recent analyses of these data. The model specifications

[26] Note that $r_{i\cdot t}$ is postmultiplied by l_{t-1}, not l_t. This ensures that the basis of comparison is equal between $lsa_{i,t}$ and $lsa_{i,t-1}$ because they draw on rankings by the same set of fraternity members. This ascertains that i's growth in rank among L cannot be a spurious effect of potential turnover in the membership of L between $t-1$ and t.

for the three dependent variables is expressed by:

$$\Delta c_{i,t}(\alpha,\beta) = \beta_1 hsa_{i,t-1} + \beta_2 hsa^2_{i,t-1} + \beta_3 lsa_{i,t-1} + \alpha_i + \varepsilon_{i,t} \tag{3.12}$$

$$\Delta rank_{i,t} = \beta_1 hsa_{i,t-1} + \beta_2 hsa^2_{i,t-1} + \beta_3 lsa_{i,t-1} + \alpha_i + \varepsilon_{i,t} \tag{3.13}$$

$$\Delta lsa_{i,t} = \beta_1 hsa_{i,t-1} + \beta_2 hsa^2_{i,t-1} + \beta_3 lsa_{i,t-1} + \alpha_i + \varepsilon_{i,t} \tag{3.14}$$

For reasons discussed earlier, I expect high-status affiliations to have an inverted U-shaped relationship with a man's growth in social rank in a fraternity setting with previously unacquainted young men. Consequently, linear and squared terms of $hsa_{i,t-1}$ are included in the econometric model. The hypothesis of an inverted U requires a positive and significant β_1 and a negative and significant β_2. A man's rank among the lower-status group, $lsa_{i,t-1}$, is included as a control variable. The person-specific fixed effects (α_i) control for unobserved heterogeneity among the fraternity members. Using a fixed-effects specification generally alleviates concerns about endogeneity due to missing variables. Here, fixed effects eliminate time-constant effects on each fraternity member's status growth. For example, "hidden gems," whose likable, and "dazzlers" or "cockalorums," whose unlikable qualities may only be revealed over time, should be accounted for by the fixed effects. The results will thus capture the effect of high-status affiliations on status fluctuations within but not across fraternity members. Fixed time effects, by contrast, are redundant in modeling rank growth in the Newcomb fraternity. Because one man's growth must be accompanied by other men's declines in rank, total rank growth is a zero-sum game in the Newcomb fraternity in every week.[27] The estimates are robust to including time fixed effects, but omitting them increases the efficiency of the estimation.

[27]Because of the high correlation between rank and status in these data, status growth, as measured by the sum of the changes in the men's Bonacich centralities, is an approximate zero-sum game, as well.

3.4.3 Results

The results of the analyses are presented in table 24. The effect of HSAs on rank mobility is plotted in figure 9 based on the coefficients β_1 and β_2 of model 3 in table 24.

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Insert table 24 here

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Insert figure 9 here

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The results show that the relationship between high-status support and a fraternity member's growth in status and rank is inverted U-shaped, as indicated by a positive and significant coefficient on $hsa_{i,t-1}$ and a negative and significant coefficient on $hsa^2_{i,t-1}$ in all models. This relationship prevails in the analyses of the entire sample for the growth in Bonacich centrality and average inbound rank. Importantly, it strongly prevails in the analysis of Δlsa_{it}, which models a man's growth in rank only among that part of the audience that is exogenous to the high-status group. The results are consistent with hypothesis 3. In a fraternity setting with previously unacquainted young men, the relationship between high-status affiliations and rank mobility is consistent with the prediction for a conformity-seeking audience under high uncertainty.

The coefficient on $lsa_{i,t-1}$ helps validate the models. The higher a man's rank received from the lower-status group, the smaller is his status growth. This is what one would expect. Occupying a higher status position in a group leaves less potential for status growth among that group. In an unreported analysis, there is no evidence for a significant quadratic effect of $lsa_{i,t-1}$. I conducted a range of robustness analyses, which I present and discuss in more detail in appendix

C. The analyses show that the inverted U-shaped effect is an effect on a man's evaluation by the external audience L, but not on his evaluation by the high-status group H. On the other hand, the effect is independent of whether the evaluated man is a member of H or L. The effect is further robust to defining H and L more or less exclusively. Finally, the effect is robust to controlling for the effects of the fragility of a man's position in the social structure of the fraternity as well as for sycophancy. Consistent with Bothner et al. (2010a), who devised these measures, fragility and sycophancy have negative and significant effects on a man's growth in rank among the lower-status group L. Meanwhile, the inverted U-shaped effect of high-status affiliations on rank mobility remains strongly statistically significant. The estimated upside of HSAs in this model decreases by about 50 percent, whereas the downside only decreases by about 15 percent when fragility and sycophancy are controlled. This suggests that strong HSAs are not only not helpful, but that they can actually be harmful to a man's rank mobility.

3.5 Discussion

In this article, I investigated how audiences evaluate actors dependent on the strength of the actors' high-status affiliations. In developing the theory, I relaxed two implicit assumptions in the affiliation-based status literature. First, the developed theory does not assume the existence of one homogeneous audience. Instead, it allows audience taste to vary. Second, I argued that even though high-status affiliations may increase the perceived quality of an actor, they need not reduce the audience's uncertainty about him. This allowed for greater flexibility in theorizing about the effects of high-status affiliations on audience evaluation. The main contribution of this paper is that it provides a unifying theoretical framework that allows to account for a wide variety of affiliation-based status effects.

The theory predicted that an audience's reaction to high-status affiliations would be an effect of pure taste if the uncertainty about the actor's quality were low. Experimental evidence cor-

roborated this hypothesis. Under low uncertainty, high-status affiliations had no direct effect. However, when audience taste was taken into account, it showed that conformity-seeking audiences rewarded high-status affiliations, whereas uniqueness-seeking audiences penalized them. Under high uncertainty, by contrast, I argued that the effect of high-status affiliations on rank mobility would generally be curvilinear. These curvilinear effects were argued to stem from a tradeoff between an audience's (dis)taste for status and quality the audience attributed to an actor dependent on the strength of his high-status affiliations. These effects were argued to take an inverted U-shaped form for conformity seekers and a U-shaped form for uniqueness seekers. The experiment corroborated these curvilinear effects under high uncertainty.

The experiment also showed that status affiliations effects as they are commonly found in the literature require a specific audience taste. The extant literature has established monotonously increasing rewards for stronger high-status affiliations under high uncertainty and a lack or absence of rewards under low uncertainty. The experiment suggests that only an audience that is neither too uniqueness- nor too conformity-seeking shows this reward pattern for high-status affiliations. A neutral audience is indifferent to high-status affiliations under low uncertainty because it can readily assess an actor's quality and is unaffected by taste. Under high uncertainty, this audience is only affected by the quality halo high-status affiliations create, but not by taste. Therefore, stronger high-status affiliations create an impression of higher quality of an actor among neutral audiences as long as status is positively correlated with quality.

Two field studies provided evidence for the real-world relevance of the theoretical framework. I selected a condition that seemed particularly relevant: conformity-seeking audiences that face high uncertainty about an actor's quality. The importance ascribed to this condition derives from two facts. First, group settings as well as institutionalized arenas, both of which are prevalent, are prone to breed conformity seeking among the audience. Second, because individual quality is frequently difficult to verify, high uncertainty about an actor's quality may be the rule rather than the exception. Studies of rank mobility in academia and in a fraternity confirmed the

theory. Conformity-seeking audiences reward moderate high-status affiliations most when the audience is uncertain about an actor's quality.

The developed framework, summarized in table 18, makes a number of theoretical contributions to the status and identity literatures. First and foremost, the framework complements existing research on how high-status affiliations affect an actor's social identity as it is perceived by his audience (Homans, 1974; Blau, 1964; Stuart et al., 1999; Bothner et al., 2010a). Through the incorporation of heterogeneous audience taste, it allows to explain a considerably wider range of affiliation-based status effects than previous models. It can accommodate the prisms view of status (Podolny, 2001), and at the same time explain why Ike Cole and the junior academic seemed to suffer from their high-status affiliations. Ike Cole's singing career suffering from his older brother's fame suggests that despite his unquestionable ability to sing (low uncertainty) his audience was uniqueness-seeking and thus had no demand for the "double" of a favorite. In contrast to Ike Cole's case, the junior academic's audience is inherently uncertain about his ability. I further argued that this audience would be conformity-seeking. Such an audience rewards moderate but punishes *too* strong high-status affiliations when the uncertainty about the actor is high. The reason is that strong high-status affiliations maintain the uncertainty about an actor's quality and merit if individual quality is not verifiable. That the theory can account for both positive and negative consequences of high-status affiliations in a differentiated way is an improvement over the extant literature.

This article also contributes to an emerging stream of research in the identity literature that investigates how audiences come to differentially evaluate actors (in the widest sense) (Zuckerman and Kim, 2003; Hsu, 2006; Hsu et al., 2009; Pontikes, 2011) and how actors can benefit from non-conformity (Bishop Smith, 2011). As Goffman (1986: p. 46) discussed, social signals like affiliations can come to mean different things to different audiences. This study shows that audience taste shapes the lens through which audiences look at actors' affiliations and evaluate their identities. Despite theory and evidence showing that high-status affiliations are gener-

ally favorable, uniqueness-seeking audiences were shown to have a general distaste for them, whereas only conformity-seeking audiences have a taste for them. In addition, the taste for uniqueness or conformity showed interdependencies with the condition of uncertainty, making the relationship between high-status affiliations and rank mobility more complex. Future studies may thus benefit from a direct assessment of audience taste and from studying its contingent effects. Because of the role conformity plays in sociological theories, the study of the taste for uniqueness or conformity may have particular relevance to sociological inquiry.

Indirectly, this study also informs our understanding of the origins, maintenance, and legitimation of status hierarchies (Gould, 2002; Berger et al., 1998) as well as on social structure. The experiment suggests that even in the absence of uncertainty status hierarchies may emerge, be maintained, and be legitimate from the viewpoint of audiences purely based on the audience's taste for uniqueness or conformity. Such a hierarchy may, for example, develop under low uncertainty in conformity-seeking audiences. In this setting a single high-status actor may consecrate all of his affiliates. This effect may then radiate through the network of affiliations to those who are affiliated only through indirect ties. An entire status hierarchy independent of quality could emerge that determines status only dependent on the degrees of separation from the high-status actor.

The implications for social structure derive from the fact that actors respond to the incentives their audience provides for uniqueness (individuation) or conformity (Maslach, 1974). Therefore, one would expect actors to attempt to structure their affiliations in a way that yields the greatest rewards. If the most rewarded structures were feasible, one would expect a very particularistic social structure under low uncertainty in a uniqueness-seeking audience. Under this condition, the best way to acquire status is to differentiate oneself from those who already occupy high-status positions. Under low uncertainty in a conformity-seeking audience, one would expect a strongly hierarchical status structure. The "need for affiliation" among those who are trying to acquire status should result in large cumulative advantage accruing to those who al-

ready occupy high-status positions. This is because these high-status actors can "charge" their affiliates, so to speak, for the consecration that an affiliation with them provides. Under uncertainty in a uniqueness-seeking audience, a diverse structure may result. Some actors would likely try to attach to the elite core to exploit status spillovers. Others would likely migrate to the periphery in an attempt to differentiate themselves from the established elite through uniqueness. Under this condition, one would expect an "either/or" structure in which actors rarely attempt to bridge status strata. Finally, under uncertainty in a conformity-seeking audience, one would expect actors to take an "as well as" approach. Under this condition actors would frequently bridge or straddle between status strata. Actors would attempt to not only demonstrate conformity to the established elite, but also display a low-risk identity through moderate differentiation from high-status actors. A surprisingly integrated and balanced social structure would result.

