

Locating Critical Influence beyond the Margins of Status Hierarchies

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Status hierarchies facilitate orderly pricing by providing observable network-based indicators of underlying product quality. They also parse markets into producers that are and are not worthy of full consideration as quality-oriented players. Critics and other market mediators address the problem of unobservable quality with their published quality judgments. They also indicate which producers warrant consideration by providing relevant producers with more regular coverage over time. These apparent redundancies in the market roles played by status hierarchies and critics are the focus of this paper. We analyze the emergence of wine critics in the market for Bordeaux wines, which was previously mediated by an entrenched status hierarchy – the 1855 Classification. Our analysis shows that wine prices over the 1985 to 2001 period were increasingly influenced by the critics' published quality ratings and coverage patterns. However, this development did not lead to the demise of the status hierarchy as it did in White and White's (1993) analysis of 18th and 19th century French art markets. Rather, the critics' influence was most pronounced beyond the margins of the status hierarchy. This expanded the market's ability to process quality information while providing a discipline that strengthened the effectiveness of status as the central mediating structure. This latter effect caused the effect of status on pricing to become stronger and not weaker over time.

There are numerous documented links between various elements of a market's social structure and outcomes like price-cost margins, innovation rates and returns to investment in quality. Initial sociological research focused on the importance of structural elements in constraining the behavior of parties involved in an exchange. The presence of strong third party ties around an exchange makes uncooperative behavior more costly and thus curtails opportunistic behavior (Baker 1984). The absence of such connections encourages price-making behavior (Burt 1980; Marsden 1983). More recent theoretical frameworks cast market structure as a lens through which consumers observe and interpret the goods and services that producers provide. An increasing array of producers and products in a market confronts consumers with two information problems: that of determining which of the myriad of offerings to consider and that of ascertaining the quality of those offerings that are actively considered.

Two distinct features of markets are thought to provide guidance in these regards. One is producer status (Podolny 2005). High status organizations are involved in exchanges with other organizations that are themselves more frequently sought out as exchange partners. When faced with evaluative uncertainty, individuals weigh the opinions expressed by these others. Being involved in more exchanges with the right alters thus becomes a signal for quality that reduces alter-centric uncertainty. As a result, high status firms are able to charge premiums on the goods and services that they provide (Benjamin and Podolny 1999). A parallel line of research highlights the importance of the decisions made by the critics and analysts that mediate between producers and consumers. With their published reports of product quality, these critics provide indicators of otherwise unobservable product quality (Caves and Greene 1996). At the same time, critics parse the full range of offerings into manageable categories and with their coverage decisions, identify the relevant producers within each category (Shrum 1991; 1999; Zuckerman 2004). If a producer fails to attract sufficient attention from the critics responsible for its targeted product category, its offerings are deemed illegitimate and pricing is impacted accordingly.

Status hierarchies and critics seem to perform similar roles as both bound and then order the products and producers that consumers consider when making purchase decisions. That said, how these two mechanisms relate to one another is unclear because they tend to be studied as separate features of

different market contexts. We therefore know very little about whether and how these two structural features that perform similar market roles might operate in tandem. Considering them in the same analysis allows for a more refined understanding of the contributions and limitations of each mechanism. It also permits a deeper understanding of how they interact in the same market setting.

One study that jointly considered status and critics is White and White's (1993) analysis of 18th and 19th century art markets in France. They concluded that status-based and critics-based mediation are in fact substitutes and that the key contingency that determines which mechanism prevails is the size of the market. Initially, a smaller art world was effectively mediated by an entrenched status hierarchy but mounting large-numbers pressures led to that hierarchy being supplanted by a more fluid critics-based system of mediation. Because the critics-based solution was better suited to markets characterized by large numbers of producers, it came to supplant the entrenched status-based hierarchy. This conclusion seems at odds with more recent theorizing about the interplay between producer status and other quality indicators. Because status increases the confidence that audiences have in the other quality signals present in the market (Merton 1968), the returns to these signals are greater for higher status producers. This suggests complementarities between quality information supplied by critics and entrenched status hierarchies (Benjamin and Podolny 1999). White and White's (1993) conclusion is also paradoxical when considered in the context of empirical observations of the persistence of status hierarchies (Gould 2001, pp. 1145-1146). If critics and status-based systems are substitutes and if the critics-based approach is better suited for markets with large numbers of producers, why do we still observe status hierarchies in markets for investment analysis and legal education (Phillips and Zuckerman 2001)?

To shed some light on this apparent paradox, we reconsider the interplay between these two market mechanisms in an analysis of the emergence of influential wine critics in the market for Bordeaux wines. For more than one hundred years, the market for Bordeaux wines had been structured by an influential and entrenched status hierarchy – the 1855 Classification (see Table 1). Wine critics (especially the *Wine Spectator* and Robert Parker's *Wine Advocate*) emerged as challengers to this classification system in the early 1980's. By publishing increasingly credible information about wine

quality, these critics moved the basis of wine pricing in Bordeaux away from producer status alone and towards product-level quality ratings.¹ These critics also offered a non-status basis for being considered as a quality-oriented producer – the extent to which one is consistently reviewed by these critics. Instead of being determined solely by its inclusion and rank in the 1855 Classification, a producer’s relevance could be influenced by the quality and history of its critical coverage.

Table 1 about here

Consistent with White and White’s (1993) account of art markets, historical analyses of Bordeaux reveal that by the early 1980s, increasing numbers of wine producers seeking consideration combined with an expanding cadre of consumers interested in wine quality threatened the incumbent status hierarchy (Brook 2001; Echikson 2004; Faith 1999; Markham 1998; Peppercorn 2003). They also suggest growing concerns about the reliability of the classified producers’ product-level quality demonstrations. Our empirical analysis of posted prices reveals that critics relieved both of these concerns by providing two forms of guidance in the form of differential coverage patterns and product-specific wine quality evaluations. And yet, our analysis also shows that these contributions did not lead to the demise of the 1855 Classification. In fact, by the end of a fifteen-year period, the quality ratings published by the critics had little direct impact on prices charged by the classified producers. Rather than supplanting the incumbent status hierarchy, critics provided guidance in those places that were beyond its reach. We also find that critics performed an additional indirect function inside the incumbent status hierarchy. In the period under study, increasing critical coverage for classified producers corresponded with less variable quality demonstrations within each status rank. This made the requisite assumptions about a relationship between status and quality (Podolny 1993) plausible and defensible. In other words, the critics forced the classified producers to quite literally live up to the expectations that were implied by their places in the 1855 Classification. Therefore, rather than being swept aside with the arrival of the critics, the incumbent

¹ Landon and Smith (1997) demonstrated a positive relationship between the quality scores reported in the *Wine Spectator* and posted wine prices while Jones and Storchmann (2001) produced a similar result in a study based on quality ratings from Robert Parker’s *Wine Advocate*.

status hierarchy and the wine critics performed complementary roles.

The balance of our paper is organized as follows. In the next section, we summarize prevailing theory and evidence regarding the market roles played by status hierarchies and critics. This allows for a statement of several hypotheses about the links between status rankings and critical coverage and ratings on prices. The ensuing section summarizes White and White's (1993) analysis of 18th and 19th century art markets in France, which leads to a straightforward hypothesis that in the face of mounting large numbers pressures, a critics-based system of mediation will eventually supplant an incumbent status hierarchy. We then revisit Merton (1968) to develop a set of hypotheses that suggest a more nuanced interplay between status hierarchies and critics. We test our hypotheses in a large sample of wine reviews published in the *Wine Spectator* over the 1986 to 2001 period. This analysis confirms the expected effects of status and critics on prices before offering support for our more nuanced account of their interplay. The paper concludes by discussing implications for sociological accounts of systems of mediation within markets.

Evaluation and Identification in Quality-Based Markets

Sociological treatments of markets focus on how behaviors and outcomes become structured and therefore predictable. One of the issues attracting increasing attention is pricing (Baker 1984; MacKenzie and Millo 2003; Uzzi and Lancaster 2004a; Zuckerman 2004). Although it is tempting to assume that prices are set at the intersection of supply and demand, economic sociologists recognize that the *Walrasian auctioneer* that adjudicates these forces is rarely evident (Burt 2005; Podolny 2005; White 1981). As such, a central task is that of better understanding the processes that generate the prices posted in markets, as well as the market features that enable orderly price-setting behavior.

Robust associations between posted prices and product quality become problematic in the face of two information problems: hidden quality information and large numbers of producers and products. Nelson's (1970) discussion of experience goods reminds us that direct information about product quality is often unavailable at the time individuals make their purchasing decisions. The problem of too many products and producers means that even when product quality information is available, individuals in

over-populated markets are unable to process all of it effectively. Large numbers tax the limited information processing capacity of markets and their participants (Arrow 1974; Simon 1997). Pricing becomes orderly when a market's structure jointly addresses these two problems.