Naturally, this article is not without limitations. The main limitation stems from the assumption about the relationship between status and quality on which the framework rests. The assumption of a positive correlation between status and quality defines the boundaries of the theory's applicability under high uncertainty. I assumed that status is positively but imperfectly correlated with quality. If status and quality were uncorrelated, the framework would still be valid with one relatively minor modification. However, if status had a very strong negative relationship with quality, the framework may not be valid under uncertainty. Then, all audiences may penalize high-status affiliations because the negative spillovers may become so large that they outweigh all taste effects. In defense of the presented model, such a condition may be extremely rare. If *noblesse oblige*, then status will generally be positively correlated with quality (Homans, 1974; Benjamin and Podolny, 1999). Finally, there may be a rare instance in which the framework does not apply under uncertainty even if status and quality are positively correlated. This might happen when two conditions hold: status would have to be nearly perfectly correlated with quality and the quality differences between actors of differential status would have to be large.

Under this condition, the quality halo high-status affiliations create might be so strong that it overwhelms the taste effects for all but the most uniqueness- or conformity-seeking audiences.

Future research could extend this work in a number of directions. A natural extension would be to investigate the same question in more hostile environments or under the pressure of competition. Candidates were evaluated individually in the promotion experiment, academics are evaluated individually by their tenure committees, and the fraternity setting was generally one of benign interactions. This would suggest to test the theory in more competitive environments like rank tournaments in which the benefits the audience awards are constrained to one of two or more actors. Future research might also probe more deeply into the relationship between high-status affiliations, perceived quality, and legitimacy. In the experiment, I measured perceived quality directly. Therefore, I focused on the direct relationships between high-status affiliations, perceived quality, and rank mobility. Yet, under high uncertainty, high-status affiliations became the *sine qua non* for rank mobility in the experiment. This suggests that the relationship between high-status affiliations, perceived quality (which some status literature defines as status Podolny, 1993), and legitimacy deserves more attention.

A pressing question that is beyond the scope of this article is why actors are over- or under-associated with high-status affiliates. Multiple reasons are conceivable. The first reason could be that many actors are unaware or oblivious of the audience's requirements. This could be a result of ignorance, a lack of information about audience taste, or a misjudgment of the uncertainty the audience has about one's own quality. Second, actors may derive objective benefits from strong high-status affiliations that outweigh their costs. As long as high-status affiliations propel an actor towards matching other criteria that the audience rewards (such as publishing papers, for example), the benefits may outweigh the costs. Third, actors with strong high-status affiliations may derive subjective benefits from high-status affiliations in terms of well-being or self-esteem (Cialdini et al., 1976; Ellemers et al., 1993). These benefits are a plausible explanation in social contexts such as fraternities in which actors may care little about how they are

valued by external audiences. However, this is a less plausible explanation in professional contexts because the subjective benefits of affiliation would likely be outweighed by the subjective and objective benefits of being promoted. Finally, actors may be under-associated with high-status affiliations by choice or because of the selectivity high-status actors exercise in partner selection. Why we observe suboptimal patterns in high-status affiliations remains an interesting question for future research.

3.6 Appendix

A Experimental study: instructions

Page 1: Welcome screen

Page 2: Instruction screen

Your task is to assess a job candidate. You are asked to judge how suitable the candidate is to be promoted. Your assessment is important to the promotion decision, and the promotion decision is important to the candidate's future career prospects, income, and status in the profession.

[Low-uncertainty condition]

> *The candidate's past projects were teamwork. The information you have is a subjective measure of quality for each of the past projects that the candidate was a part of, the perceived quality of all team members' inputs to a project, and limited information about the team members of each project.*
>
> *External observers have rated each team's output quality and each team member's input quality as being level A or B (where A is better than B). About the team members you also know whether they were of higher, equal, or lower status than the candidate.*

[High-uncertainty condition]

> *The candidate's past projects were teamwork. The information you have is a subjective measure of quality for each of the past projects that the candidate was a part of and limited information about the team members of each project. There is, however, no information as to what the candidate's individual contributions were to the teams' outputs.*

External observers have rated each team's output quality as being level A or B (where A is better than B). About the team members you only know whether they were of higher, equal, or lower status than the candidate.

The assessment of quality by the external observers is not perfect and may be influenced by factors other than the quality of the inputs, factors such as team composition, for example. Moreover, the team composition itself may have been affected by the quality potential of the respective project.

To promote a candidate like the one you are reviewing, those who ask you for advice normally require that the individual quality of the candidate be well above B on average.

Page 3: Decision screen

This page displays the information you have about the projects that the job candidate was a part of:

- The candidate was a part of six project teams total. Each group of linked nodes displays a project team.
- The candidate you are asked to evaluate is marked as a yellow node with a cross.
- The other team members are shown as green, yellow, or red nodes. Green nodes have lower status, yellow nodes have about equal status, and red nodes have higher status than the candidate.
- The team output quality as rated by external observers (A or B, where A is better than B) is displayed above each project.
- *[High-uncertainty condition only]* The input quality of each team member as rated by external observers (A or B, where A is better than B) is displayed next to the nodes.

- -

A figure showing the candidate's prior project teams was displayed here

- -

Would you recommend the candidate for promotion?

[ ] Yes [ ] No

(randomized item order)

Page 4: Quality assessment of the candidate

Page 5: Need for uniqueness and other subject assessment questions

Page 6: Demographic information and thank you

B Academic promotion

B1 Validating the high-status measure

The most tangible status spillovers are likely the increased attention the community pays to an academic's work and a perception of higher quality if work is produced with high-status collaborators (Merton, 1988; Jones et al., 2008; Simcoe and Waguespack, 2011). Therefore, tangible status spillovers should be most visible in the impact an academic's work has. Research impact is commonly measured by the citations an article receives (e.g., Cole and Cole, 1967; Jones et al., 2008; Azoulay et al., 2011). If status spillovers are a relevant phenomenon in this context and if the independent variable correctly identifies a set of high-status coauthors, then the articles a graduate publishes in collaboration with these coauthors should reproduce this aspect of the Matthew effect and have greater impact. I use as the measure of impact the citations an article has received by the end of 2009.

Analyzing article citations requires to control for publication age because older articles will generally have amassed a greater number of citations. The impact of an article is typically also

related to the quality of the journal in which an article is published. To control for this effect, I account for the fact that articles in higher-impact journals receive more citations, on average. To do so, I create a dummy variable that takes 1 if the article is published in an "A" journal and 0 otherwise. A journal is considered an "A" journal if the UT Dallas research ranking for business schools lists it as such or if the publishing journal is an "A" journal in a field closely related to management and organization theory. In addition, I control for the cumulative number of "A" publications to capture the quality and visibility of the graduate. I also include the cumulative number of coauthorships with the defined set of high-status coauthors. Prior high-status affiliations might decrease the recognizability of the graduate and thus the attention to the focal graduate's work if it is not coauthored with high-status coauthors. Finally, I include the status of the employing school at the time the article was published. The variable takes 1 if the school is a top-50 US or internationally ranked research school. This variable might capture increased exposure of or attention to an academic's work because of invitations to seminars, or higher perceived or actual quality. I fit a model for the logged citation count after adding one, including graduate random effects and publication year fixed effects. Because of expected heteroscedasticity, I estimate heteroscedasticity-robust standard errors. The analysis is provided in table 25.

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Insert table 25 here

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The regression model indicates that publications coauthored with members of a graduate's high-status institution or dissertation committee are cited more frequently. This suggests that the high-status measure correctly identifies a set of high-status members of the profession. The analysis is robust to a number of alternative specifications of the model. First, the effect is statistically robust to a sample selection model in which the first step models the likelihood of getting into an "A" journal, and the second step models the logged citation count. The likelihood

that an article is published in an "A" journal is *not* significantly higher for articles produced with the defined set of high-status coauthors. This suggests that the quality of work, as measured by the quality of the journal in which the work is published, is not significantly higher. However, the attention to and the *perceived* quality is higher for articles co-produced with this set of coauthors. The model is also robust to a fixed-effects specification.[28] Finally, models of the raw citation count in random-effects Poisson, negative binomial, and zero-inflated Poisson and negative binomial models with standard errors clustered around the graduate produced qualitatively identical results. This suggests that the chosen measure legitimately captures high-status affiliations relatively independently of quality.

B2 Robustness analyses

Status and knowledge alike flow through networks. Any effect of high-status affiliations could thus be a mere reflection of more general network characteristics of a graduate's collaboration network. I conduct robustness analyses with a number of popular network measures. Specifically, I reflect on the degree, tie strength, and the diversity in the strength of an academic's ties. One might expect that an intermediate number of distinct coauthors or moderate average tie strength to one's coauthors best combines economizing on repeated collaboration and the exposure to and influx of new knowledge. For the same reason, an actor may benefit from greater diversity in the strength of his or her ties, where diversity is defined as the asymmetry in a graduates tie strengths (Fang and Schilling, 2010; Lazer and Friedman, 2007). Accordingly, I compute the publication-adjusted degree, reflecting the number of a graduate's distinct coauthors, the average tie strength, reflecting the average number of articles published with each distinct coauthor, and the diversity in the graduate's coauthor relationships, reflecting how unevenly a graduate's collaborative works are distributed among his or her distinct coauthors. The

[28] A Hausman test did not indicate that the coefficients of the fixed and random-effects models are significantly different.

exact definitions of these variables are provided below:

$$\text{degree}_{i,t} = \frac{\text{\# of distinct coauthors}_{i,t}}{\text{\# of publications}_{i,t}} \tag{15}$$

The publication-adjusted degree is computed as the number of distinct coauthors across all articles divided by the number of articles graduate i has published by year t.

$$\text{tie strength}_{i,t} = \frac{\sum_{j=1}^{n} \text{\# of publications coauthored with } j_{i,t}}{\text{degree}_{i,t}} \tag{16}$$

The average tie strength is computed as the average number of articles graduate i has published with each distinct coauthor j by year t.

$$\text{tie strength diversity}_{i,t} = \sum_{j=1}^{n} \left(\frac{\text{\# of publications coauthored with } j_{i,t}}{\text{\# of coauthorships}_{i,t}} \right)^2 \tag{17}$$

Tie strength diversity is computed as the first-order network coupling (Uzzi, 1996) of a graduate to his coauthors, a Herfindahl-like measure (Herfindahl, 1950). The variable captures how asymmetric the strength of graduate i's coauthorship ties are that he or she has accumulated by year t. For example, a graduate who has coauthored five articles with one and one article with another coauthor has a tie strength diversity of $(5/6)^2 + (1/6)^2 = 13/18$. By contrast, a graduate who has coauthored on three articles each with two coauthors has a tie strength diversity of $(3/6)^2 + (3/6)^2 = 1/2$. Thus, higher values indicate greater diversity in the tie strength distribution. Note that all ratios would be undefined if the denominator were zero. In these cases, I set the value of the respective variable to zero. For the robustness analyses, I re-estimated the Cox proportional hazard and logistic regressions, with qualitatively identical results. For brevity, only the results of the logistic regressions are presented in table 26.

- - - - - - - - - - - - - - -

Insert table 26 here

- - - - - - - - - - - - - - -

The models reaffirm the earlier analyses. The inverted U-shaped relationship between HSAs and the likelihood to make tenure persists. Controlling for the network characteristics makes the effects of HSAs stronger, statistically and by effect size. The greater effect sizes for both the linear and squared terms imply that the inverted U becomes narrower. The optimum strength of HSAs may be even more narrowly located around the optimum. The location of the estimated optimum at 0.35 is very similar to the one estimated in the main analysis.

C Rank mobility in a fraternity: robustness analyses

Robustness analyses of the Newcomb fraternity data reaffirm that the external audience L prefers moderate over weak or strong high-status affiliations. The analyses are presented in table 27.

- - - - - - - - - - - - - - -

Insert table 27 here

- - - - - - - - - - - - - - -

The first two models tests whether the inverted U is not only an effect on the external audience L, but also on the endogenous audience H. This is not the case. A man's current rank among the higher-status group has a negative relationship with his growth in popularity among that group. The inverted U-shaped relationship between HSAs and rank mobility is a consequence of changes of a man's popularity only among the exogenously defined audience L. A related question is whether men who are members of H and L are differently affected by HSAs. This is not the case either. Model 3 in table 27 shows that the effect of HSAs on rank mobility is inverted U-shaped even if we restrict the analyses to the members of the lower-status group. An unreported analysis showed that the effect of HSAs is not significantly different on men who are

members of the high-status group than on men who are members of the lower-status group.[29]

There is also a concern that the findings are sensitive to the arbitrary size of the higher- and lower-status groups. To alleviate this concern, I redefine the high-status group as comprising the members with the three or five highest Bonacich centralities. I compute all variables accordingly and rerun the analyses for growth in rank among the lower-status group as in Model 3 of table 24. Models 4 and 5 in table 27 testify to the robustness of the results when the high-status group is defined more or less exclusively. Another methodological concern is that the potential for the growth or decline in rank is constrained by a man's current position in the rank order. Therefore, I redefine $\Delta lsa_{i,t}$ to capture the realized growth (or decline) as a percentage of the maximum possible growth (or decline). Model 6 in table 27 confirms that a man's growth in rank among L is inverted U-shaped in the strength of his HSAs, despite the less than optimal distributional properties of this variable compared to $\Delta lsa_{i,t}$.

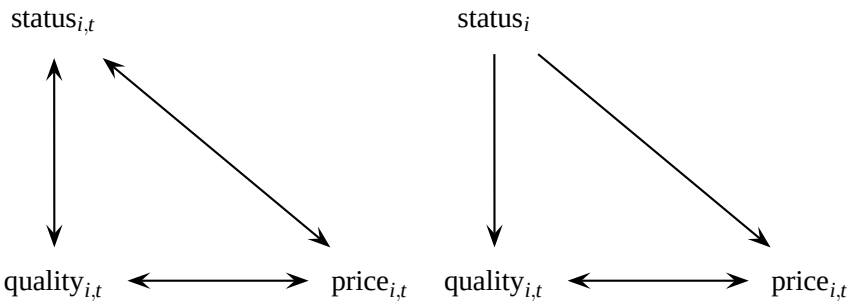
Finally, HSAs may correlate with other network measures that are associated with status growth. Specifically, Bothner et al. (2010a) have recently analyzed the same data and devised measures for fragility in social structure as well as sycophancy. Model 7 in table 27 shows that the inverted U-shaped effect of high-status affiliations is robust to the inclusion of Bothner et al.'s (2010a) fragility and sycophancy measures. Note that the inclusion of these variables mitigates the estimated upside of high-status affiliations by about 50 percent but the downside by only about 15 percent compared to model 3 in table 24. The statistical strength of the effects is little affected. This implies that the optimal strength of and benefits to HSAs may lie at an even lower level of affiliation than initially estimated.

[29]The full sample was analyzed such that the linear and squared terms for HSAs were coded separately for members of H and L, allowing the effects of HSAs to differ between members of H and L. For members of L the coefficients were significant at the one-percent level. For members of H, the coefficients were only significant at the ten-percent level in one-sided tests. However, two separate tests for the null hypotheses that the two coefficients for the linear term and the two coefficients for the squared term are equal to one another for members of H and L were not rejected. This implies that it is legitimate to pool members of H and L as in Model 3 of table 24. The effect of HSAs on rank advancement is consistently inverted U-shaped for all fraternity members.

The analysis also reaffirms Bothner et al.'s (2010a) finding that both fragility and sycophancy have negative and significant effects on status growth (here: rank growth among the lower-status group). Note that the effect of fragility on growth in rank among the lower-status group is statistically noticeably stronger than the effect of fragility on status growth among the entire fraternity reported in their study. This suggests that fragility may have particularly adverse consequences for an actor's approval by those audiences that do not occupy high-status positions themselves. This would be consistent with Bothner et al.'s (2010a) example drawn from Whyte's (1981) ethnography of an Italian slum in Boston that it was a man of particularly low status who challenged a man of high but fragile status.

Figure 1

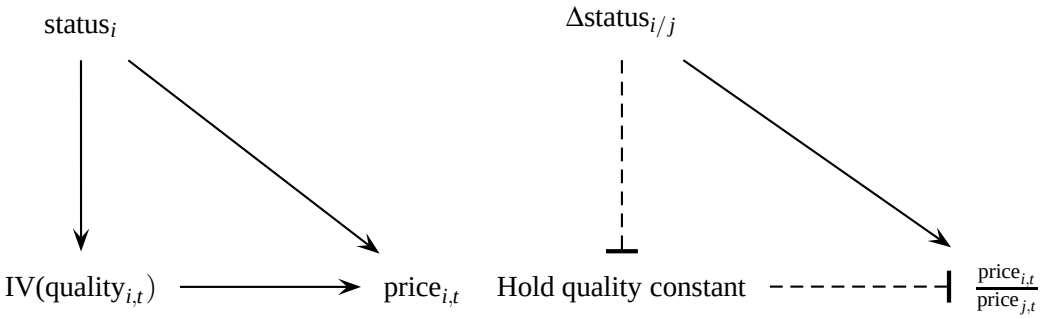
ENDOGENEITY BETWEEN STATUS, QUALITY, AND PRICE



(a) Typical setting (b) This setting

Figure 2

IDENTIFICATION STRATEGIES



(a) Instrumental variable estimator

(b) Matching estimator

Figure 3

ESTIMATED EFFECTS OF QUALITY AND REPUTATION ON PRICE

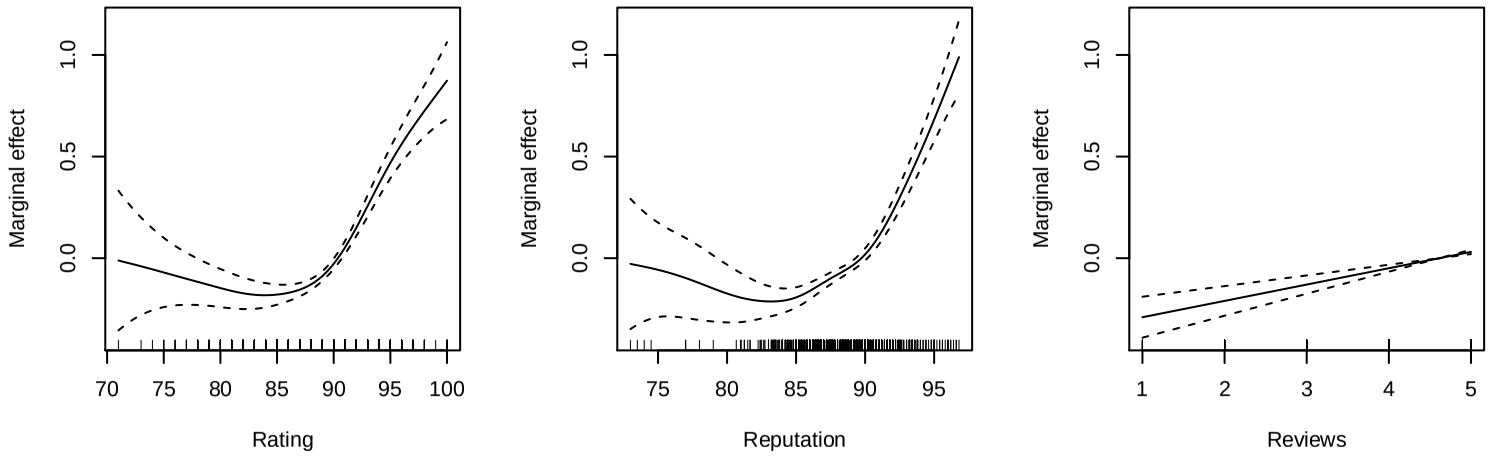


Figure 4
CO-INVESTMENT NETWORK

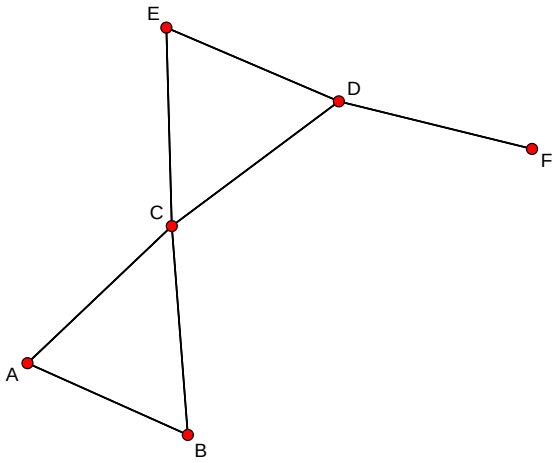
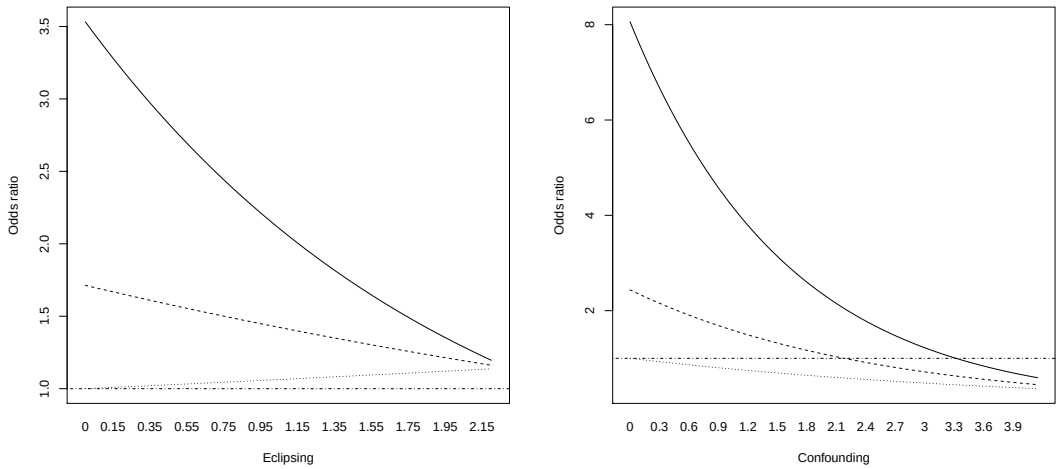


Figure 5

EFFECTS OF ECLIPSING AND CONFOUNDING

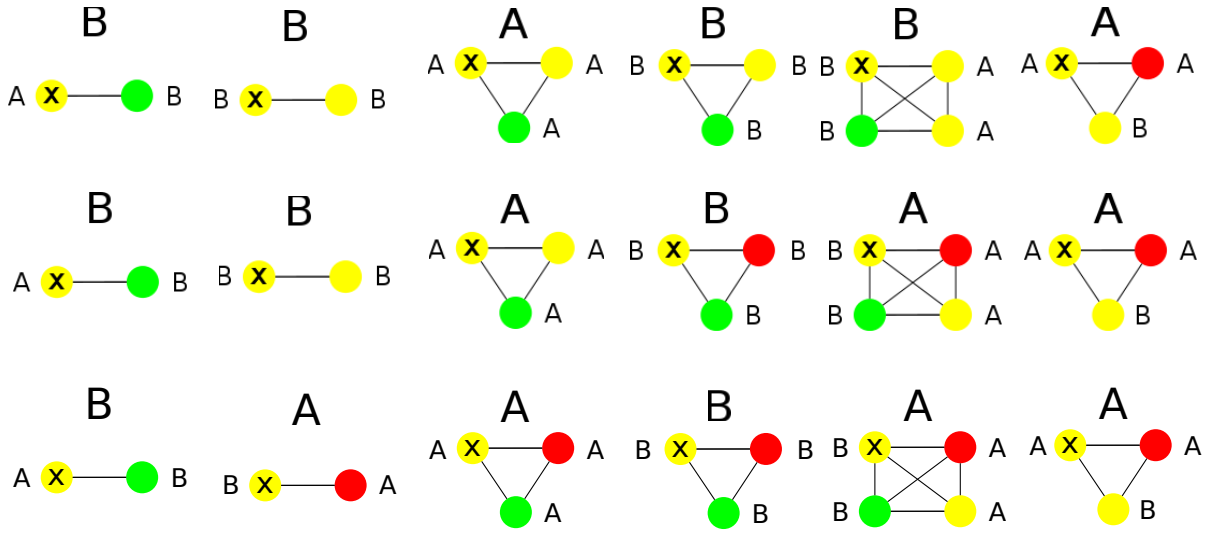


(a) Eclipsing (b) Confounding

NOTE.—The left panel shows the combined effect of eclipsing and status; the right panel shows the combined effect of confounding and status. The traces indicate status at zero (· · ·), at the mean (- - -), and one standard deviation above the mean (—). The horizontal line (- · -) indicates an odds ratio of 1.