In this regard, those who study producer status have focused on the signal value of market relationships (Podolny 2005). In Podolny's (1993) analysis of status in the investment banking industry, status hierarchies solve the hidden information problem by offering indirect but visible network-based indicators of otherwise unobservable product quality. Banks more heavily involved in network relationships are assumed to provide goods or services of higher quality. At the same time, the exclusivity and rigidity of established status hierarchies (Podolny and Phillips 1996) address large numbers problems by identifying a manageable subset of producers that warrant consideration as quality producers. Moving into and then up a status hierarchy, producers become more relevant because they are assumed to produce at higher quality. Although excluded (i.e., non-status) producers are allowed to participate in the market, they are not allowed to set prices as if their quality matters. Consistent with this theory, Benjamin and Podolny (1999) demonstrated that in the market for U.S. wines, posted prices are higher for products offered by higher status producers. A related result was obtained in markets for IPO's (Stuart, Hoang and Hybels 1999). These analyses show that market actors forego the pricing of unobservable product quality in favor of pricing the more visible status information. Consistent with prevailing theory and evidence, we test the following status-based prediction:

H-S1: Higher status producers command higher prices for their products.

The identifying role of status becomes evident when some information about product quality permeates the market. Here, a producer's status influences the extent to which that information is factored into prices. Because of heightened expectations, quality information from higher status producers is thought to be more credible (Merton 1968). Consistent with this, the returns to these quality signals are greater for higher status producers (Benjamin and Podolny 1999). We therefore predict that:

H-S2: The association between price and product quality indicators is higher for higher status producers.

Another way that hidden information and large numbers problems are addressed is through the actions of market mediators such as critics and analysts. *Consumer Reports* regularly publishes product evaluations across a range of categories (Caves and Greene 1996). Investment analysts provide reports about the underlying quality of company stocks (Zuckerman 1999; 2000). Film critics publish opinions about the quality of movies that are released to the public (Ravid 1999; Zuckerman and Kim 2003). In their published reviews and ratings, critics and analysts address the hidden information problem by disseminating expert opinions about product quality. Assuming their opinions are deemed credible, consumers substitute published quality ratings for unobservable product quality. This leads to a straightforward prediction about the relationship between critics' quality ratings and posted product prices:

H-C1: Products with higher quality ratings from critics command higher prices.

While a published quality rating addresses the problem of hidden quality information, it does not resolve the problem of identification. Hirsch (1972, pg. 652, emphasis added) once stressed that “the number of books, records, and low-budget films released annually *far exceeds coverage capacity* and consumer demand for these products (see also Kamakura et al. (2006)).” Even when quality information can be made available to market participants, it cannot all be processed effectively. Large numbers market scenarios become more orderly when only certain producers are allowed to price as if their product quality really matters. For this to occur, consumers need guidance as to which producers warrant closer consideration, and producers need to know the extent to which they may set prices as if their quality matters. Here, market participants can follow the critics in order to determine the extent to which each product's quality information should be taken seriously. Zuckerman (1999; 2003) shows how the distribution of legitimacy across firms is influenced by the coverage decisions taken by investment analysts. Those that attract the right kind of critical attention are more likely to make it into investors'

consideration sets. Similarly, Shrum's (1991; 1996) analysis of theater critics at the Edinburgh Festival Fringe shows that irrespective of the quality of the reviews, simply being reviewed by a critic increases the probability that an act will be noticed by potential audience members. This identification function is clearly identified in the context of food writing: "A major role of gourmet food writing is to spot culinary trends and to *identify* particular dishes and foods as being *worthy* food choices. This *selection function* of food writing defines a repertoire of desirable food choices, while *excluding* the majority of available foods." (Johnston and Baumann 2007, pg. 170, emphasis added)

Because of its expected salience, a published review provides a stimulus that raises a producer above the obscurity that comes in large numbers settings. We extend this idea and propose that the historical pattern of critical coverage provides an underlying structure to the market that helps transform large numbers problems into more orderly small numbers scenarios. Just as a critic draws attention to a producer with each published review, her historical pattern of critical coverage serves the broader winnowing function. As critical coverage increases, a producer is ushered toward a more central position in the market. Thus, critics come to identify the more relevant producers by consistently providing them with published reviews over longer periods of time. By signaling relevance, critical coverage has a positive impact on product evaluations:

H-C2: Producers with more historical critical coverage command higher prices for their products.

With their historical coverage decisions, critics identify the more relevant set of producers. Then, with a published report of a product's quality, they provide a visible indicator of otherwise unobservable product quality. These two facts constitute crucial guidance for producers when setting prices because they indicate the extent to which specific information about product quality should be reflected in those prices. A producer who never before received a critical review is essentially anonymous and should price with little reference to its own product quality. Producers with more critical exposure know that their product quality information is more likely to reach the market and be taken seriously. As a result, higher quality producers that receive more coverage are able to charge higher prices for the goods and services

that they provide (Roberts and Reagans 2007). Following this logic, we test a final critics-based prediction:

H-C3: The positive effect of quality ratings on product prices is greater for producers with more historical critical coverage.

Critics in the Context of Status Hierarchies. White and White's (1993) analysis of the market for French paintings in the 18th and 19th centuries documents the rise and ultimate demise of a status hierarchy built around the Academic system which was ultimately replaced by a dealer/critic system of mediation. During its heyday, prospective painters were ushered into and then trained within the Academic system. In due course, these individuals were classified into several "ranks and kinds of members." (pg. 7) Within the top rank, "everyone who was anyone in the way of patronage would be introduced to one's paintings." (pg. 8) This introduction was typically made in the form of paintings being shown in the Salon, which "was intended as the main instrument for review, reward, and control of painters seeking official recognition." (pg. 32) White and White (1993, pg. 12) stress that "the object [of the Academic system] ... has never been to create such an enormous quantity of painters and sculptors, but rather that its instructions serve to form a small number, of distinguished merit." In other words, a key feature of this system was that of singling out a very small band of notable painters who were deemed credible as a result of their standing within the Academic system. These individuals were set apart from an increasingly large band of trained painters who never received any meaningful recognition.

At its peak, this Academic system created a rigid hierarchy that addressed the large numbers problem that might have plagued the quality-based market for French paintings. However, by the mid-19th century, large numbers pressures were mounting. As the number of Academy-trained painters increased, "at least 20,000 reputable canvases must have been produced in each decade after mid-century by professional French painters. This is the single dominant fact in our account, an index of the problems confronting the Academic system." (pg. 83) Along with this growth in the number of painters came a

growth in the level and diversity in demand for quality paintings: “a lower social and economic level became interested in serious art at the same time that the market in private sales to the well-to-do increased.” (pp. 78-79) As such, “a much larger market for paintings was needed and could be mobilized in the 19th century.” (pg. 94) A central flaw of the Academic system related to the fact that it “did not adapt to function effectively at a large size” (pg. 2) – “three thousand painters could not fit into a system appropriate to three hundred.” (pg. 103) As it turned out, the ensuing system of mediation based on the contributions of critics “provided more widely and generously for a larger number of artists.” (pg. 151)

The art critics emerged to provide “visibility” and “publicity” (pg. 150) for the large and evolving group of professional painters. “Whether they praised or castigated, the critics publicized the calendar of events, the dealers, painters and the works of art, informing a large readership of this extra-Academic activity.” (pg. 96) Note how this identifying role differs from that which is typically ascribed to the critics that cover quality-based markets. It is more typical to emphasize how they solve the hidden information problem by providing information (in the form of reviews and ratings) about unobservable product quality. In White and White’s (1993, pg. 121) analysis, however, “both favorable and unfavorable criticism played a part in bringing [painters] to public notice.” While “the laudatory review became a substitute for a Salon medal ... the negative review was no less important in drawing attention to a painter.” (pg. 150)

White and White’s (1993) analysis illustrates how status orderings address the problem of large numbers. By explicitly endorsing the achievements of a select group of painters, the Academy determined who was allowed to participate in the market as quality-oriented producers. As the number of excluded painters expanded, and as the number of customers interested in purchasing quality art grew larger and more diverse, it became “exceedingly difficult to evaluate and process a large number of objects, using a single centralized organization, when the objects are defined as being unique.” (pg. 88) The exclusionary feature of the rigid status-based system created pressures at the margins. In the face of these pressures, art critics emerged to re-establish order within art markets where product quality was clearly important but not observable, and where large numbers of artists struggled to make their quality demonstrations

relevant.

If the two modes of mediating markets perform the same informing and identifying roles, and if the critics-based system is better suited to mediate a large and fluid market, then the rise of the latter system should lead to the demise of status hierarchies. This was a key finding from White and White (1993) and is the basis for one prediction about the interplay between status hierarchies and critics:

H-CSI: As critics become influential, the impact of status on price diminishes and ultimate disappears.

This prediction finds additional support in more recent theorizing about producer status. Podolny (2001) states that the usefulness of status as a signal for otherwise unobservable product quality is linked to the presence of alter-centric uncertainty. When audience members are uncertain about product quality, they look to the network-based indicator as a credible proxy. As alter-centric uncertainty diminishes, the signal value of status also diminishes. Alter-centric uncertainty is clearly reduced when critics emerge to provide increasingly reliable information about product quality. As relevant and more direct information about product quality permeates the market, the need for the more indirect status-based quality indicator diminishes:

As an alternative to this prediction, we develop several hypotheses that recognize potential complementarities between the two systems of mediation. Consider again the problems faced by status hierarchies in the face of mounting large numbers pressures. Status hierarchies solve the large numbers problem by semi-permanently distinguishing the central from the peripheral players in the market. While this allows markets to focus on a manageable subset of producers, it also creates pressures linked to what Merton (1968, pp. 56-57) called the phenomenon of the ‘41st chair’:

The French Academy ... decided that only a cohort of 40 could qualify as members and so emerge as immortals. This limitation of numbers made inevitable, of course, the exclusion through the centuries of many talented individuals. ... What holds for the French Academy holds in varying degree for every other institution designed to identify and reward talent. In all of them ... men [producers] outside the Academy [status hierarchy] having at least the same order of talent as those inside it. ... [The phenomenon of the 41st chair] is an artifact of having a fixed number of places available at the summit of recognition.

Producers that reside beyond the margins of status hierarchies face disadvantages that range from moderate to severe. The penalties increase as the returns to quality in a market increase. When markets change or expand in ways that create greater interest in these excluded producers, entrenched hierarchies offer little in the way of guidance. By singling out only a few producers and by limiting the movement of producers across status rankings, status hierarchies have little scope to accommodate entry into quality games by aspiring producers. If the main challenge facing status hierarchies relates to Merton's 41st chair, then we should expect the effect of critics to be felt more strongly beyond the margins of the existing status hierarchy. As such, we offer the following prediction:

H-CS2a: The impact of the critics' quality scores on price is lower among status producers.

H-CS2b: The impact of historical critical coverage on price is lower among status producers.

Locating the influence of critics beyond the margins of the incumbent status hierarchy suggests that the interplay between the two systems of mediation may be quite modest. However, notwithstanding a tendency for status and critics to specialize in different parts of the market, there may be an important indirect relationship between them when we consider how critics come to establish themselves as credible mediators in the first place. To accrue the legitimacy required to be allowed to judge unobservable product quality, critics must convince audience members that they know how producers and their quality demonstrations are currently construed. They must also show that they can replicate prevailing understandings about the distribution of quality outcomes across producers using their own methodologies. Unless they have some external basis from which to challenge existing structures, this need for legitimacy means that they must initially offer coverage and quality information that conforms to and affirms the incumbent status hierarchy. They must provide *appropriate* coverage to the status producers and reach *appropriate* judgments about their quality demonstrations. By doing this effectively, they are allowed to provide extended coverage and quality information that structures the rest of the market. This additional information about previously uncovered producers has meaning because it is

comparable to information about the producers that market participants already know something about.

The need to provide coverage to both status and non-status producers has implications for the effectiveness of status as an indicator of quality. It has long been accepted that status has its signaling effect because audience members assume that those in high status positions produce at higher quality. This assumption can at times be plausible. Elaborating the Matthew effect, Merton (1968) offered several reasons why higher status scientists tend to produce at higher quality. The principal of cumulative advantage provides these actors with access to more and better physical (e.g., laboratories) and human resources (e.g., graduate students). At the same time, because they attract more attention, high status scientists believe that their work will be scrutinized and therefore work to ensure the quality of their research output. The heightened ability and incentive to produce at higher quality validates audience assumptions about the high status scientists: “the reward system based on recognition for work accomplished tends to induce continued effort, which serves both to validate the judgment that the scientist has unusual capacities and to testify that these capacities have continuing potential.” (Merton 1968, pg. 2) Merton (1968, pg. 7) stressed that when this latter incentive to invest in quality disappears, the Matthew effect becomes dysfunctional: “When the Matthew effect is thus transformed into an idol of authority, it violates the norm of universalism embodied in the institution of science and curbs the advancement of knowledge.” Podolny (2005, pg. 35) echoed this concern in the market context: “If changes in quality had no impact on changes in status, then high status producers would have a strong incentive to free ride on their status – that is, to stop investing in the resources needed to make high-quality goods – since they would possess the signal of quality regardless of their actual investments in quality.”

For status orderings to be perceived as providing valid indication of unobservable quality, ‘the emperor must be allowed to have no clothes.’ The incentive mechanism typically invoked in network conceptions of status relates to the selection logic that guides deference-based associations (Gould 2001). A producer’s need to maintain relations with other high status producers provides an incentive to make requisite quality-enhancing investments (Podolny 1993). However, when status-based homophily

becomes extreme, potential exchange partners substitute status-based deference for any due diligence about underlying quality. Without this due diligence, the incentive for high status producers to shirk on investing in quality increases. More generally, as the rigidity of an established status hierarchy becomes extreme, there is no mechanism to enforce quality and the requisite assumption about the link between status and quality is called into question. Absent the discipline that comes from potential status mobility, critics play a role in maintaining an incumbent status hierarchy by providing another form of discipline. When they are credible, they are able to identify the high-status producers that are not making requisite investments in maintaining or improving quality.

This incentive effect lessens the propensity to shirk on efforts that relate to product quality and leads to more reliable quality demonstrations on the part of status producers. This in turn allows audience members to have faith in the status indicator by validating the requisite assumption about the status-quality link, even without referring to the specific product quality information that the critics provide. In this way, rather than leading to the demise of the incumbent status hierarchy, the emergence of influential critics can actually reinforce it:

H-CS3: By providing discipline to status producers, critics affirm and strengthen the effect of status on product prices.

These latter predictions stand in contrast to those that follow prevailing views about producer status and its interplay with the contributions of critics. Hypothesis H-C2 states that the quality information provided by critics has a greater impact on price for high status producers, while H-CS2a predicts the opposite effect. Hypothesis H-CS1 suggests that the increasing credibility of critics leads to the demise of an incumbent status hierarchy while H-CS3 predicts the opposite effect. After executing an analysis that tests these competing predictions in the context of Bordeaux wine markets, we revisit the broader implications of these tensions, which are rooted in a more specific reading of Merton's (1968) Matthew effect and his phenomenon of the 41st chair.

The Market for Bordeaux Wines

“The [1855] classification is ‘An Instrument of Notoriety’, more specifically, an instrument designed to make known to the public, clearly and without mistake, the distinctions established among a limited and chosen number of high quality products due to their subtle differences.” (Markham 1998, pg. 181)

Since at least the 17th century, quality has been an important consideration for those purchasing wines from Bordeaux (Faith 1999). However, the problem of hidden quality information makes it virtually impossible to know a wine’s quality in advance of purchase. As such, wine consumers in France and the U.K. – with assistance from wine brokers – settled on the historical market performance of the different châteaux as observable indicators of their unobservable wine quality. Producers whose wines had fetched higher prices in the past developed reputations that placed them higher on the market’s pricing ladder (Markham 1998). Or, in the words of Brook (2001, pg. 71), “a proprietor will try to obtain the highest possible price for his or her wine ... What will certainly come under consideration are the prices likely to be charged by neighboring properties of the same quality level.” When a new vintage was ready for sale, wine producers would monitor one another. After one set a price for its wine, others would follow suit based on their position on this ladder; i.e., ‘you have set a price of x francs, but I have done better than you in the past, so I will charge $x+n$ francs’. Through this process of mutual monitoring, the different châteaux came to settle on a schedule of prices that were subsequently ratified by consumers.

There have been as many as 7,000 named châteaux operating in Bordeaux (Feret 1986), a number that is too large to support the mutual monitoring of current and historical market prices. Therefore, the ability to structure the market in this way depended on first transforming the market from a large and amorphous cadre of wine producers into a smaller set of elite producers. Initially, status leaked (Podolny 2005) from the social world into the market domain as the relative social standing of the different châteaux owners determined who got to participate in the quality game (Markham 1998). A specific hierarchy of producers developed and *Margaux*, *Lafite*, *Haut-Brion*, and *Latour* were singled out as named châteaux and earned price premiums as early as 1707 (Faith 1999). Because of the status conferred on this small group of châteaux, everyone in the market was able to know which producers mattered.

These were the elite producers that came to know their pecking order based on observing one another's market performance over subsequent decades.

Thus emerged a status hierarchy based on the historical social standing of the châteaux owners and reinforced by consistent patterns of deference in price-setting. This allowed the market to maintain order in pricing absent direct information about product quality and in the face of a very large number of producers. The status hierarchy was reinforced over time, first by the consistent actions of brokers who were the custodians of each producer's historical market performance. Ultimately, it became ossified in the 1855 Classification, which classified the producers of *Medoc* and *Graves* into six distinct ranks – five classified (i.e., first through fifth growth) and one very large unclassified rank (Markham 1998). Long thereafter, the process for setting prices in Bordeaux remained remarkably unchanged: “even in 1973, in the immortal phrase of Colin Anderson, one of the leading British wine buyers, prices in Bordeaux were still set by five growers lying to each other.” (Faith 1999', pg. 249) Within this established status hierarchy, a small set of classified producers was clearly distinguished from the rest of the pack. Classified producers were allowed to price to their own quality, which was reflected in their classification ranking and widely understood. Unclassified producers sat outside of this pecking order and priced as *vin ordinaire*. Even though they varied in terms of their product quality, those outside of the 1855 Classification had to set prices as if their own individual quality did not matter much.