Figure 6

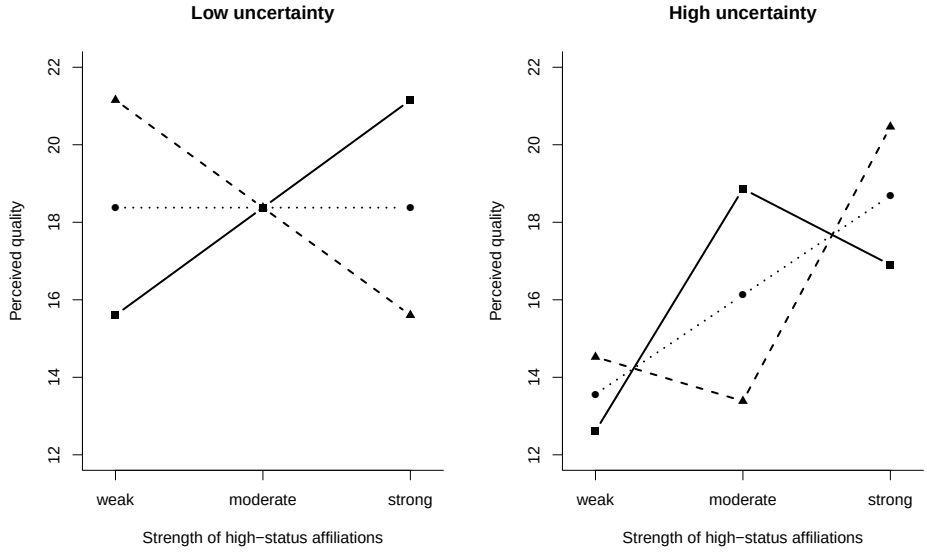
INFORMATION ON PRIOR PROJECT TEAMS IN THE LOW-UNCERTAINTY CONDITION



NOTE.—Green (grey) nodes: lower status; yellow (ghost grey) nodes: equal status; red (dark grey) nodes: higher status than the candidate. The candidate in question is the yellow node with a cross (left or top left node). Each row depicts one candidate's prior projects. Top row: candidate with weak high-status affiliations; middle row: moderate high-status affiliations; bottom row: strong high-status affiliations. Letters above teams are team output qualities. Letters besides nodes are input qualities. In the high-uncertainty condition, the information about the quality of the individual inputs was missing. Improvements of output quality from top to bottom row are due to i.) the participation of high-status collaborators who also produce higher quality, on average, and ii.) the marginal benefit of status in that teams whose input qualities are exactly AB or AABB receive an A evaluation if a high-status collaborator is on the team but a B evaluation otherwise.

Figure 7

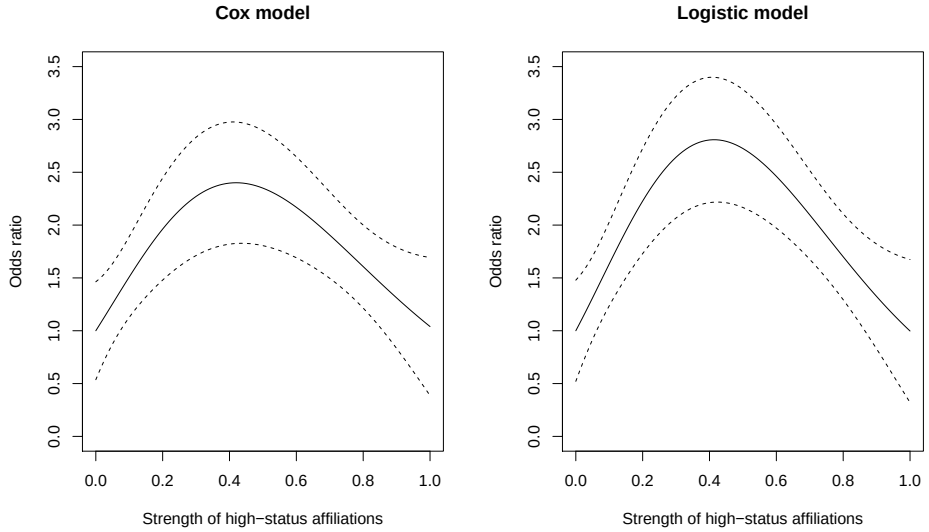
EFFECT OF THE STRENGTH OF A CANDIDATE'S HIGH-STATUS AFFILIATIONS ON PERCEIVED CANDIDATE QUALITY



NOTE.—The left panel shows effects under low uncertainty; the right panel shows effects under high uncertainty. X-axis levels indicate the strength of the candidate's high-status affiliations. The traces indicate the quality of the candidate perceived by conformity-seeking (—), neutral (· · ·), and uniqueness-seeking (- - -) audiences with a need for uniqueness one standard deviation below, at, and one standard deviation above the mean, respectively.

Figure 8

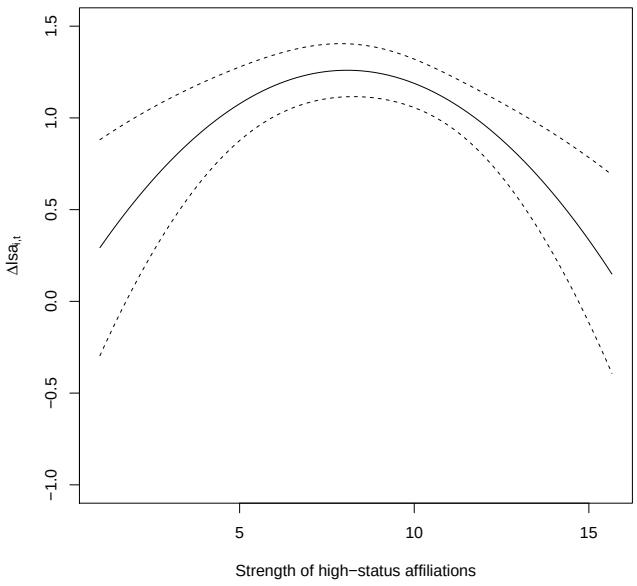
EFFECT OF THE STRENGTH OF GRADUATES' HIGH-STATUS AFFILIATIONS WITH THEIR ALMA MATER OR DISSERTATION COMMITTEE ON THE LIKELIHOOD TO RECEIVE TENURE



NOTE.—Estimated effect size and confidence intervals of the estimate.

Figure 9

EFFECT OF A FRATERNITY MEMBER'S POPULARITY AMONG THE HIGH-STATUS GROUP ON HIS RANK MOBILITY AMONG THE LOWER-STATUS GROUP



NOTE.—Estimated effect size and confidence intervals of the estimate for model 3 in table 24.

Table 1

ESTIMATED QUALITY DIFFERENCES BETWEEN GRAND CRU CLASSÉS, 1991–2008

	1st GCC	2nd GCC	3rd GCC	4th GCC
2nd GCC	3.35			
	$p \approx 0$			
3rd GCC	4.84	1.48		
	$p \approx 0$	$p \approx 0$		
4th GCC	5.59	2.23	0.76	
	$p \approx 0$	$p \approx 0$	p<0.01	
5th GCC	5.90	2.54	1.07	0.31
	$p \approx 0$	$p \approx 0$	p<0.0001	p<0.24

NOTE.—The cells show the estimated quality difference between the column and the row *grands crus classés*. The estimates are from a regression of wine ratings on *grands crus classés* and vintage fixed effects. The p-values are from a series of F-tests against the null hypothesis that the pairwise *grands crus classés* fixed effects are equal. $p \approx 0$ means that the p-value of the test is smaller than 10^{-14} in a one-sided test.

Table 2

REGRESSIONS OF THE EFFECT OF STATUS, REPUTATION, AND QUALITY ON PRICE

	1	2	3	4 (IV)	5	6 (IV)	7	8	9 (IV)	10	11 (IV)
2nd class	-1.44***	-1.17***	-1.24***	-1.21***	-1.12***	-1.11***	-0.92***	-1.08***	-1.01***	-0.83***	-0.81***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)
3rd class	-1.83***	-1.46***	-1.54***	-1.52***	-1.39***	-1.38***	-1.15***	-1.33***	-1.27***	-1.01***	-1.00***
	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.05)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)
4th class	-2.00***	-1.57***	-1.66***	-1.65***	-1.48***	-1.49***	-1.25***	-1.44***	-1.40***	-1.10***	-1.11***
	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.06)	(0.06)
5th class	-2.03***	-1.57***	-1.68***	-1.65***	-1.48***	-1.47***	-1.29***	-1.47***	-1.41***	-1.13***	-1.12***
	(0.05)	(0.06)	(0.05)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)	(0.05)	(0.05)	(0.05)
Reputation		0.07***			0.05***	0.05***					
		(0.01)			(0.01)	(0.01)					
Reviews		0.05**			0.03†	0.02					
		(0.02)			(0.02)	(0.02)					
Rating			0.06***	0.12***	0.04***	0.07***					
			(0.00)	(0.01)	(0.01)	(0.01)					
f(Reputation)							yes***			yes***	yes***
g(Reviews)							yes***			yes***	yes***
h(Rating)								yes***	yes***	yes***	yes***
Vintage fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Intercept	5.11***	-1.96***	-0.04	-5.01***	-3.18***	-6.02***	4.49***	4.94***	5.14***	4.53***	4.69***
	(0.07)	(0.52)	(0.41)	(0.79)	(0.54)	(0.80)	(0.07)	(0.07)	(0.07)	(0.07)	(0.08)
N	836	836	836	836	836	836	836	836	836	836	836
Adjusted R^2	0.72	0.78	0.77	0.77	0.79	0.79	0.81	0.81	0.82	0.85	0.85

NOTE.—*** p<0.001, ** p<0.01, * p<0.05, † p<0.1. Standard errors in parentheses.

Table 3

EXAMPLE OF TWO MATCHED WINES

Chateau	Leoville Las Cases	Lafite Rothschild
Vintage	2006	2006
Wine Spectator rating	95	95
Ten-year average	95.2	94.9
Reviews over ten years	10	10
Grand Cru Classé	2nd	1st
Per-bottle price	$225	$590

NOTE.—Matching criteria: vintage (equal), Wine Spectator rating (± 2), average rating over the ten years prior to the focal vintage (± 1), number of reviews over the ten years prior to the focal vintage (± 1), grand cru classé (different).

Table 4

MEAN COMPARISON OF THE MATCHED SAMPLE

Grand Cru Classé	Lower	Higher
Wine Spectator rating	89.36	89.46
Ten-year average	88.24	88.35
Reviews over ten years	9.19	9.20
Per-bottle price	$46.53	$75.79

Table 5

MATCHED SAMPLE ANALYSIS: RELATIVE PRICES

	1st GCC	2nd GCC	3rd GCC	4th GCC
2nd GCC	3.52 (3.27–3.73)			
3rd GCC	n/r	1.15 (1.09–1.22)		
4th GCC	n/a	1.38 (1.29–1.50)	1.03 (0.98–1.08)	
5th GCC	n/r	1.29 (1.23–1.34)	1.12 (1.06–1.17)	1.12 (1.08–1.17)

NOTE.—Cell values show the price of a wine in the column GCC relative to a matched wine in the row GCC. Standard errors are empirical confidence intervals using the 0.025 and 0.975 quantiles of 1000 bootstrapped matched samples. n/a: not available; n/r: not reported (see text).