As was the case in the markets for French paintings, this rigid status hierarchy was challenged in the late 1970s by mounting large numbers pressures. An influx of quality-oriented U.S. consumers into the market for wines in the late 1970s amplified the demands of excluded Bordeaux producers to be considered as quality players. As the level and diversity in demand for quality Bordeaux wines increased, the prices charged by classified producers – the only ones widely recognized as quality producers – skyrocketed (Brook 2001). This created pressure for the identification and provision of quality information about additional Bordeaux producers. However, the extreme exclusivity of the 1855 Classification could not accommodate this pressure at the margins. At the same time, questions began to emerge about the validity of the 1855 Classification. It was being suggested that “mediocre wines sold for

too much, thanks to their classifications and good wines sold for too little for lack of a ranking.”

(Echikson 2004, pg. 88) This concern was linked to the excessive rigidity built into the prevailing status hierarchy: “Virtually every estate in *Medoc* has changed at least once in the hundred and twenty years since 1855. But the classification remains – with only one change².” (Faith 1999, pg. 77) This extreme rigidity severed a link between investments in quality and market outcomes: “it doesn’t make sense. If new owners or a new management team come in, invest a lot of money, and significantly improve the quality of the wine, they ought to be able to get a better price for it.” (Echikson 2004, pg. 282)

Wine critics emerged to address the mounting large numbers and quality information problems by publishing quality ratings. This parallels the emergence of art critics in White and White’s (1993) analysis of art markets. However, the arrival of critics into a status-mediated market need not lead to the demise of an incumbent status hierarchy. In the following analysis, we allow for this latter possibility but remain open to the possibility that the contributions of the critics might actually complement the incumbent status hierarchy.

Data and Analysis

There are essentially two dominant wine critics: the *Wine Spectator* and Robert Parker’s *Wine Advocate*. It has been suggested that “the *Spectator* ... reaches an audience over six times larger than the *Advocate*’s.” (Economist 1999’, pg. 94) Because of the broader readership and because of the availability of published *Wine Spectator* reviews back to the first published review, we focus our analysis on the *Wine Spectator*. Only red wines from the *Medoc* and *Graves* appear in the 1855 Classification. As such, our data are taken from multiple issues of the *Wine Spectator* and cover all red wines produced in the *Medoc* and *Graves* regions of Bordeaux and evaluated between 1985 and 2001. Although we use all of the 4,369 published reviews to construct our critical coverage variable, the analysis focuses on wines produced in or

² See also Echikson (2004), Peppercorn (2003, pg. 46) and Markham (1998, pg. 30).

after the 1982 vintage and sets aside wines that were barrel-tested.³ This yields 2,854 wine reviews. After deleting updating reviews (i.e., subsequent reviews of previously-reviewed wines) and reviews with missing price information, we are left with a sample of 1,877 observations.⁴

We generate a price variable by dividing the list price reported in the *Wine Spectator* by the U.S. consumer price index (normalized to unity in 1984). Because the distribution of real wine prices is highly skewed, we employ the natural log of real price as the dependent variable. Producer status is indicated with a set of five indicator variables – first growth through fifth growth producer – with unclassified producers occupying the omitted category. Quality scores are those reported on a 100-point scale in the *Wine Spectator*. These come from blind tastings by the *Wine Spectator*'s experts; a process that ensures that critics do not know who made the wine or its list price when they determine quality scores. The critical coverage variable is the count of the number of prior reviews published in the *Wine Spectator* for each producer. Because the distribution of this variable is also skewed, we employ the log of this count (plus one).

Because of annual variations in vintage conditions, our models include a variable that indicates the quality of the focal vintage. This information is reported on the *Wine Spectator* website for each year after 1981. We also control for the age of each wine at release because wines that have been aged longer tend to command higher prices. Because a wine's price might also be influenced by its association with other wines, we introduce another control variable that indicates whether the focal wine is a second label of an established producer. Table 2 reports descriptive statistics and pair-wise correlations for the variables of interest. The average of the log of real price variable corresponds to a real price of \$15.33. The average of the quality score variable is 85.26 while the average of the critical coverage variable corresponds to 17.31 prior *Wine Spectator* reviews. It is not surprising to find a strong positive correlation

³ In a barrel tasting, the wines is tasted in the winery's cellar before bottling has taken place.

⁴ The wines in updating reviews tend to be older than the others (9.83 on average compared to 3.43 years) and of higher quality (average score of 89.56 compared to 84.99). The wines with missing pricing information are also older on average (4.64 compared to 3.21 years) but of slightly lower quality (average score of 83.52 compared to 85.25).

between the quality score variable and the overall vintage quality score.

Table 2 about here

We test our predictions in ordinary least squares regression models with log of real price as the dependent variable. In addition to the above controls, the models include a set of indicator variables for each year of the sample period in order to rule out idiosyncratic year effects on pricing. They also include a set of controls for each producer's regional appellation – *Graves*, *Haut-Medoc*, *Margaux*, *Pauillac*, *Pessac-Leognan*, *St. Estephe* and *St. Julien*.

Results

The first column in Table 3 reports a model with the control variables only. As expected, wines from higher-quality vintages and those with more bottle age command significantly higher prices. The second column adds the five status variables and evidences the predicted cascading effects down the 1855 Classification. All five coefficients are positive and significant, and there are significant differences between the first and second growth ($F=385.51$; $p=0.000$), the second and third growth ($F=43.41$; $p=0.000$), and the third and fourth growth effects ($F=8.91$; $p=0.003$). This pattern of effects supports the first status prediction (H-S1): prices for wines tend to be higher for higher-status producers. Model 3 reports the results from a critics-only model. It demonstrates the expected positive effect of the critics' quality scores on prices. Along with this role in providing quality information to the market, increased critical coverage allows producers to set higher prices that more accurately reflect underlying product quality. These are evidenced by the positive main effect of the critical coverage variable and by its positive interaction with the quality score variable. These results support hypotheses H-C1 through H-C3.

Table 3 about here

Model 4 includes the status and critics variables in the same model. Although the magnitudes of the predicted effects are slightly lower in this combined model, all of the aforementioned results replicate

in sign and significance. The fifth column in Table 3 addresses the interplay between the status hierarchy and the critics' variables. We first estimated (unreported) models in which each of the five status ranking variables was interacted individually with the quality score and critical coverage variables. However, F-tests revealed that the quality score interactions were not statistically distinguishable from one another ($F=0.64$; $p=0.633$), while the critical coverage interactions were only marginally different ($F=2.47$; $p=0.042$). This latter difference is fully attributable to a more negative interaction between the first growth and critical coverage variables. We therefore created a single Classified Producer variable that indicates whether the focal producer is included anywhere in the 1855 Classification. Model 5 shows that the coefficient on the interaction between this variable and the quality score variable is negative and significant. Contrary to the expectation from the existing literature on producer status (hypothesis H-S2) but consistent with our second status-critics prediction (hypothesis H-CS2a), prices charged by the classified producers are less sensitive to the quality information published by critics. More specifically, a unit increase in the quality score variable corresponds to a 0.029 increase in the natural log of real price for unclassified producers but a 0.019 increase for the classified producers listed in Table 1. We observe a similar reduction in the effect of critical coverage among the classified producers. This negative interaction effect provides support for H-CS2b. More specifically, the effect of the critical coverage variable on the natural log of real price falls from 0.152 for the unclassified producers to 0.119 for the producers listed in Table 1.

To confirm the robustness of these results, we estimate an additional model that accounts for Robert Parker's influence on wine pricing and for the possibility that producers develop reputations for wine quality as a function of prior quality demonstrations. It is possible that the reduced influence of the *Wine Spectator* among the classified producers is due to a more pronounced impact of Robert Parker's opinions. To assess this possibility and whether it influences the results that we report, we include a set of categorical variables that reflects the opinions of Robert Parker about the different Bordeaux producers. Here, we employ the producer quality ratings from Parker's two Bordeaux volumes published in 1985 and 1991, which range from "outstanding" to "average." We use the 1985 ratings for reviews published in the

1985 to 1990 period and the 1991 ratings thereafter. To isolate the effect of developing reputations for product quality, we also control for the average quality of the prior *Wine Spectator* coverage afforded to each producer. For each producer in each year, we calculate the average of all prior *Wine Spectator* scores. This more complete model is reported in the last column of Table 3. Model 6 shows the expected positive effects of Parker's producer ratings. The top three categories – outstanding, excellent and very good – return significant coefficients. A producer's average prior quality score also exerts a positive impact on price. That said, all of the coefficients of interest are the same sign and significance levels across models 5 and 6. The only noticeable difference is a halving of the effect of critical coverage on price in model 6.

Consistent with the phenomenon of the 41st chair, market participants looked to the critics for guidance in those areas of the market that were unmediated by the status hierarchy. This raises the prospect of virtual independence of the impacts of status and critics, which is inconsistent with the incentive logic that underpins our final hypothesis. However, the correlations reported in Table 2 clearly indicate that critical coverage tends to be higher for ranked producers. The cascading positive correlations between the status ranking variables and the critical coverage variable suggest that the critics were indeed tracking the existing status hierarchy with their coverage patterns. The regressions in the first two columns of Table 4 also show a relationship between quality scores and status rankings both early on (1985 to 1989) and then later (1998 to 2001) in the sample period. In the transition from a status-only market to one that housed increasingly influential critics, the distribution of quality scores clearly tracked the prevailing status hierarchy. Especially in the early period, the coefficients on the five status variables are positive and highly significant. This observation supports the logic underlying our final prediction, which addresses the fate of the incumbent status hierarchy as critics become established.

Table 4 about here

Table 5 divides the overall sample period into three periods and examines how the effects of the status and critics variables on price changed over time (see models 7a through 7c). Between 1985 and

1989, the *Wine Spectator* critics began to exert their influence on pricing. The positive coefficients on the critical coverage and quality score variables are relatively small but significant at the $p < 0.10$ and $p < 0.05$ levels, respectively. However, the coefficients on their interaction and on the average prior quality variable are not significant. At the same time, we observe the expected cascading effect of the status ranking variables. However, these coefficients are not identified with a high level of precision. Only the first growth coefficient is statistically significant at the $p < 0.01$ level; the other four coefficients are only significant at the $p < 0.10$ level. Taken together, model 7a evidences the expected structural effects of status and the critics, but the relatively low levels of statistical significance allude to a market in flux.

Table 5 about here

The influence of the critics firms up in the 1990 to 1997 period. Here, the coefficients on the four critics variables are all positive and significant at the $p < 0.01$ level. The most dramatic examples of greater critical influence are seen in the more pronounced interaction between the critical coverage and quality variables and in the larger impact of average prior quality. According to the prevailing version of the status story (hypothesis H-S2), the impact of additional quality information on price should be greater for producers with status. However, in the middle period we begin to see a negative and marginally significant interaction between the quality score variable and that which identifies the classified producers. It seems that as the critics' quality information was taken more seriously, its impact on the prices charged by classified producers was lower relative to the unclassified producers. The increasing influence of the critics within the market means that more credible product quality information was being made available. This reduces alter-centric uncertainty and according to this same version of the status story should lead to a reduced influence of status on price. However, we see in model 7b that all five of the status ranking variables continue to return positive and significant ($p < 0.01$) coefficient estimates.

These trends continue into the final four years of the sample period. Model 7c returns positive and significant coefficients for all of the critics variables. The coefficients on the quality score and average prior quality variables are notably larger, as is the positive interaction between the quality score

and prior coverage variables. As the impact of the critics became even more pronounced, we also saw a more dramatic increase in the magnitude and significance of the five status ranking variables. Relative to the early 1985 to 1989 period, we consistently observe a more-than-doubling of the estimated classification effects in the presence of more influential critics. This contradicts the prediction implied in White and White's (1993) analysis. The rise and entrenchment of critics within this market did not lead to the demise of the status hierarchy but rather to its reinforcement. This provides evidence in favor of hypothesis H-CS3. At the same time, the interaction between the classified producer and quality score variables is more negative and more significant ($p < 0.01$) in the final period. Contrary to Benjamin and Podolny's (1999) finding, which is based on Podolny's (2005) elaboration of Merton's (1968) Matthew effect, we observe that the direct impact of the additional quality information on price is actually lower for the status producers. In fact, the overall effect of the quality score among the classified producers (0.010) is no longer significant in model 7c.

Critics gained credibility over time in part from their demonstrated ability to track the prevailing system of mediation (see Tables 2 and 4). According to prevailing theorizing about status, this should eliminate alter-centric uncertainty and lead to the demise of the status hierarchy. This outcome is especially likely if the published product quality information questions the information implied by the status hierarchy or if it reveals a high degree of variability against the relatively rigid status orderings. At the time that the critics arrived into the market, there was some uncertainty about the perceived validity of producer status as an indicator of its product quality. This was evident in the imprecise estimates of the second through fourth growth indicator variables. We propose that the discipline imposed by the presence of credible critics in the market helped to ease these concerns. This discipline is evident in the latter two columns of Table 4. Following Sorenson and Sorensen (2001) and Sorensen (2002), we employed a multiplicative heteroscedasticity, or variance function model (Davidian and Carroll 1987) to assess the impact of status rank and critical coverage on the variance in quality around expected levels. Here, wine quality is broken into two components, μ and σ , where μ is a function that describes expected quality while σ reflects quality variance. More specifically, σ is modeled as $\sigma = \exp(\gamma'Z)$, where γ is a vector of

coefficients reflecting the influence of the Z variables on the variance of quality around expected levels. Because the first (mean) and second (variance) moments of a normal distribution are independent of each other, one can maximize the likelihood function to obtain the estimates of the γ parameters (Greene 2000).

In the earlier 1985 to 1989 period, we see an increase in mean quality with greater critical coverage. However, neither status nor critical coverage exerted any impact on the variance of wine quality. Because of their limited tenure in the market, the critics were not yet able to exert any direct or indirect pressure on quality reliability. By the end of the sample period, we see the same pattern of effects on average quality but also effects on quality variability. Classified producers now vary significantly less in the quality of their wines. Producers who receive more critical coverage also vary less in their quality demonstrations. The mounting credibility of the *Wine Spectator* critics seemed to induce classified producers to produce better quality with less variability. The increasing correspondence and therefore redundancy between the guidance provided by critics and that built into the 1855 Classification helps explain why the product specific quality information offered by critics was not directly relevant to pricing in the latter period. Within-rank reductions in quality variance allowed consumers of high status offerings to confidently ignore product-level quality information. The emergence of critics and their potential to provide damaging information about classified producers that did not live up to the expectations associated with their rank induced these classified producers to generate more status-consistent quality outcomes.

Discussion

As in White and White's (1993) analysis of French art markets, the rigid small numbers framework of the 1855 Classification could not by itself accommodate the growing interest in the quality of Bordeaux wine producers situated beyond the established status hierarchy. Wine critics emerged to address this problem and then gained credibility in the eyes of market participants. In doing so, they created a situation that might have threatened the established status hierarchy. By publishing increasingly

credible information about underlying product quality, these critics reduced the alter-centric uncertainty that is necessary for status to have its predicted effects on valuations and therefore prices.

However, we did not observe a diminution of the influence of status. Rather, the main effect of the 1855 Classification rankings on prices became more pronounced as critics gained credibility. This helps us to better understand how status hierarchies function in information-starved markets. Rather than assuming that audience members seek to gain access to otherwise unobservable information about product quality, it is more plausible to assert that consumers of status offerings prefer to *credibly* assume that status serves as a valid proxy for unobserved product quality. In effect, these consumers do not really want to know how good products actually are. They simply want to be allowed to assume that the highest status producers really do offer the highest quality products. In the context of Bordeaux, it has been suggested by industry insiders that even when quality information is available, there is something desirable about having a small set of elite producers that are taken-for-granted. According to wine merchant, Jeffrey Davis, “it takes no genius to procure and propose the [classified] wines ... *what does take time and perseverance* is uncovering those producers in the less revered appellations who are determined to make the most exceptional wines possible.” (Echikson 2004, pg. 56, emphasis added)

It seems that a refinement is warranted to the information story that underpins prevailing theories about status. Consumers in a market seek quality but do not necessarily want to actively think about it. They simply want to be allowed to know that their consumption decisions are appropriate. In previous analyses, Stevens (1991) affirmed that most firms hire Big Six (Four) accounting firms because they do not want to worry about the underlying quality of their audits, while Uzzi and Lancaster (2004b) proposed that these same firms seek high status law firms because they do not want to think about the quality of the legal services that they purchase. The real problem is not that consumers cannot gain access to more direct quality information. Rather, it is that cognitively and attention starved market participants do not want to spend the effort accessing and processing such information. This refinement fits the case of Bordeaux wines very well. By the late 1970s, questions had emerged about the validity of the 1855 Classification rankings. As such, the impact of these rankings on prices became smaller and less reliable

(see Table 5). With credible critics in the market providing quality scores for both ranked and unranked producers, we observed reduced variance in the wine quality demonstrations within each ranking. This increased reliability gave the market renewed confidence in its status producers, thereby increasing the impact of each classification rank while lowering the direct impact of quality scores for these elite producers.

In addition to this disciplining effect, the more fluid critics' based system also affords the opportunity to correct the more permanent mistakes that creep into an ossified and outdated system of mediation. In this respect, there should be examples wherein the critics implicitly elevate or demote misclassified producers. To close our analysis, we juxtaposed the 1855 Classification against the observed distribution of quality and critical coverage data from 1998 to 2001. More specifically, we created a 'critics' value' function from the relevant parameter estimates from model 7c in table 5 and the average of the critical coverage and quality score information for each producer over the period. We then sorted the producers and report the top nineteen in Table 6. This clearly shows that groupings implied by the coverage and quality variables closely map the top status rankings laid down roughly 150 years earlier. However, it also documents a few of the corrections offered by the critics-based system.