Table 6

REGRESSIONS OF THE EFFECT OF STATUS, REPUTATION, AND QUALITY ON PRICE OVER TIME

	1991–2008	1991–2002	2003–2008
2nd class	-0.47***	-0.64***	-0.69***
	(0.10)	(0.11)	(0.15)
3rd class	-0.70***	-0.76***	-0.90***
	(0.10)	(0.13)	(0.16)
4th class	-0.84***	-0.89***	-0.99***
	(0.11)	(0.13)	(0.18)
5th class	-0.87***	-0.89***	-0.96***
	(0.10)	(0.12)	(0.18)
2nd class × time	-0.06***	-0.03†	-0.24***
	(0.01)	(0.017)	(0.05)
3rd class × time	-0.06***	-0.06**	-0.21***
	(0.01)	(0.02)	(0.05)
4th class × time	-0.05***	-0.05**	-0.21***
	(0.01)	(0.02)	(0.06)
5th class × time	-0.05***	-0.05**	-0.21***
	(0.01)	(0.02)	(0.06)
Reputation × time	0.006***	0.004*	0.00
	(0.001)	(0.002)	(0.01)
Reviews × time	-0.00	0.011†	-0.01
	(0.00)	(0.006)	(0.04)
Rating × time	-0.00	-0.01**	-0.02*
	(0.00)	(0.00)	(0.01)
f(Reputation)	yes***	yes	yes***
g(Reviews)	yes**	yes	yes
h(Rating)	yes***	yes***	yes***
Time	-0.35*	0.15	1.58*
	(0.15)	(0.23)	(0.79)
Intercept	4.62***	4.63***	4.88***
	(0.08)	(0.10)	(0.14)
N	836	541	295
Adjusted R^2	0.81	0.74	0.88

NOTE.—*** p<0.001, ** p<0.01, * p<0.05, † p<0.1. Standard errors in parentheses.

Table 7

HYPOTHETICAL INVESTMENT MATRIX P

	Venture capital firm					
	A	B	C	D	E	F
Round						
I	1	1	1	0	0	0
II	0	0	1	1	1	0
III	0	0	0	1	0	1

NOTE.—Illustration of investments by venture capital firms into investment rounds, where 1 indicates that venture capitalist j invested in round i.

Table 8

CO-INVESTMENT MATRIX R

	VC firm					
	A	B	C	D	E	F
VC firm						
A	1	1	1	0	0	0
B	1	1	1	0	0	0
C	1	1	2	1	1	0
D	0	0	1	2	1	1
E	0	0	1	1	1	0
F	0	0	0	1	0	1

NOTE.—Co-investment matrix $R = P^T P$ for the hypothetical investment matrix P in table 7.

Table 9

STATUS SCORE VECTOR $c(\alpha, \beta)$

VC firm	Status score
A	0.87
B	0.87
C	1.48
D	1.11
E	0.94
F	0.42

NOTE.—Status scores are Bonacich centralities for the sample matrix R in table 8 after setting the diagonal to zero. Parameter β is set to 3/4 times the reciprocal of the largest eigenvalue of R; α is set such that the squared length of c is equal to the number of actors.

Table 10

STATUS-WEIGHTED INVESTMENT MATRIX S

	Venture capital firm					
	A	B	C	D	E	F
Round						
I	0.87	0.87	1.48	0	0	0
II	0	0	1.48	1.11	0.94	0
III	0	0	0	1.11	0	0.42

NOTE.—Cell values indicate the status scores of the VC firms that invested in round i.

Table 11

PROPORTIONAL CO-INVESTMENT MATRIX V

	VC firm					
	A	B	C	D	E	F
VC firm						
A	0	1	1	0	0	0
B	1	0	1	0	0	0
C	0.5	0.5	0	0.5	0.5	0
D	0	0	0.5	0	0.5	0.5
E	0	0	1	1	1	0
F	0	0	0	1	0	1

NOTE.—Cell values are the proportions of investments in which VC i has co-invested with VC j.

Table 12

DESCRIPTIVE STATISTICS AND CORRELATIONS FOR THE VENTURE CAPITAL DATA, 1995–2009

	Variable	Mean	S.D.	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
(1)	Fund launched	0.23	0.42	0	1.00	1												
(2)	Status (log+1)	0.32	0.44	0	2.96	0.10	1											
(3)	Eclipsing (log+1)	0.89	0.64	0	2.95	-0.05	0.28	1										
(4)	Confounding (log+1)	0.89	0.80	0	3.84	0.00	0.65	0.79	1									
(5)	Degree (log +1)	2.47	1.40	0	6.59	0.04	0.80	0.53	0.74	1								
(6)	Average # of investors in round	4.26	2.42	1	28.73	-0.04	0.35	0.66	0.75	0.52	1							
(7)	Exits	2.9	6.62	0	178.00	0.11	0.67	-0.02	0.27	0.47	0.11	1						
(8)	Fails	0.32	1.40	0	35.00	0.01	0.41	0.03	0.20	0.32	0.11	0.42	1					
(9)	Rounds (log +1)	2.37	1.17	0.69	6.65	0.09	0.79	0.13	0.40	0.82	0.11	0.61	0.36	1				
(10)	Sum of investment (000s logged)	8.74	2.14	0	14.94	0.00	0.22	0.35	0.34	0.40	0.34	0.13	0.09	0.26	1			
(11)	Sum of investments missing	0.04	0.20	0	1.00	0.00	-0.15	-0.24	-0.22	-0.31	-0.20	-0.06	-0.05	-0.22	-0.85	1		
(12)	Funds	2.59	2.01	1	45.00	0.08	0.63	0.01	0.26	0.56	0.13	0.65	0.33	0.69	0.21	-0.13	1	
(13)	Diversification	0.49	0.30	0	1.00	-0.05	-0.27	0.06	-0.07	-0.34	0.08	-0.23	-0.10	-0.51	-0.16	0.11	-0.35	1
(14)	Diversification missing	0.02	0.15	0	1.00	-0.01	-0.11	-0.13	-0.13	-0.20	-0.09	-0.07	-0.03	-0.21	-0.14	0.09	-0.12	-0.26

NOTE.—Correlations with an absolute value greater than 0.01 are significant at $p<0.05$.

Table 13

ODDS RATIOS FROM FIXED-EFFECTS LOGIT ESTIMATES FOR THE ODDS TO RAISE A NEW FUND

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Status	1.82***	1.80***	4.17***	2.55***	12.15***	16.16***	27.51***	13.53***
	(4.08)	(4.01)	(6.90)	(5.83)	(6.40)	(7.03)	(3.41)	(4.64)
Eclipsing		0.79***	0.91			0.99	1.15	0.94
		(-3.50)	(-1.24)			(-0.17)	(0.82)	(-0.49)
Status × eclipsing			0.47***			0.54***	0.50*	0.57***
			(-5.75)			(-4.55)	(-1.92)	(-2.74)
Confounding				0.68***	0.72***	0.78***	0.56***	1.00
				(-5.17)	(-4.29)	(-2.66)	(-3.11)	(0.04)
Status × confounding					0.53***	0.60***	0.72	0.54***
					(-4.38)	(-3.34)	(-0.87)	(-2.94)
Degree (log+1)	0.94	1.03	0.99	1.06	0.97	0.98	1.47***	0.82**
	(-1.11)	(0.52)	(-0.13)	(0.99)	(-0.41)	(-0.28)	(2.78)	(-2.17)
Average # of investors in round	0.99	1.00	1.00	1.03	1.04*	1.04*	1.04	1.06**
	(-0.82)	(-0.11)	(0.22)	(1.38)	(1.88)	(1.85)	(0.91)	(2.07)
Exits	1.02***	1.02***	1.01***	1.02***	1.02***	1.02***	1.02	1.02***
	(3.44)	(3.21)	(2.64)	(3.08)	(3.58)	(2.97)	(1.48)	(3.12)
Fails	0.97**	0.96**	0.96**	0.96**	0.96**	0.96**	0.90	0.95**
	(-2.01)	(-2.14)	(-2.17)	(-2.28)	(-2.15)	(-2.20)	(-1.41)	(-2.46)
Rounds (log +1)	1.11	1.04	1.09	1.01	0.94	0.98	0.58***	1.38***
	(1.49)	(0.55)	(1.21)	(0.12)	(-0.83)	(-0.30)	(-3.46)	(2.91)
Sum of investment (000s logged)	1.03	1.03	1.03	1.03	1.03	1.03	0.94	1.07
	(0.85)	(0.93)	(0.97)	(0.85)	(0.89)	(0.97)	(-0.92)	(1.63)
Sum of investments missing	1.37	1.37	1.45	1.38	1.38	1.44	0.55	2.54**
	(1.06)	(1.07)	(1.24)	(1.09)	(1.08)	(1.22)	(-0.94)	(2.24)
Funds	0.69***	0.69***	0.67***	0.68***	0.67***	0.66***	0.37***	0.50***
	(-15.56)	(-15.78)	(-16.41)	(-16.05)	(-16.35)	(-16.79)	(-15.33)	(-18.22)
Diversification	0.93	0.92	0.89	0.87	0.78*	0.78*	0.98	0.89
	(-0.55)	(-0.69)	(-0.91)	(-1.07)	(-1.91)	(-1.86)	(-0.09)	(-0.61)
Diversification missing	0.81	0.77	0.77	0.73	0.63**	0.65**	0.63	0.75
	(-1.09)	(-1.35)	(-1.35)	(-1.59)	(-2.32)	(-2.18)	(-1.04)	(-1.03)
Observations	17,498	17,498	17,498	17,498	17,498	17,498	4,053	9,820
Firms	1,731	1,731	1,731	1,731	1,731	1,731	862	1,267
log likelihood	-5857	-5851	-5834	-5844	-5834	-5822	-1363	-3211

NOTE.—*** p<0.01, ** p<0.05, * p<0.1; z-statistics in parentheses.

Table 14

CONTRAST CODING FOR EVENLY-SPACED TREATMENT LEVELS

HSAs	hsa	hsa^2
1	$-\sqrt{1/2}$	$\sqrt{1/6}$
3	0	$-2\sqrt{1/6}$
5	$\sqrt{1/2}$	$\sqrt{1/6}$

Table 15

DESCRIPTIVE STATISTICS AND CORRELATIONS FOR THE EXPERIMENT

Variable	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)
(1) Perceived quality	17.27	4.09	6	26	1				
(2) Promotion	0.61	0.49	0	1	0.60	1			
(3) hsa	0.08	0.55	-0.71	0.71	0.17	0.35	1		
(4) hsa^2	-0.07	0.60	-0.82	0.41	-0.01	0.02	0.12	1	
(5) Uncertainty	0.55	0.50	0	1	-0.18	-0.11	0.16	0.20	1
(6) Need for unqiuencess	0	4.40	-12.22	9.78	0.29	0.24	0.16	-0.06	-0.15

NOTE.—Correlations with an absolute value greater than 0.20 are significant at $p<0.05$.

Table 16

OLS REGRESSION OF PERCEIVED CANDIDATE QUALITY

	Perceived quality
hsa	-1.03
	(1.07)
hsa^2	1.12
	(0.91)
Uncertainty (high)	-2.25***
	(0.79)
Need for uniqueness (NFU)	0.01
	(0.14)
hsa × uncertainty	3.62**
	(1.43)
hsa^2 × uncertainty	-1.58
	(1.28)
hsa × NFU	-0.89***
	(0.27)
hsa^2 × NFU	-0.18
	(0.23)
Uncertainty × NFU	0.23
	(0.19)
hsa × uncertainty × NFU	1.03***
	(0.35)
hsa^2 × uncertainty × NFU	0.76**
	(0.30)
Intercept	18.38***
	(0.57)
Number of observations	94
Degrees of freedom	82
F-statistic	4.56
Model p-value	<0.0001
Adjusted R^2	0.30

NOTE.—*** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses.

Table 17

LOGIT REGRESSION OF THE RECOMMENDATION FOR PROMOTION

	Recommendation
Predicted perceived quality	0.86***
	(0.20)
Intercept	-14.22***
	(3.37)
Number of observations	94
Degrees of freedom	92
McFadden's pseudo R^2	0.34
Adjusted count R^2	0.46

NOTE.—*** p<0.01, ** p<0.05, * p<0.1. Standard errors in parentheses.

Table 18

AUDIENCE PREFERENCES FOR THE STRENGTH OF HIGH-STATUS AFFILIATIONS

Audience ↓ / Uncertainty →	Low	High*
conformity-seeking	strong	moderate
neutral	indifferent	strong
individuality-seeking	weak	extremes

NOTE.— *Predicated on the assumption that status and quality are positively correlated.

Table 19

SCHOOL RANKINGS

University (School)	BW	FT	NWR	UTD
Berkeley (Haas)	18	9	7	27
Carnegie Mellon (Tepper)	14	17	17	25
Chicago (GSB)	10	6	6	9
Columbia (GSB)	7	5	9	5
Cornell (Johnson/ILR)	8	8	16	30
Duke (Fuqua)	5	14	14	13
Harvard (GSB)	3	1	1	2
MIT (Sloan)	4	4	4	4
Northwestern (Kellogg)	2	7	5	10
NYU (Stern)	13	10	10	3
Stanford (GSB/MS&E)	11	3	2	7
UCLA (Anderson)	12	11	11	6
UMich (Ross)	6	13	12	8
UPenn (Wharton)	1	2	3	1

NOTE.—BW: Business Week, FT: Financial Times, NWR: US News & World Report, UTD: UT Dallas research ranking. Rankings are for business schools only. Business Week, Financial Times, and US News & World Report rankings are for the year 2000. The UT Dallas Research Ranking is for the earliest available period between 2000 and 2004. The UT Dallas Research Ranking evaluates the total number of publications in the best management journals. On the one hand, this may underestimate the research activity of schools that are strongly discipline-based, for example, in economics, sociology, or psychology, and whose management faculty publishes in the respective top journals. On the other hand, this may underestimate the research productivity of comparatively small departments. This may at least partially explain why Berkeley, Cornell, and Carnegie Mellon rank much lower in this than in the other rankings.

Table 20

DESCRIPTIVE STATISTICS AND CORRELATIONS FOR THE DATA ON ACADEMIC PROMOTION

	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Tenure	0.06	0.24	0	1	1								
(2) hsa	0.32	0.29	0	0.69	0.00	1							
(3) hsa^2	0.18	0.2	0	0.48	-0.05	0.97	1						
(4) More than four "A"-publications	0.03	0.17	0	1	0.33	0.01	-0.02	1					
(5) More than two other publications	0.21	0.41	0	1	0.24	0.05	-0.04	0.06	1				
(6) First school = research school	0.81	0.4	0	1	0.01	0.23	0.21	0.09	-0.1	1			
(7) Current school = research school	0.79	0.41	0	1	-0.01	0.21	0.19	0.07	-0.12	0.94	1		
(8) Change of institutions	0.09	0.28	0	1	0.15	-0.04	-0.05	-0.03	0.17	0	-0.06	1	
(9) Female	0.36	0.48	0	1	-0.03	0.11	0.11	0.03	-0.04	0.24	0.22	0.02	1
(10) Black	0.05	0.22	0	1	-0.02	-0.15	-0.13	-0.04	-0.04	0.12	0.12	0.04	-0.07

NOTE.—Correlations with an absolute value greater than 0.06 are significant at $p<0.05$.

Table 21

COX PROPORTIONAL HAZARD AND LOGISTIC REGRESSIONS OF THE LIKELIHOOD TO RECEIVE TENURE

	Cox	Logistic
hsa	5.00**	5.96**
	(2.38)	(2.44)
hsa^2	-7.13**	-8.61**
	(3.53)	(3.63)
More than 4 "A"-publications	2.08***	2.73***
	(0.38)	(0.50)
More than 2 other publications	0.77**	0.88***
	(0.32)	(0.34)
Hiring school=research school	-0.02	0.03
	(0.76)	(0.85)
Current school=research school	-0.21	-0.25
	(0.69)	(0.79)
Change of institutions	0.93**	1.13***
	(0.37)	(0.40)
Female	-0.21	-0.32
	(0.33)	(0.36)
Black	0.18	0.16
	(0.75)	(0.78)
Intercept	n/a	-5.06***
		(1.02)
Time fixed effects	n/a	yes
N	839	548
Model p-value	<0.0001	<0.0001
McFadden's pseudo R^2	0.09	0.27

NOTE.—*** p<0.01, ** p<0.05, * p<0.1 for two-sided tests. Standard errors in parentheses.

Table 22

RANK MATRIX OF LIKING IN THE NEWCOMB FRATERNITY

	[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]	[13]	[14]	[15]	[16]	[17]
[1]	0	9	4	4	3	10	2	8	11	15	5	2	16	3	1	9	8
[2]	10	0	7	16	7	4	13	9	1	1	10	6	2	12	8	6	2
[3]	5	1	0	2	6	6	6	1	9	8	13	15	1	9	13	2	7
[4]	6	16	10	0	10	14	14	10	3	3	9	11	10	11	9	14	15
[5]	7	6	9	3	0	2	1	7	4	6	11	12	13	4	16	4	13
[6]	13	5	6	13	1	0	9	16	6	13	3	3	15	8	4	1	6
[7]	4	15	8	14	5	7	0	3	13	14	8	10	5	15	6	3	12
[8]	3	3	2	1	13	15	11	0	2	7	1	4	3	1	5	5	5
[9]	2	7	11	5	12	13	8	6	0	10	14	7	4	16	11	16	14
[10]	1	4	12	10	11	1	7	14	10	0	4	13	9	14	15	8	10
[11]	14	2	15	11	15	3	12	15	16	2	0	14	11	5	14	15	9
[12]	8	11	16	8	14	12	15	12	15	9	15	0	6	10	12	11	16
[13]	16	10	1	9	4	16	3	13	8	5	7	1	0	2	7	7	11
[14]	12	8	5	6	2	5	5	2	12	4	2	9	7	0	2	10	1
[15]	9	12	13	7	9	8	4	5	5	16	6	8	14	13	0	12	3
[16]	11	14	3	12	8	9	10	4	7	11	12	5	8	6	3	0	4
[17]	15	13	14	15	16	11	16	11	14	12	16	16	12	7	10	13	0

NOTE.—Matrix is from week 1 of the study. Ranks are reversed so that higher ranks indicate greater liking. Row i shows ranks assigned to i. Column j shows ranks assigned by j.

Table 23

DESCRIPTIVE STATISTICS AND CORRELATIONS FOR THE NEWCOMB FRATERNITY DATA

Variable	Mean	SD	Min	Max	(1)	(2)	(3)	(4)	(5)
(1) $\Delta c_{i,t}(\alpha,\beta)$	-0.003	0.076	-0.376	0.232	1				
(2) $\Delta rank_{i,t}$	0.000	0.723	-3.062	2.250	0.97	1			
(3) $\Delta lsa_{i,t}$	0.003	0.796	-2.500	2.583	0.87	0.94	1		
(4) $hsa_{i,t-1}$	8.762	3.698	1.000	15.667	-0.42	-0.34	-0.2	1	
(5) $hsa^2_{i,t-1}$	90.387	63.076	1.000	245.444	-0.38	-0.31	-0.17	0.95	1
(6) $lsa_{i,t-1}$	8.440	2.700	1.667	13.615	-0.6	-0.6	-0.59	0.3	0.16

NOTE.—All correlations are within-correlations and significant at $p<0.05$.

Table 24

RANK MOBILITY IN THE NEWCOMB FRATERNITY

	$\Delta c_{i,t}(\alpha,\beta)$	$\Delta rank_{i,t}$	$\Delta lsa_{i,t}$
$hsa_{i,t-1}$	0.014*	0.224***	0.312***
	(0.008)	(0.079)	(0.092)
$hsa^2_{i,t-1}$	-0.002***	-0.018***	-0.019***
	(0.000)	(0.005)	(0.005)
$lsa_{i,t-1}$	-0.041***	-0.416***	-0.483***
	(0.004)	(0.038)	(0.044)
N	238	238	238
Within R^2	0.454	0.431	0.384

NOTE.—Results are from fixed-effects regressions. *** p<0.01, ** p<0.05, * p<0.1 for two-sided tests. Standard errors in parentheses.

Table 25

REGRESSION OF CITATIONS RECEIVED ON A PAPER

	Citations
High-status coauthor(s)	0.49***
	(0.104)
# of pubs with high-status coauthors	-0.09**
	(-0.036)
Publication-adjusted network degree	0.02
	(0.014)
"A" journal	0.63***
	(0.095)
# of "A" journal publications	-0.05
	(0.046)
Research school	0.59***
	(0.195)
Publication year fixed effects	Yes
Graduate random effects	Yes
N	499
Units of observation	94
Within R^2	0.51

NOTE.—*** p<0.01, ** p<0.05, * p<0.1 for two-sided tests. Robust standard errors in parentheses.

Table 26

ROBUSTNESS ANALYSES: ACADEMIC PROMOTION

	Model 1	Model 2	Model 3	Model 4	Model 5
hsa	6.34***	6.09**	6.93***	6.34***	6.93***
	(2.40)	(2.44)	(2.52)	(2.42)	(2.53)
hsa^2	-10.50***	-10.27***	-11.37***	-10.49***	-11.69***
	(3.71)	(3.73)	(3.88)	(3.75)	(3.92)
degree	0.15	0.50	0.23	0.15	1.26
	(0.26)	(0.76)	(0.26)	(0.26)	(1.10)
$degree^2$		-0.11			-0.30
		(0.23)			(0.34)
tie strength	0.72**	0.72**	-0.13	0.72**	-1.15
	(0.34)	(0.35)	(1.10)	(0.35)	(1.40)
tie $strength^2$			0.28		0.61
			(0.35)		(0.44)
tie strength diversity	-0.24	-0.22	-0.01	0.67	2.02
	(0.76)	(0.77)	(0.79)	(2.29)	(2.43)
tie $strength\ diversity^2$				-0.92	-1.81
				(2.20)	(2.27)
More than four "A" publications	2.52***	2.51***	2.59***	2.53***	2.68***
	(0.50)	(0.50)	(0.51)	(0.50)	(0.53)
More than two other publications	0.55	0.52	0.59	0.56	0.57
	(0.37)	(0.37)	(0.37)	(0.37)	(0.38)
First school = research school	-0.06	-0.07	-0.11	-0.01	-0.07
	(0.84)	(0.85)	(0.84)	(0.86)	(0.85)
Current school = research school	-0.32	-0.32	-0.24	-0.37	-0.26
	(0.77)	(0.78)	(0.77)	(0.79)	(0.78)
Change of institutions	1.22***	1.23***	1.22***	1.21***	1.23***
	(0.39)	(0.39)	(0.39)	(0.39)	(0.39)
Female	-0.24	-0.25	-0.27	-0.25	-0.37
	(0.34)	(0.34)	(0.35)	(0.35)	(0.36)
Black	0.43	0.38	0.36	0.43	0.16
	(0.76)	(0.76)	(0.76)	(0.77)	(0.79)
Intercept	-5.48	-5.60	-5.20	-5.59	-5.35
	(1.12)	(1.16)	(1.13)	(1.18)	(1.17)
Time fixed effects	yes	yes	yes	yes	yes
N	548	548	548	548	548
Model p-value	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
McFadden's R^2	0.28	0.28	0.28	0.28	0.29

NOTE.—*** p<0.01, ** p<0.05, * p<0.1 for two-sided tests. Robust standard errors in parentheses.