Table 6 about here

The most salient correction relates to *Château La Mission-Haut-Brion*. This property was part of the *Haut-Brion* estate until the seventeenth century. With successive changes in ownership, its standing declined to such an extent that it was left off the list of classified producers in 1855. In 1921, control of the château passed to Henri Woltner who over fifty years "raised the reputation of this property so that it can now stand comparison with the finest in Bordeaux." (Peppercorn 2003, pg. 337) In fact, Peppercorn (2003, pg. 50) explicitly claimed that by the criteria of quality, excellence and price, "there is really only one property that looks like joining the august company of *Lafite, Latour, Margaux, Mouton-Rothschild, Haut-Brion ...* and that is *La Mission Haut-Brion*." Because of its implicit elevation by the actions of the critics, "its price is now also very close to the firsts." (pg. 50) With the prospect of implied elevation

comes that of demotion. *Château Lascombes* was classified as a second growth producer in 1855 but clearly resembled an unclassified producer during the 1998 to 2001 period. Again in the words of Peppercorn (2003, pg. 82): “At the time of the classification, it comprised a small vineyard producing only some 10 to 15 tonneaux ... [however] by 1951 the château was in a poor state. The quality and reputation of the wines were at a low ebb, the vineyard neglected.” While a rigid status hierarchy does not have the capacity to reclassify *Château Lascombes*, the more fluid critics system accounted for these more recent quality problems. According to the pricing data in Table 6, the prices charged by *Château Lascombes* reflected these problems and were well below those charged by other second-growth producers. Given the demonstrated potential to punish producers with reduced and less favorable coverage, the critics also provide a stimulus for improvement. With a change in ownership, “the vineyard has now been restored and much enlarged. There was a big initial improvement in the quality of the wines.” (pg. 82) It remains to be seen whether *Château Lascombes* returns – in the eyes of the critics – to the quality levels implied by a second-growth designation.

Finally, our analysis forces us to revisit other research that jointly considered the effects of status and other market mediators. Following Merton (1968), Benjamin and Podolny (1999) predicted and then demonstrated a *positive* interaction between a California wine producer’s status – indicated by individual and collective deferrals to different wine producing regions – and the quality scores published in the *Connoisseurs Guide* on wine prices. The authors posited that given uncertainty in the published product quality information, the positive assumptions that audiences make about higher status producers enhances the favorable interpretations that come with positive quality ratings. This contradicting finding across two markets (California and Bordeaux) using different approaches affords an opportunity to place boundary conditions on our theorizing and empirics. Benjamin and Podolny’s (1999) measure of producer status built from the observed pattern of appellation affiliations. The status of any region is an increasing function of the number of public deferrals made to it by non-local wineries. The higher is the status of the regions in which these non-local wineries reside, the higher is the focal region’s status. The corresponding producer status is the recent average of the regional affiliations of the wines that it has produced. While

this conception of status clearly captures the patterns of deference that constitute status hierarchies, it misses a key element featured in Merton's (1968) analysis; i.e., the rigidity that comes with a concrete mechanism for exclusion. It therefore lacks the margins that locate the phenomenon of the 41st chair.

The documented positive interaction between status and quality scores isolates the increased confidence that audience members have in correlated noisy quality signals. This occurs because the assumptions that underlie status-based inferences increase the faith that consumers have in the quality indicators (Podolny 2005). In our case, the dynamics that led to the refocusing of the incumbent status hierarchy amplified a negative interaction between the classification and the quality rating variables. In fact, the combined effect of the quality and quality-classification interactions was not statistically distinguishable from zero. Rather than garnering greater returns to these alternative quality indicators, this suggests a localizing of the effect of critical judgments in the areas beyond the margins of the status hierarchy. The disciplining effect of these critics in the market created the conditions that allowed the assumptions about the quality implications of status to hold. In this case, producer status did not reduce the uncertainty inherent in the alternative product-level quality indicator. Rather, these indicators reduced the uncertainty inherent in the producer-level status indicator. Both the direct effect of quality scores beyond the margins and the firming up of status assumptions within them require a rigid status hierarchy with clear boundaries.

Another recent examination of the interplay between status hierarchies and market mediators is Sauder *et al.*'s (2007; 2006) analysis of the annual *US News and World* rankings of law schools. These authors analyze how the more fluid rankings offered by this mediator transformed the nexus between producers and consumers thereby changing the orientation and behaviors of law schools. Behind their analyses is an implicit observation that the relatively stable status hierarchy that governed law schools faded in the face of these annually-updated rankings offered by mediators. This mirrors the demise discussed by White and White (1993). We again propose that the conception of status and status rankings offered by Sauder *et al.* (2007; 2006) is more general than that proposed by Merton (1968). In fact, annually-updated rankings based on structured quality information that is collected, analyzed and

summarized by market mediators places the *US News and World* rankings closer to a critics-based system of mediation. The main differences are that the quality information is provided in the form of rankings and not ratings, and that the focus of the analysis is the producer and not its various products.

In Table 7, we follow Sauder (2006) and treat the Blau-Marguiles rankings (Blau and Marguiles 1974-1975) as indicative of an incumbent law school status hierarchy in the pre-1990 period (1990 was the first year that the *US News and World* law school rankings were published). Two observations from Table 7 are striking and conform to the observations we made about Bordeaux wines. First, the first *US News and World* ranking was consistent with the rankings implied by the incumbent status hierarchy. Only the University of California drops out of the top nine schools while the University of Michigan falls several spots. Moreover, across eighteen years, only six schools ever occupy the top five spots in the *US News and World* rankings. Four of these were in the Blau-Marguiles top five while the other two were ranked sixth and eighth. This stability, along with the preservation of the incumbent status rankings, is consistent with our observations about the ranking of wine producers in Bordeaux. Given this, it would be interesting to revisit these law school studies and decompose the reactions to the rankings into those taken by schools that are directly and continuously affected by this influential mediator (i.e., those beyond the stable cadre of elite schools) and those taken by the high status schools that are only indirectly affected by the discipline that the *US News and World* provides.

Table 7 about here

Conclusions

When information problems permeate markets, ameliorating structural elements provide the basis for orderly exchange and therefore predictable outcomes. In regards to pricing, two such problems are the hidden quality information problem and the problem of large numbers. These are addressed by structures that mediate relationships between producers and consumers and provide quality information about those producers identified as relevant players. Status orderings emerge in networks of deference and exchange to inform market participants about quality *and* limit participation in the quality segments. Alternatively,

critics disseminate information about product quality in their published reviews while identifying relevant producers with their patterns of coverage over time.

While status and critics both solve the problems of hidden quality information and large numbers of contending producers, they do so in different ways. With historical patterns of deference built into market exchanges, status-mediated markets establish a small and stable cadre of quality-relevant players. A producer's position within the status hierarchy provides more fine-grained information about its otherwise unobservable product quality. In critics-mediated markets, quality information is provided with each published product review. The problem of too many producers is addressed by the different histories of critical coverage; producers that have attracted more critical coverage are afforded more central positions in the market. When different structural elements offer similar types of guidance in the same market settings, the ensuing redundancy can lead to the supplanting of one by the other. This is what happened in White and White's (1993) analysis of French art markets. The effectiveness of the established status-based system waned in the presence of mounting large numbers problems. In its place emerged the more fluid critics-based system of mediation. On the other hand, when different structural elements offer different kinds of solutions, it is possible that both can persist and have different impacts in different parts of the market. This is what has happened in the market for Bordeaux wines after the emergence of the wine critics.

Expanding markets require guidance beyond the margins of the incumbent hierarchy, which by construction applies to a small and relatively unchanging cohort of producers. Here, critics perform their dual roles of identifying and providing quality information about previously uncovered producers. By specializing in the mediation of non-status producers, critics are able to restore the small-numbers scenario that characterized the market before large numbers pressures began to mount. At the same time, the threat of coverage by influential critics serves to discipline the quality demonstrations of producers that have status. This amplifies the Matthew effect (Merton 1968) by increasing the returns to investments in quality among the status producers. Or, more precisely, the threat of losing status in the face of credible product-level quality assessments induces status producers to make the requisite investments in quality.

By reassuring audiences of the assumed link between status and quality, this has the non-intuitive effect of making less relevant critics' assessments of the quality of products offered by status producers.

Any recognition of the differential applicability of alternative systems (e.g., status hierarchies versus critics) in solving similar information problems requires attention to the processes that govern the transition from one system to another. Both the market for French paintings and the market for Bordeaux wines experienced a transition from a status-based toward a critics-based system of mediation. In both cases, the transformation was linked to intensifying large numbers pressures that were the result of *both* demands from excluded producers for consideration *and* demands from an expanding cadre of consumers seeking broader guidance. Continued research on the features and functions of distinct systems of mediation and the factors that stimulate changes in those systems will provide a deeper appreciation of how orderly pricing is sustained within quality-based markets. In this respect, our finding that the standing of the high-status producers survived the arrival of a modified system of mediation has interesting historical precedent. The longer-term history of Bordeaux reveals a series of changes in how the nexus of producers and consumers is mediated. Early in its history, the status of the different châteaux 'leaked' (Podolny 2005) from the social positions occupied by the families that established them. Following an ongoing process of social deference, market prices for Bordeaux wines came to mirror the standings of the various owners. As the market for Bordeaux wines broadened, important middlemen (i.e., brokers) emerged as custodians of the orderings of elite Bordeaux producers. As is clearly revealed in the various lists (or classifications) that were dated from 1741 to 1853 and published in Markham (1998) and Coates (2004), the orderings held and revised by various brokers revealed a strong correspondence to the original pecking order as well as a startling consistency over time. When the 1855 Classification was written down, it reflected and then ossified the orderings that existed in the middle of the nineteenth century. So, long after the arrival and emergence of US-based wine critics, we saw in Table 6 an ordering whose pinnacle closely maps that laid down centuries ago and using very different criteria. These observations suggest that while systems of mediation change, an important artifact is the continuity in the ranking of elite producers across them.