Table 27

ROBUSTNESS ANALYSES: RANK MOBILITY IN THE NEWCOMB FRATERNITY

	$\Delta hsa_{i,t}$	$\Delta hsa_{i,t}$	$\Delta lsa_{i,t} \mid i \in L$	$\Delta lsa_{i,t}(n=3)$	$\Delta lsa_{i,t}(n=5)$	Δprop. $lsa_{i,t}$	$\Delta lsa_{i,t}$
$hsa_{i,t-1}$	-0.269***	-0.037	0.286**	0.290***	0.407***	0.037*	0.195***
	(0.039)	(0.132)	(0.100)	(0.086)	(0.111)	(0.018)	(0.065)
$hsa^2_{i,t-1}$		-0.014*	-0.017**	-0.016***	-0.023***	-0.002**	-0.016***
		(0.007)	(0.006)	(0.005)	(0.007)	(0.001)	(0.004)
$lsa_{i,t-1}$	-0.154***	-0.201***	-0.456***	-0.515***	-0.526***	-0.054***	-0.673***
	(0.058)	(0.063)	(0.041)	(0.053)	(0.041)	(0.008)	(0.092)
$fragility^{c=0.99}_{i,t-1}$							-0.487***
							(0.165)
$sycophancy_{i,t-1}$							-0.003**
							(0.001)
N	238	238	182	238	238	238	238
Within R^2	0.248	0.259	0.364	0.401	0.401	0.230	0.399

NOTE.—Results are from fixed-effects regressions. *** p<0.01, ** p<0.05, * p<0.1 for two-sided tests. Robust standard errors in parentheses.

Bibliography

Abbott, Andrew. 1981. "Status and Status Strain in the Professions." *American Journal of Sociology* 86:819–835.

Ai, Chunrong and Edward C. Norton. 2003. "Interaction Terms in Logit and Probit Models." *Economics Letters* 80:123–129.

Albert, Stuart and David A. Whetten. 1985. "Organizational Identity." *Research in Organizational Behavior* 7:263–295.

Alchian, Armen A. and Harold Demsetz. 1972. "Production, Information Costs, and Economic Organization." *American Economic Review* 62:777–795.

Ashenfelter, Orley. 2008. "Predicting the Quality and Prices of Bordeaux Wine." *Economic Journal* 118:174–184.

Ashenfelter, Orley, David Ashmore, and Robert Lalonde. 2009. "Bordeaux Wine, Vintage Quality, and the Weather." In *Collectible Investments for the High Net Worth Investor*, edited by S. Satchell, pp. 233–244. Burlington, MA.: Academic Press.

Azoulay, Pierre, Toby Stuart, and Yanbo Wang. 2011. "Matthew: Effect or Fable?" *Working Paper.* Massachusetts Institute of Technology.

Bagwell, Laurie S. and B. Douglas Bernheim. 1996. "Veblen Effects in a Theory of Conspicuous Consumption." *American Economic Review* 86:349–373.

Baumeister, Roy F. and Mark R. Leary. 1995. "The Need to Belong: Desire for Interpersonal Attachments as a Fundamental Human Motivation." *Psychological Bulletin* 117:497–529.

Becker, Howard S. 1997. *Outsiders: Studies in the Sociology of Deviance*. New York, NY: Free Press.

Benjamin, Beth A. and Joel M. Podolny. 1999. "Status, Quality, and Social Order in the California Wine Industry." *Administrative Science Quarterly* 44:563–589.

Berger, Jonah and Chip Heath. 2008. "Who Drives Divergence? Identity Signaling, Outgroup Dissimilarity, and the Abandonment of Cultural Tastes." *Journal of Personality and Social Psychology* 95:593–607.

Berger, Joseph, Cecilia L. Ridgeway, M. Hamit Fisek, and Robert Z. Norman. 1998. "The Legitimation and Delegitimation of Power and Prestige Orders." *American Sociological Review* 63:379–405.

Berger, Joseph, Susan J. Rosenholtz, and Morris Zelditch Jr. 1980. "Status Organizing Processes." *Annual Review of Sociology* 6:479–508.

Berger, Peter L. and Thomas Luckmann. 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Garden City, NY: Doubleday.

Beverland, Michael B. 2005. "Crafting Brand Authenticity: The Case of Luxury Wines." *Journal of Management Studies* 42:1003–1029.

Bielby, William T. and Denise D. Bielby. 1999. "Organizational Mediation of Project-Based Labor Markets: Talent Agencies and the Careers of Screenwriters." *American Sociological Review* 64:64–85.

Bishop Smith, Edward. 2011. "Identities as Lenses: How Organizational Identity Affects Audiences' Evaluation of Organizational Performance." *Administrative Science Quarterly* 56:61–94.

Blau, Peter M. 1964. *Exchange and Power in Social Life*. New York, NY: Wiley.

Blau, Peter M. 1977. *Inequality and Heterogeneity: A Primitive Theory of Social Structure*. New York, NY: Free Press.

Bonacich, Phillip. 1987. "Power and Centrality: A Family of Measures." *American Journal of Sociology* 92:1170–1182.

Bothner, Matthew S., Edward. Bishop Smith, and Harrison C. White. 2010a. "A Model of Robust Positions in Social Structure." *American Journal of Sociology* 116:943–992.

Bothner, Matthew S., Frederic C. Godart, and Wonjae Lee. 2010b. "What is Social Status? Comparisons and Contrasts with Cognate Concepts." *Working Paper.* European School of Management and Technology.

Bothner, Matthew S., Richard Haynes, Wonjae Lee, and Edward Bishop Smith. 2010c. "When do Matthew Effects Occur?" *Journal of Mathematical Sociology* 34:80–114.

Bothner, Matthew S., Young-Kyu Kim, and Wonjae Lee. 2011. "Primary Status, Complementary Status, and Organizational Survival in the U.S. Venture Capital Industry." *Social Science Research.* forthcoming.

Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*. Cambridge, MA: Harvard University Press.

Brewer, Marilynn B. 1991. "The social self: On being the same and different at the same time." *Personality and Social Psychology Bulletin* 17:475–482.

Buhrmester, Michael, Tracy Kwang, and Samuel D. Gosling. 2011. "Amazon's Mechanical Turk: A New Source of Inexpensive, Yet High-Quality, Data?" *Perspectives on Psychological Science* 6:3–5.

Burris, Val. 2004. "The Academic Caste System: Prestige Hierarchies in PhD Exchange Networks." *American Sociological Review* 69:239–264.

Castellucci, Fabrizio and Gökhan Ertug. 2010. "What's in it for them? Advantages of Higher-Status Partners in Exchange Relationships." *Academy of Management Journal* 53:149–166.

Chamberlain, Gary. 1980. "Analysis of Covariance with Qualitative Data." *Review of Economic Studies* 47:225–238.

Cialdini, Robert B., Richard J. Borden, Avril Thorne, Marcus R. Walker, Stephen Freeman, and Lloyd R. Sloan. 1976. "Basking in Reflected Glory: Three (Football) Field Studies." *Journal of Personality and Social Psychology* 34:366–375.

Cocks, Charles. 1846. *Bordeaux: Its Wines, and the Claret Country*. London, U.K.: Longman, Brown, Green, and Longmans.

Cocks, Charles and Edouard Feret. 1883. *Bordeaux and Its Wines*. Paris/Bordeaux, France: G. Masson and Feret & Fils, 2nd revised English edition.

Cole, Jonathan R. and Stephen Cole. 1973. *Social Stratification in Science*. Chicago, IL: University of Chicago Press.

Cole, Stephen and Jonathan R. Cole. 1967. "Scientific Output and Recognition: A Study in the Operation of the Reward System in Science." *American Sociological Review* 32:377–390.

Coleman, James S. 1988. "Social Capital in the Creation of Human Capital." *American Journal of Sociology* 94:95–120.

Combris, Pierre, Sébastien Lecocq, and Michael Visser. 1997. "Estimation of a Hedonic Price Equation for Bordeaux Wine: Does Quality Matter?" *Economic Journal* 107:390–402.

Cooley, Charles H. 1902. *Human Nature and the Social Order*. New York, NY: Charles Scribner's Sons.

Corneo, Giacomo and Olivier Jeanne. 1997. "Conspicuous Consumption, Snobbism and Conformism." *Journal of Public Economics* 66:55–71.

Cox, David R. 1972. "Regression Models and Life-Tables." *Journal of the Royal Statistical Society. Series B (Methodological)* 34:187–220.

Czarniawska, Barbara and Rolf Wolff. 1998. "Constructing New Identities in Established Organization Fields: Young Universities in Old Europe." *International Studies of Management & Organization* 28:32–56.

Deephouse, David L. 1999. "To be different, or to be the same? It's a question (and theory) of strategic balance." *Strategic Management Journal* 20:147–166.

Di Vittorio, Albert and Victor A. Ginsburgh. 1996. "Pricing Red Wines of Médoc Vintages from 1949 to 1989 at Christie's Auctions." *Journal de la Société Statistique de Paris* 137:19–49.

DiMaggio, Paul J. and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48:147–160.

Efron, Bradley. 1977. "The Efficiency of Cox's Likelihood Function for Censored Data." *Journal of the American Statistical Association* 72:557–565.

Ellemers, Naomi, Henk Wilke, and Ad van Knippenberg. 1993. "Effects of the Legitimacy of Low Group or Individual Status on Individual and Collective Status-Enhancement Strategies." *Journal of Personality and Social Psychology* 64:766–778.

Fang, Christina Lee, Jeho and Melissa A. Schilling. 2010. "Balancing Exploration and Exploitation through Structural Design: The Isolation of Subgroups and Organizational Learning." *Organization Science* 21:625–642.

Festinger, Leon, Stanley Schachter, and Kurt W. Back. 1963. *Social Pressures in Informal Groups: A Study of Human Factors in Housing*. Palo Alto, CA: Stanford University Press.

Fourcade, Marion. 2006. "The Construction of a Global Profession: The Transnationalization of Economics." *American Journal of Sociology* 112:145–194.

Ginsburgh, Victor A., Muriel Monzak, and Andras Monzak. 1992. "Red Wines of Médoc: What is Wine Tasting Worth?" *Working Paper.* Université Libre des Bruxelles.

Gioia, Dennis A., Kristin N. Price, Aimee L. Hamilton, and James B. Thomas. 2010. "Forging an identity: An insider-outsider study of processes involved in the formation of organizational identity." *Administrative Science Quarterly* 55:1–46.

Goffman, Erving. 1959. *The Presentation of Self in Everyday Life*. New York, NY: Anchor Books.

Goffman, Erving. 1986. *Stigma: Notes on the Management of Spoiled Identity*. New York, NY: Simon & Schuster.

Goode, William J. 1957. "Community within a Community: The Professions." *American Sociological Review* 22:194–200.

Gould, Roger V. 2002. "The Origins of Status Hierarchies: A Formal Theory and Empirical Test." *American Journal of Sociology* 107:1143–1178.

Graffin, Scott D., James B. Wade, Joseph F. Porac, and Robert C. McNamee. 2008. "The Impact of CEO Status Diffusion on the Economic Outcomes of other Senior Managers." *Organization Science* 19:457–474.

Hadj Ali, Héla and Céline Nauges. 2007. "The Pricing of Experience Goods: The Example of En Primeur Wine." *American Journal of Agricultural Economics* 89:91–103.

Han, Shin-Kap. 2003. "Tribal Regimes in Academia: A Comparative Analysis of Market Structure across Disciplines." *Social Networks* 25:251–280.

Hastie, Trevor J. and Robert J. Tibshirani. 1990. *Generalized Additive Models*. Boca Raton, FL: Chapman & Hall/CRC Press.

Hausman, Jerry A. and Gregory K. Leonard. 1997. "Superstars in the National Basketball Association: Economic Value and Policy." *Journal of Labor Economics* 15:586–624.

Herfindahl, Orris C. 1950. *Concentration in the Steel Industry*. Ph.D. thesis, Columbia University.

Hirsch, Fred. 1977. *Social Limits to Growth*. London, U.K.: Routledge & Kegan Paul.

Hochberg, Yael V., Alexander Ljungqvist, and Yang Lu. 2007. "Whom You Know Matters: Venture Capital Networks and Investment Performance." *Journal of Finance* 62:251–301.

Hollander, Edwin P. 1958. "Conformity, Status, and Idiosyncrasy Credit." *Psychological Review* 65:117–127.

Homans, George C. 1974. *Social Behavior: Its Elementary Forms*. New York, NY: Harcourt Brace Jovanovich.

Hsu, David H. 2004. "What do entrepreneurs pay for venture capital affiliation?" *Journal of Finance* 59:1805–1844.

Hsu, Greta. 2006. "Jacks of All Trades and Masters of None: Audiences' Reactions to Spanning Genres in Feature Film Production." *Administrative Science Quarterly* 51:420–450.

Hsu, Greta, Michael T. Hannan, and Özgecan Koçak. 2009. "Multiple Category Memberships in Markets: An Integrative Theory and Two Empirical Tests." *American Sociological Review* 74:150–169.

Iacus, Stefano M., Gary King, and Giuseppe Porro. 2009. "Causal Inference Without Balance Checking: Coarsened Exact Matching." *Working Paper*. Harvard University.

Imhoff, Roland and Hans-Peter Erb. 2009. "What Motivates Nonconformity? Uniqueness Seeking Blocks Majority Influence." *Personality and Social Psychology Bulletin* 35:309–320.

Jenkins, Richard. 1996. *Social Identity*. London, U.K.: Routledge.

Jensen, Michael. 2006. "Should we Stay or Should we Go? Accountability, Status Anxiety, and Client Defections." *Administrative Science Quarterly* pp. 97–128.

Jensen, Michael, Bo Kyung Kim, and Heeyon Kim. 2011. "The Importance of Status in Markets: A Market Identity Perspective." In *Status in Management and Organizations*, edited by Jone L. Pearce, pp. 87–117. Cambridge, MA: Cambridge University Press.

Jensen, Michael and Aradhana Roy. 2008. "Staging Exchange Partner Choices: When do Status and Reputation Matter?" *Academy of Management Journal* 51:495–516.

Jones, Benjamin F., Stefan Wuchty, and Brian Uzzi. 2008. "Multi-University Research Teams: Shifting Impact, Geography, and Stratification in Science." *Science* 322:1259–1262.

Jones, Gregory V. and Karl-Heinz Storchmann. 2001. "Wine Market Prices and Investment under Uncertainty: An Econometric Model for Bordeaux Crus Classés." *Agricultural Economics* 26:115–133.

Khaire, Mukti. 2010. "Young and No Money? Never Mind: The Material Impact of Social Resources on New Venture Growth." *Organization Science* 21:168–185.

Landon, Stuart and Constance E. Smith. 1997. "The Use of Quality and Reputation Indicators by Consumers: The Case of Bordeaux Wine." *Journal of Consumer Policy* 20:289–323.

Landon, Stuart and Constance E. Smith. 1998. "Quality Expectations, Reputation, and Price." *Southern Economic Journal* 64:628–647.

Lazer, David and Allan Friedman. 2007. "The Network Structure of Exploration and Exploitation." *Administrative Science Quarterly* 52:667–694.

Leibenstein, Harvey. 1950. "Bandwagon, Snob, and Veblen Effects in the Theory of Consumers' Demand." *Quarterly Journal of Economics* 64:183–207.

Lichine, Alexis. 1967. *Alexis Lichine's Encyclopedia of Wines and Spirits*. London, U.K.: Cassell & Company.

Long, J. Scott, Paul D. Allison, and Robert McGinnis. 1993. "Rank Advancement in Academic Careers: Sex Differences and the Effects of Productivity." *American Sociological Review* 58:703–722.

Lynn, Michael and Judy Harris. 1997. "The Desire for Unique Consumer Products: A New Individual Differences Scale." *Psychology and Marketing* 14:601–616.

Lynn, Michael and C. Richard Snyder. 2002. "Uniqueness Seeking." In *Handbook of Positive Psychology*, edited by C.R. Snyder and S.J. Lopez, pp. 395–410. New York, NY.: Oxford University Press.

Malter, Daniel. 2011. "High-Status Affiliations, Identity Creation, and Rank Mobility." *Working Paper.* University of Maryland, available from SSRN: http://papers.ssrn.com/abstract=1926379.

Markham jr., Dewey. 1998. *1855: A History of the Bordeaux Classification*. New York, NY: Wiley.

Markus, Hazel and Ziva Kunda. 1986. "Stability and Malleability of the Self-Concept." *Journal of Personality and Social Psychology* 51:858–866.

Maslach, Christina. 1974. "Social and Personal Bases of Individuation." *Journal of Personality and Social Psychology* 29:411–425.

Merton, Robert K. 1968. "The Matthew Effect in Science." *Science* 159:56–63.

Merton, Robert K. 1979. *The Sociology of Science: Theoretical and Empirical Investigations*. University of Chicago Press.

Merton, Robert K. 1988. "The Matthew Effect in Science II: Cumulative Advantage and the Symbolism of Intellectual Property." *Isis* 79:606–623.

Navis, Chad and Mary Ann Glynn. 2011. "Legitimate distinctiveness and the entrepreneurial identity: Influence on investor judgments of new venture plausibility." *Academy of Management Review* 36:479–499.

Newcomb, Theodore M. 1961. *The Acquaintance Process*. New York, NY: Holt, Rinehart & Winston.

Neyman, Jerzy and Elizabeth L. Scott. 1948. "Consistent Estimates Based on Partially Consistent Observations." *Econometrica* 16:1–32.

Nordlie, Peter G. 1958. *A Longitudinal Study of Interpersonal Attraction in a Natural Group Setting*. Ph.D. thesis, University of Michigan.

Paolacci, Gabriele, Jesse Chandler, and Panagiotis G. Ipeirotis. 2010. "Running Experiments on Amazon Mechanical Turk." *Judgment and Decision Making* 5:411–419.

Podolny, Joel M. 1993. "A Status-Based Model of Market Competition." *American Journal of Sociology* 98:829–872.

Podolny, Joel M. 1994. "Market Uncertainty and the Social Character of Economic Exchange." *Administrative Science Quarterly* 39:458–483.

Podolny, Joel M. 2001. "Networks as the Pipes and Prisms of the Market." *American Journal of Sociology* 107:33–60.

Podolny, Joel M. 2005. *Status Signals*. Princeton, NJ: Princeton University Press.

Podolny, Joel M. and Damon J. Phillips. 1996. "The Dynamics of Organizational Status." *Industrial and Corporate Change* 5:453–471.

Podolny, Joel M. and Toby E. Stuart. 1995. "A Role-Based Ecology of Technological Change." *American Journal of Sociology* 100:1224–1260.

Podolny, Joel M., Toby E. Stuart, and Michael T. Hannan. 1996. "Networks, Knowledge, and Niches: Competition in the Worldwide Semiconductor Industry, 1984-1991." *American Journal of Sociology* 102:659–689.

Pontikes, Elizabeth G. 2011. "Two Sides of the Same Coin: How Category Ambiguity Affects Multiple Audience Evaluations." *Working Paper.* University of Chicago.

Pontikes, Elizabeth G., Giacomo Negro, and Hayagreeva Rao. 2010. "Stained Red: A Study of Stigma by Association to Blacklisted Artists during the "Red Scare" in Hollywood, 1945 to 1960." *American Sociological Review* 75:456–478.

Rae, John. 1834. *New Principles of Political Economy*. Boston, MA: Hilliard, Gray, and Co.

Rao, Hayagreeva. 1994. "The Social Construction of Reputation: Certification Contests, Legitimation, and the Survival of Organizations in the American Automobile Industry: 1895-1912." *Strategic Management Journal* 15:29–44.

Ridgeway, Cecilia L. 1991. "The Social Construction of Status Value: Gender and Other Nominal Characteristics." *Social Forces* 70:367–386.

Ridgeway, Cecilia L. and Kristan G. Erickson. 2000. "Creating and Spreading Status Beliefs." *American Journal of Sociology* 106:579–615.

Roberts, Peter W. and Grahame R. Dowling. 2002. "Corporate Reputation and Sustained Superior Financial Performance." *Strategic Management Journal* 23:1077–1093.

Roberts, Peter W., Mukti Khaire, and Christopher I. Rider. 2011. "Isolating the Symbolic Implications of Employee Mobility: Price Increases after Hiring Winemakers from Prominent Wineries." *American Economic Review* 101:147–151.

Roberts, Peter W. and Mukti V. Khaire. 2009. "Getting Known by the Company you Keep: Publicizing the Qualifications and Former Associations of Skilled Employees." *Industrial and Corporate Change* 18:77–106.

Rosen, Sherwin. 1981. "The Economics of Superstars." *American Economic Review* 71:845–858.

Rosenthal, Robert and Ralph L. Rosnow. 1985. *Contrast Analysis: Focused Comparisons in the Analysis of Variance*. Cambridge, MA: Cambridge University Press.

Rossman, Gabriel, Nicole Esparza, and Phillip Bonacich. 2010. "I'd like to Thank the Academy, Team Spillovers, and Network Centrality." *American Sociological Review* 75:31–51.

Schofer, Evan. 2003. "The Global Institutionalization of Geological Science, 1800 to 1990." *American Sociological Review* 68:730–759.

Shapiro, Carl. 1982. "Consumer Information, Product Quality, and Seller Reputation." *The Bell Journal of Economics* 13:20–35.

Shapiro, Carl. 1983. "Premiums for High Quality Products as Returns to Reputation." *Quarterly Journal of Economics* 98:659–679.

Sigall, Harold and David Landy. 1973. "Radiating Beauty: Effects of Having a Physically Attractive Partner on Person Perception." *Journal of Personality and Social Psychology* 28:218–224.

Simcoe, Timothy S. and David M. Waguespack. 2011. "Status, Quality, and Attention: What's in a (Missing) Name?" *Management Science* 57:274–290.

Simmel, Georg. 1957. "Fashion." *American Journal of Sociology* 62:541–558.

Simonin, Bernard L. and Julie A. Ruth. 1998. "Is a Company Known by the Company it Keeps? Assessing the Spillover Effects of Brand Alliances on Consumer Brand Attitudes." *Journal of Marketing Research* 35:30–42.

Snyder, C. Richard and Howard L. Fromkin. 1980. *Uniqueness: The Human Pursuit of Difference*. Plenum Press.

Spence, Michael. 1973. "Job Market Signaling." *Quarterly Journal of Economics* 87:355–374.

Storchmann, Karl. 2005. "English Weather and Rhine Wine Quality: An Ordered Probit Model." *Journal of Wine Research* 16:105–119.

Stuart, Toby E. 2000. "Interorganizational Alliances and the Performance of Firms: A Study of Growth and Innovation Rates in a High-Technology Industry." *Strategic Management Journal* 21:791–811.

Stuart, Toby E., Ha Hoang, and Ralph C. Hybels. 1999. "Interorganizational Endorsements and the Performance of Entrepreneurial Ventures." *Administrative Science Quarterly* 44:315–349.

Suchman, Mark C. 1995. "Managing Legitimacy: Strategic and Institutional Approaches." *Academy of Management Review* pp. 571–610.

Uzzi, Brian. 1996. "The Sources and Consequences of Embeddedness for the Economic Performance of Organizations: The Network Effect." *American Sociological Review* 61:674–698.

Veblen, Thorstein. 1899. *The Theory of the Leisure Class*. London, U.K.: Unwin Books.

Washington, Marvin and Edward J. Zajac. 2005. "Status Evolution and Competition: Theory and Evidence." *Academy of Management Journal* 48:282–296.

White, Harrison C. 1992. *Identity and Control: A Structural Theory of Social Action*. Princeton, NJ: Princeton University Press.

Whyte, William F. 1981. *Street Corner Society: The Social Structure of an Italian Slum*. Chicago, IL: University of Chicago Press.

Wood, Simon N. 2006. *Generalized Additive Models: An Introduction with R*. Boca Raton, FL: Chapman & Hall/CRC Press.

Wuchty, Stefan, Benjamin F. Jones, and Brian Uzzi. 2007. "The Increasing Dominance of Teams in Production of Knowledge." *Science* 316:1036–1039.

Zuckerman, Ezra W. 1999. "The Categorical Imperative: Securities Analysts and the Illegitimacy Discount." *American Journal of Sociology* 104:1398–1438.

Zuckerman, Ezra W. and Tai-Young Kim. 2003. "The Critical Trade-Off: Identity Assignment and Box-Office Success in the Feature Film Industry." *Industrial and Corporate Change* 12:27–67.

Zuckerman, Harriet. 1965. *Nobel Laureates: Sociological Studies of Scientific Collaboration*. Ph.D. thesis, Columbia University.