We close by emphasizing that our study of a single episode wherein an established status hierarchy operated alongside of increasingly credible critics provides insights that are in need of generalization. This is especially so given the different kind of outcome documented by White and White (1993) and the seemingly contradictory results documented in studies of the California wine industry and the market for law schools in the United States. It will be most interesting to see exactly how our findings generalize to other contexts, including the *St. Emilion* and *Pomerol* regions in Bordeaux. The latter region had no official classification prior to the arrival of the critics, while the former had a system that was less entrenched and subject to periodic revision. These kinds of differences should provide empirical traction for critical questions about status and critical mediation. The need for a more nuanced understanding of how different market structures individually or jointly influence markets and orderly market arrangements also requires more nuanced theoretical inquiry. As we stressed in the introduction, economic sociology has made great progress understanding how elements of market structure influence observed market outcomes. However, further insights and refinements are achieved when one considers specific elements in conjunction with others. In this respect, consider brokerage and closure – two distinct ways that network patterns can affect performance outcomes. Instead of viewing these two network effects in isolation, researchers are showing how brokerage and closure actually complement each other (Burt, 2000; Reagans, Zuckerman and McEvily, 2004). Similarly, by juxtaposing structural holes and status-based mechanisms, Podolny (2001) argued that the implications of a particular kind of network structure depend on whether prevailing information problems are ego-centric or alter-centric. It is only when we theorize and then observed specific elements of structure in the context of others were such refinements made possible.

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Table 1. The 1855 Classification of Bordeaux (Medoc)

First Growths	Fourth Growths
Château Lafite Rothschild, Pauillac	Château Saint-Pierre, St.-Julien
Château Latour, Pauillac	Château Talbot, St.-Julien
Château Margaux, Margaux	Château Branaire-Ducru, St.-Julien
Château Haut-Brion, Pessac	Château Duhart-Milon-Rothschild, Pauillac
Château Mouton Rothschild, Pauillac ^a	Château Pouget, Cantenac-Margaux
	Château La Tour Carnet, Haut-Médoc
Second Growths	Château Lafon-Rochet, St.-Estèphe
Château Rauzan-Ségla, Margaux	Château Beychevelle, St.-Julien
Château Rauzan-Gassies, Margaux	Château Prieuré-Lichine, Cantenac-Margaux ^b
Château Léoville-Las Cases, St.-Julien	Château Marquis de Terme, Margaux
Château Léoville-Poyferré, St.-Julien	
Château Léoville Barton, St.-Julien	Fifth Growths
Château Durfort-Vivens, Margaux	Château Pontet-Canet, Pauillac
Château Gruaud-Larose, St.-Julien	Château Batailley, Pauillac
Château Lascombes, Margaux	Château Haut-Batailley, Pauillac
Château Brane-Cantenac, Cantenac-Margaux	Château Haut-Bages-Libéral, Pauillac
Château Pichon Longueville Baron, Pauillac	Château Grand-Puy-Lacoste, Pauillac
Château Pichon Longueville Comtesse de Lalande, Pauillac	Château Grand-Puy-Ducasse, Pauillac
Château Ducru-Beaucaillou, St.-Julien	Château Lynch-Bages, Pauillac
Château Cos d'Estournel, St.-Estèphe	Château Lynch-Moussas, Pauillac
Château Montrose, St.-Estèphe	Château Dauzac, Labarde
	Château d'Armailhac, Pauillac ^c
Third Growths	Château du Tertre, Arsac
Château Kirwan, Cantenac-Margaux	Château Pédesclaux, Pauillac
Château d'Issan, Cantenac-Margaux	Château Belgrave, Haut-Médoc
Château Lagrange, St.-Julien	Château de Camensac, Haut-Médoc
Château Langoa Barton, St.-Julien	Château Cos Labory, St.-Estèphe
Château Giscours, Labarde-Margaux	Château Clerc-Milon, Pauillac
Château Malescot St. Exupéry, Margaux	Château Croizet Bages, Pauillac
Château Cantenac-Brown, Cantenac-Margaux	Château Cantemerle, Haut-Médoc
Château Boyd-Cantenac, Margaux	
Château Palmer, Cantenac-Margaux	
Château La Lagune, Haut-Medoc	
Château Desmirail, Margaux	
Château Calon-Ségur, St.-Estèphe	
Château Ferrière, Margaux	
Château Marquis d'Alesme Becker, Margaux	

^a reclassified from Second Growth status in 1973

^b formerly Château Cantenac-Prieuré

^c formerly Château Mouton Baronne Philippe

Table 2. Descriptive Statistics and Pair-Wise Correlations (N=1,877)

	Mean	Std. Dev.	Min	Max							
1. Ln of Real Price	2.73	0.53	1.17	5.13							
2. Vintage Rating	88.52	8.36	70.00	98.00							
3. Bottle Age	3.21	1.13	1.00	12.00							
4. Second Label	0.12	0.32	0.00	1.00							
5. First Growth	0.04	0.21	0.00	1.00							
6. Second Growth	0.10	0.30	0.00	1.00							
7. Third Growth	0.08	0.27	0.00	1.00							
8. Fourth Growth	0.06	0.24	0.00	1.00							
9. Fifth Growth	0.10	0.30	0.00	1.00							
10. Ln of Prior Reviews	1.85	1.22	0.00	5.52							
11. Quality Score	85.25	5.77	57.00	100.00							

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.
1. Ln of Real Price										
2. Vintage Rating	0.12									
3. Bottle Age	0.09	0.12								
4. Second Label	-0.16	0.06	-0.02							
5. First Growth	0.56	-0.05	0.00	-0.08						
6. Second Growth	0.31	-0.03	-0.01	-0.12	-0.07					
7. Third Growth	0.12	0.00	0.01	-0.11	-0.06	-0.10				
8. Fourth Growth	0.05	-0.03	0.02	-0.09	-0.06	-0.09	-0.07			
9. Fifth Growth	0.04	-0.02	0.00	-0.12	-0.07	-0.11	-0.10	-0.09		
10. Ln of Prior Reviews	0.53	-0.14	-0.03	-0.21	0.34	0.26	0.08	0.08	0.06	
11. Quality Score	0.59	0.41	0.07	-0.10	0.27	0.19	0.09	0.04	0.06	0.34

Table 3. Determinants of Bordeaux Wine Prices^a

	Model 1 Controls	Model 2 Status	Model 3 Critics	Model 4 Additive	Model 5 Interactive	Model 6 Robust
Vintage Rating	0.005* (0.003)	0.005** (0.002)	-0.004* (0.002)	-0.001 (0.002)	-0.001 (0.002)	0.001 (0.002)
Bottle Age	0.029*** (0.010)	0.033*** (0.007)	0.037*** (0.007)	0.036*** (0.006)	0.036*** (0.006)	0.029*** (0.006)
Second Label	-0.394*** (0.033)	-0.079*** (0.027)	-0.021 (0.026)	0.050** (0.024)	0.053** (0.024)	0.077*** (0.025)
Parker - Outstanding	-	-	-	-	-	0.540*** (0.045)
Parker - Excellent	-	-	-	-	-	0.293*** (0.033)
Parker – Very Good	-	-	-	-	-	0.156*** (0.029)
Parker – Good	-	-	-	-	-	0.038 (0.026)
Parker – Average	-	-	-	-	-	0.030 (0.026)
Average of Prior Quality Scores	-	-	-	-	-	0.005** (0.002)
First Growth	-	1.509*** (0.040)	-	0.964*** (0.041)	1.945*** (0.258)	1.766*** (0.243)
Second Growth	-	0.631*** (0.030)	-	0.383*** (0.028)	1.336*** (0.251)	1.247*** (0.237)
Third Growth	-	0.387*** (0.033)	-	0.241*** (0.029)	1.179*** (0.249)	1.199*** (0.235)
Fourth Growth	-	0.263*** (0.036)	-	0.172*** (0.031)	1.103*** (0.247)	1.129*** (0.234)
Fifth Growth	-	0.217*** (0.031)	-	0.151*** (0.027)	1.076*** (0.246)	1.145*** (0.233)
Ln of Prior Reviews	-	-	0.217*** (0.009)	0.142*** (0.009)	0.152*** (0.010)	0.084*** (0.014)
Classified*Ln of Prior Reviews	-	-	-	-	-0.033** (0.014)	-0.038*** (0.014)
Quality Score	-	-	0.037*** (0.002)	0.024*** (0.002)	0.029*** (0.002)	0.023*** (0.002)
Classified*Quality Score	-	-	-	-	-0.010*** (0.003)	-0.011*** (0.003)
Ln of Prior Reviews*Quality Score	-	-	0.013*** (0.001)	0.006*** (0.001)	0.008*** (0.001)	0.007*** (0.001)
Ln of Prior Reviews + Classified*Ln of Prior Reviews	-	-	-	-	0.119***	0.047***
Quality Score + Classified*Quality Score	-	-	-	-	0.019***	0.012***
N	1,877	1,877	1,877	1,877	1,877	1,877
Adjusted R²	0.298	0.631	0.639	0.725	0.728	0.761

*** p<0.01; ** p<0.05; * p<0.10

^a models include controls for fixed year and fixed appellation (*Graves, Haut-Medoc, Margaux, Pauillac, Pessac-Leognan, St. Estephe, St. Julien*) effects

Table 4. Quality Scores, Status Rankings and Critical Coverage

	Early (1985-1989)	Late (1998-2001)	V.F.M.^a Early (1985-1989)	V.F.M.^a Late (1998-2001)
<u>Mean Function:</u>				
Vintage Rating	0.257*** (0.035)	0.372*** (0.038)	0.240*** (0.030)	0.409*** (0.034)
Bottle Age	-0.366 (0.282)	-0.297 (0.697)	-0.517** (0.253)	-0.266 (0.764)
First Growth	11.609*** (1.591)	8.559*** (2.311)	11.451*** (1.305)	9.467*** (1.690)
Second Growth	8.082*** (1.177)	5.776*** (1.746)	8.615*** (0.961)	6.526*** (1.298)
Third Growth	4.540*** (1.204)	4.706*** (1.429)	4.592*** (0.968)	5.391*** (1.094)
Fourth Growth	4.777*** (1.343)	3.776** (1.475)	5.249*** (1.388)	4.480*** (1.083)
Fifth Growth	5.119*** (1.161)	3.846*** (1.344)	5.933*** (1.140)	4.462*** (1.036)
Ln of Prior Reviews	3.452*** (0.608)	1.564*** (0.171)	3.527*** (0.624)	1.725*** (0.187)
Classified*Ln of Prior Reviews	-2.370*** (0.771)	-0.924*** (0.469)	-2.643*** (0.706)	-1.198*** (0.367)
<u>Variance Function:</u>				
First Growth	-	-	-0.396 (0.394)	-1.627* (0.921)
Second Growth	-	-	-0.382 (0.291)	-1.390** (0.697)
Third Growth	-	-	-0.524* (0.298)	-1.187** (0.570)
Fourth Growth	-	-	0.227 (0.333)	-1.714*** (0.589)
Fifth Growth	-	-	0.098 (0.287)	-1.105** (0.537)
Ln of Prior Reviews	-	-	-0.221 (0.151)	-0.183*** (0.066)
Classified*Ln of Prior Reviews	-	-	-0.148 (0.191)	0.255 (0.187)
Ln of Prior Reviews + Classified*Ln of Prior Reviews	1.082**	0.640	0.884***	0.527
N	439	578	439	578
Adjusted R²	0.356	0.384	-	-

*** p<0.01; ** p<0.05; * p<0.10

^a Variance function model (Davidian and Carroll 1987)

Table 5. Determinants of Bordeaux Wine Prices across Time Periods

	Model 7a Early (1985-1989)	Model 7b Middle (1990-1997)	Model 7c Late (1998-2001)
Vintage Rating	0.002 (0.002)	0.002 (0.002)	-0.004 (0.010)
Bottle Age	0.031** (0.015)	0.028*** (0.006)	0.049 (0.058)
Second Label	0.028 (0.057)	0.080** (0.037)	0.084* (0.046)
Parker - Outstanding	0.583*** (0.093)	0.512*** (0.060)	0.469*** (0.100)
Parker - Excellent	0.301*** (0.081)	0.360*** (0.046)	0.108 (0.070)
Parker – Very Good	0.155*** (0.054)	0.217*** (0.044)	-0.021 (0.067)
Parker – Good	0.065 (0.048)	0.103*** (0.040)	-0.069 (0.058)
Parker – Average	-0.023 (0.064)	0.114*** (0.039)	-0.096 (0.056)
Average of Prior Quality Scores	-0.004 (0.003)	0.012*** (0.003)	0.020*** (0.005)
First Growth	1.378*** (0.489)	1.425*** (0.292)	2.767*** (0.780)
Second Growth	0.853* (0.476)	0.962*** (0.283)	2.152*** (0.765)
Third Growth	0.883* (0.467)	0.912*** (0.283)	2.000*** (0.757)
Fourth Growth	0.883* (0.468)	0.830*** (0.281)	1.957*** (0.752)
Fifth Growth	0.777* (0.467)	0.830*** (0.279)	1.972*** (0.746)
Ln of Prior Reviews	0.141** (0.057)	0.148*** (0.018)	0.082*** (0.025)
Classified*Ln of Prior Reviews	-0.084 (0.051)	-0.112*** (0.022)	-0.026 (0.045)
Quality Score	0.017*** (0.006)	0.014*** (0.003)	0.031*** (0.004)
Classified*Quality Score	-0.007 (0.005)	-0.005* (0.003)	-0.021** (0.008)
Ln of Prior Reviews*Quality Score	0.003 (0.003)	0.007*** (0.002)	0.010*** (0.003)
Ln of Prior Reviews + Classified*Ln of Prior Reviews	0.057	0.036* 0.009***	0.056 0.010
Quality Score + Classified*Quality Score	0.010	0.009***	0.010
N	439	860	578
Adjusted R²	0.751	0.798	0.775

*** p<0.01; ** p<0.05; * p<0.10

^a Models include controls for fixed year and fixed appellation (*Graves, Haut-Medoc, Margaux, Pauillac, Pessac-Leognan, St. Estephe, St. Julien*) effects

Table 6. Implicit Classification Invoked by Critics, 1998-2001

	Growth	Avg. of Ln Priors	Avg. of Quality Score	Critics' Value*	Order	Avg. of Real Price
Château Mouton Rothschild	1 st	4.78	95.42	3.69	1	\$61.10
Château Lafite Rothschild	1 st	5.50	93.42	3.69	2	62.05
Château Margaux	1 st	4.63	95.25	3.65	3	59.16
Château Haut-Brion	1 st	4.50	94.25	3.57	4	60.63
Château Latour	1 st	4.96	92.93	3.56	5	61.68
Château La Mission-Haut-Brion	U	4.60	93.13	3.52	6	50.91
Château Lynch-Bages	5 th	4.22	93.63	3.48	7	26.05
Château Cos d'Estournel	2 nd	4.47	92.38	3.45	8	34.51
Château Léoville-Las Cases	2 nd	4.28	92.43	3.42	9	84.53
Château Pichon Longueville Baron	2 nd	4.13	92.25	3.39	10	25.83
Château Gruaud-Larose	2 nd	4.51	89.88	3.31	11	28.66
Château Pichon Longueville Comtesse de Lalande	2 nd	4.32	90.00	3.29	12	44.00
Château Ducru-Beaucaillou	2 nd	4.30	89.14	3.24	13	37.93
Château Palmer	3 rd	3.58	90.75	3.23	14	35.46
Château Lagrange	3 rd	2.99	91.88	3.19	15	18.87
Château Montrose	2 nd	3.46	90.00	3.17	16	31.69
Château Léoville Barton	2 nd	3.40	90.13	3.17	17	26.21
Château Grand-Puy-Lacoste	5 th	3.25	90.00	3.14	18	25.19
Château Sociando-Mallet	U	3.13	90.25	3.14	19	16.51
Château Léoville-Poyferre	2 nd	3.02	89.71	3.10	26	21.10
Château Rauzan-Ségla	2 nd	3.13	89.00	3.08	29	25.34
Château Brane-Cantenac	2 nd	3.11	88.14	3.04	36	21.08
Château Lascombes	2 nd	2.53	86.60	2.91	74	18.73
Château Rauzan-Gassies	2 nd	2.44	86.60	2.90	79	20.09
Château Durfort-Vivens	2 nd	2.08	86.00	2.84	105	n/a

* Computed from values in model 7c -- $0.082 * \text{Average of Ln Priors (ALP)} + 0.031 * \text{Average of Quality Score (AQS)} + 0.01 * \text{Mean-Centered interaction of ALP and AQS}$

Table 7. US News and World Law School Rankings – 1990 to 2007

School	Blau-Margulies (1974-75)^a	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2004	2007
Harvard U.	1	5	2	2	2	2	2	2	2	2	2	3	3	2	2
Yale U.	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
U. of Michigan	3	7	6	6	7	8	8	7	7	8	8	7	7	7	8
Columbia U.	4	4	5	5	5	5	5	5	5	4	5	5	4	4	5
U. of Chicago	5	2	3	4	4	4	4	4	4	4	6	6	6	6	6
Stanford U.	6	3	4	3	3	3	2	3	3	2	2	2	2	3	3
U. of California	7	13	12	12	12	10	8	12	9	7	10	8	9	13	8
New York U.	8	6	7	7	6	6	6	6	6	6	4	4	5	5	4
U. of Pennsylvania	9	9	10	10	11	9	11	8	11	8	12	12	10	7	6

^a The *Blau-Margulies Reputational Survey* asked 104 law school Deans to name the top 5 law schools. These nine schools appeared most regularly.